



OnPathEnergy

Bodinglee Wind Farm
Indicative Grid
Connection Route
Appraisal

Final report

Prepared by LUC

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OnPathEnergy

Bodinglee Wind Farm Indicative Grid Connection Route Appraisal

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Chapter 1

Introduction

Bodinglee Wind Farm Project Background

1.1 The proposed Bodinglee Wind Farm (hereafter referred to as ‘the Proposed Development’) comprises up to 35 turbines and associated infrastructure, located to the south-east of Douglas, with the M74 motorway separating the eastern section of the Site (26 turbines) from the western section of the Site (nine turbines). The wind farm will consist of turbines with varying tip heights between 210 m and 250 m.

1.2 The application for consent for the Proposed Development was submitted to the Scottish Government’s Energy Consents Unit (ECU) in June 2023. Further Environmental Information (FEI) was submitted in May 2025, to present the design changes undertaken to the original design submitted in June 2023 to address consultee comments, including a reduction in the number of turbines from 37 to 35.

1.3 As detailed in the EIA Report, the Proposed Development is expected to connect to the national electricity network (‘the grid’) at the consented Redshaw substation (Reference P/25/0662¹). The grid connection will be subject to a separate application for consent by ScottishPower Transmission (SPT), under Section 37 of the Electricity Act 1989. Although an indicative grid corridor was illustrated within the EIA Report, the route options for the grid connection and the timing of the S37 application were not known. Therefore, potential environmental effects associated with the grid connection were not considered within the EIA Report.

1.4 In April 2026, the ECU requested further information from the Applicant in respect of the Wull Muir Wind Farm Judicial Review judgement² as it related to the Proposed Development, including in relation to the potential for significant effects with the grid connection.

Grid Reform

Introduction

1.5 The National Energy Systems Operator (NESO) is in the process of overhauling the way new energy projects connect to the electricity grid to identify a refined queue of viable projects that would facilitate in achieving the UK Government’s Clean Power 2030 ambitions and eliminate all stalled projects (i.e. projects that are currently taking up grid capacity that will not progress and are blocking viable projects from advancing). This is an important change, replacing the ‘first-come first-served’ grid connection processes with a ‘first ready, first needed and connected’ approach. This will facilitate the ability of the Transmission Operators (TOs) and NESO to plan and develop the transmission network that is vital for Clean Power and Net Zero targets amid growing demands.

1.6 Through the grid reform process, the TOs and NESO are restudying and/or optimising how the projects that remain in the refined queue will connect to the transmission network. As a result, the points of connection, and the grid route, for many projects are subject to change until such time as formal grid

¹ Construction of 400kV/132kV electricity substation and ancillary infrastructure (Environmental Impact Assessment). Available at: <https://publicaccess.southlanarkshire.gov.uk/online-applications/applicationDetails.do?keyVal=SXE41OPFVM00&activeTab=summary>

² Raeshaw Farms Limited v Scottish Ministers and Energiekontor (2026) (<https://www.scotcourts.gov.uk/media/t4eds4lr/2026csih10-raeshaw-farms-limited-against-scottish-ministers-and-another.pdf>). The planning permission for the proposed Wull Muir Wind Farm was overturned as it was found that the EIA failed to carry out the required fact-specific evaluation of whether the wind farm and grid connection formed a single project.

positions are secured by achieving a Gate 2 status. At this stage, it is anticipated that the Proposed Development will still connect into the existing Redshaw substation as noted above and as detailed in the EIA Report, and the Applicant has had discussions with SPT in relation to the likely route of connection as detailed further below. However, the final construction methods and route of the grid connection remain in the control of SPT and may change following further optioneering and constructability assessment work.

1.7 As part of the reformed connections process, projects are assessed and assigned a status (Gate 1 or Gate 2) based on their readiness and strategic alignment with the UK's energy goals as defined in the Clean Power 2030 Action Plan.

- Gate 2 applies to projects that meet the new requirements for readiness and strategic alignment. These projects can secure a confirmed connection date, connection point, and queue position.
- Gate 1 applies to projects that do not meet the Gate 2 criteria. Gate 1 projects will not be assigned a confirmed connection date but may progress through future windows if readiness is demonstrated.

Bodinglee Wind Farm Grid Reform Gate Status

1.8 The Proposed Development has received a Gate 2 position subject to a formal offer from NESO which is expected in May-September 2026.

Document Purpose

1.9 This document provides a proportionate Environmental Appraisal of an indicative grid connection route between Bodinglee Wind Farm and the consented Redshaw Substation based on the information currently known. The grid connection corridor has been informed by discussions between SPT and the Applicant but remains subject to change depending on further studies and site investigation. It should be noted that the Applicant is not seeking consent for this indicative grid route, which will be subject to a separate application for consent, and environmental survey and assessment as appropriate, by SPT.

1.10 The grid connection route has been identified on the basis of professional judgement, having regard to the locations of connection points within a reasonable distance of the wind farm and with appropriate capacity. It also takes into account well established guidance published by SPT in relation to the optioneering and design of grid connections³.

Document Structure

1.11 This document covers the following:

- An overview of the indicative grid connection corridor and connection point.
- The environmental appraisal methodology.
- The environmental appraisal, including consideration of landscape and visual amenity; ecology and ornithology; cultural heritage; hydrology, hydrogeology and peat; traffic and transport; and noise.
- A brief overview of cumulative effects of the indicative grid connection corridor with other projects.
- Summary.

Terminology

1.12 Throughout this appraisal, the following terminology is used:

³ SP Energy Networks Approach to Routeing and Environmental Impact Assessment (available at https://www.spenergynetworks.co.uk/userfiles/file/Document_9_SPEN_Approach_to_Routeing_and_Environmental_Impact_Assessment.pdf)

- Indicative grid connection corridor: potential corridor for the grid connection alignment that has been identified, informed through discussions between SPT and the Applicant, and which is assessed within this document.
- Proposed Development: Bodinglee Wind Farm as detailed and assessed in the Bodinglee Wind Farm EIA Report (June 2023).
- Transmission Operator (TO): SPT.
- Combined Project: the Proposed Development (i.e. Bodinglee Wind Farm as assessed in the Bodinglee Wind Farm EIA) together with the indicative grid connection corridor.

Chapter 2

Indicative Grid Connection Corridor

2.1 As discussed in **Chapter 1**, the Applicant is not responsible for designing, consenting, building or operating the grid connection. For the purposes of this report a grid connection corridor which connects to the consented Redshaw Substation using underground cable (UGC) technology has been assumed as informed by discussions between the Applicant and SPT.

2.2 The indicative grid connection corridor varies between approximately 100 m and 300 m wide, and is approximately 3.8 km in length. The indicative grid connection corridor initially exits the proposed boundary of the Bodinglee Wind Farm at the eastern side of the Proposed Development at Maidengill. It then travels in a southerly direction, parallel to the M74 motorway and approximately parallel with the Birshaw Burn. The route continues south to a disused quarry to the south of Wedder Law before crossing the M74 and the existing overhead line (OHL) and terminating at the connection point at the consented Redshaw Substation just before the B7078.

2.3 UGCs are typically installed through open cut trench techniques (except at water crossings and road/rail crossings where it is typical to use horizontal directional drilling (HDD)) and are accommodated in a trench approximately 1.25 m deep and 1 m wide, although the trench may be wider where stability and safety concerns would arise. As is typical with an UGC installation, it can be assumed that cable ducts would be installed progressively. Sections of cable will be joined together at cable jointing pits, with the location of these dictated by a number of factors including cable size/length and ongoing access requirements. Manhole covers above jointing pits will enable access just below the surface for routine maintenance. The cable will be marked on services maps provided to utility companies and will be installed with marker tape to warn of its presence below the ground. Typically, construction of UGC progresses at a rate of approximately 160 m to 320 m of per week, but this can vary depending on ground and weather conditions

Chapter 3

Environmental Appraisal Methodology

3.1 As identified above, the identified connection point and grid corridor may be subject to change following both the outcome of grid reform and SPT's design and assessment processes, however, an appraisal has been undertaken of the indicative grid connection route as shown on **Figures 1a-c** and as described in Chapter 2. As noted above, the grid connection is likely to be subject to a separate application for consent, and environmental survey and assessment as deemed appropriate by SPT and the consenting authorities. It bears repeating that the environmental information enclosed within this assessment has been provided on a precautionary basis, to allow the Scottish Ministers to understand what the likely combined effects might be of the Proposed Development together with the grid connection. Notwithstanding this, SPT will ultimately be responsible for obtaining any relevant consents and undertaking the required supporting environmental appraisal work.

3.2 The environmental topics assessed in the EIA Report for the Proposed Development and which are also considered in this appraisal of the effects of the grid connection include:

- Landscape and Visual Amenity;
- Ecology and Ornithology;
- Cultural Heritage;
- Geology, Hydrology and Peat;
- Traffic and Transport; and
- Noise and Vibration.

3.3 Impacts from/upon shadow flicker, aviation and telecommunications, will not be caused by the grid connection and therefore these issues are scoped out of further consideration within this document.

3.4 The Bodinglee Wind Farm EIA reported felling of 0.90 ha of woodland for construction of the access to the Proposed Development. From a desk based review, no forestry would be directly impacted by the indicative grid connection corridor. There is an area of woodland located directly west of the corridor at its closest point at the very north of the route west of Maidengill. If the route was to change and intercept with these any areas of woodland, this would be subject to further assessment and compensatory planting as appropriate by the TO.

3.5 The appraisal of each topic considers:

- Baseline: including a brief description of the existing conditions along the indicative grid connection corridor, informed by a review of available desk based sources.
- A high level appraisal of the potential for significant effects resulting from construction and operation of the indicative grid connection within the corridor identified.
- A high level appraisal of the potential for significant 'in combination' effects of the Proposed Development and the indicative grid connection within the corridor identified.
- Commentary on any changes from the findings of the Bodinglee Wind Farm EIA on the basis of the inclusion of the indicative grid connection as part of the Combined Project.

3.6 This document concludes with commentary of the potential for cumulative effects of the Combined Project and a summary of the findings of the Appraisal.

3.7 The most effective way to avoid or reduce environmental effects of any grid connection is through its careful routing and design. The indicative grid connection has not undergone this process, and a full suite of surveys has not yet been undertaken, therefore all judgements set out below are necessarily preliminary. However, it is considered likely that any potential significant environmental effects will be avoided where possible through a careful routing and design process to be undertaken by SPT.

3.8 This environmental appraisal has been designed to be proportionate, is based on the information available, supplemented by the information available in the Bodinglee Wind Farm EIA Report, and seeks to assess the potential for likely significant effects for identified environmental receptors. It identifies the key constraints and receptors for each topic, and a judgement is made on whether significant effects are likely to arise from the introduction of the grid connection in isolation or in-combination with the wind farm. It does not determine the significance of any potential effects (i.e. major, moderate, minor or negligible). This appraisal should be read in conjunction with the Bodinglee Wind Farm EIA Report and the relevant assessment chapters and methodologies for the topics considered below.

3.9 The appraisal is based on the following assumptions/limitations:

- As noted above, limited detailed environmental surveys have been undertaken to inform the appraisal. An ecological walkover of the corridor has been undertaken and is outlined in Chapter 5. Any further environmental surveys (including habitats, protected species, birds, peat, hydrology or cultural heritage) will be undertaken to inform the detailed routing and assessment of the grid connection for which consent will be sought by SPT as required, which may differ from the indicative grid connection corridor in this report.
- The appraisal has drawn upon the limited publicly available constraints information shown in **Figures 1a-c**, the findings of relevant assessments and survey data within the 2023 EIA Report and professional judgement and experience of likely significant effects of similar grid connection projects.
- The grid connection will be constructed in accordance with well-established good practice, in full compliance with regulatory requirements and in consultation with SEPA, NatureScot, South Lanarkshire Council (SLC) and other consultees as appropriate. The TO will comply with their duties under Schedule 9 of the Electricity Act 1989⁴ which requires TOs to protect the environment and amenity where reasonably practicable and mitigate environmental effects of their works. This provides a robust framework for ensuring that industry standard mitigations will be applied, and can be taken into account in determining significant effects for the purposes of this assessment.

⁴ <https://www.legislation.gov.uk/ukpga/1989/29/schedule/9>

Chapter 4

Landscape and Visual Amenity

Existing Conditions

4.1 As shown on **Figure 1a**, the indicative grid connection corridor is wholly within one landscape character type (LCT), namely LCT: 213 – Plateau Moorlands – Glasgow & Clyde Valley, which is characterised by “*individually defined hills, frequently dissected by drainage lines rather than forming a continuous flat plateau*”. The indicative grid connection corridor does not pass through any locally or nationally designated landscapes.

4.2 Visual receptors in the vicinity include users of a recreational route, the Core Path (CL/3464/1) located along the B7078 road which is also part of National Cycle Network (NCN) Route 74, and is located approximately 150 m south of the southern point of the indicative grid connection corridor. A track on the eastern side of the M74 is also noted as part of the cycling network which is intersected by the indicative grid connection route. Other receptors are largely limited to road users on the B7078 and M74. Recreational routes are shown on **Figure 1a**.

4.3 There are limited residential receptors within the vicinity of the indicative grid connection corridor. The majority of properties are located to the north of the corridor with the closest being located at Parkhead (within 700 m at the north of the corridor) and Redshaw (within 1.1 km to the west of the corridor).

4.4 Existing infrastructure within 3 km of the indicative grid connection corridor includes operational wind turbines at Andershaw and Middle Muir to the south-west of the corridor and Douglas West and Hagshaw Hill (Repowering and Extension) to the north-west. The M74 and B7078 roads broadly follow the indicative grid connection corridor, and an existing OHL runs between them.

Appraisal of Potential Significant Effects from the Indicative Grid Connection Corridor

Landscape Effects

4.5 There would be temporary disturbance to the landscape during construction of the grid connection. Given the limited footprint of construction works associated with a project of the type and scale likely to be proposed, the scale of landscape change and geographical extent of landscape change within the host LCT associated with the indicative grid connection corridor would be small, experienced for a short duration of time (short-term). Overall, the construction indicative grid connection would result in a low magnitude of landscape change. Therefore, significant landscape effects during construction are considered unlikely to arise.

4.6 Once operational, the land cover above the UGC would be restored using established good practice techniques. Once restored, the indicative grid connection would not be a discernible feature in the landscape, therefore, significant landscape effects during operation are considered unlikely to arise.

Visual Effects

4.7 In terms of visual amenity, there would be temporary visual effects during construction of the indicative grid connection. This would arise from preparation of temporary working areas; excavation and temporary soil storage; delivery and installation of UGC; and the movement of associated construction vehicles. Given

the limited footprint of construction works associated with an UGC of the type and scale likely to be proposed, the scale of visual change and geographical extent of visual change associated with the indicative grid connection would be small, experienced for a short duration of time (short-term). Overall, construction of the indicative grid connection would result in a low magnitude of visual change, typically limited to lower sensitivity visual receptors such as road users passing in closer proximity where construction activities would be more clearly perceptible. From more distant residential receptors, the magnitude is likely to be lower. Therefore, significant visual effects during construction are considered unlikely to arise.

4.8 Once operational, as the infrastructure would be underground and the landcover restored, there would be no discernible visibility of the UGC, therefore, significant visual effects during operation are considered unlikely to arise.

4.9 This appraisal is based on data, methodology and analysis included within the Bodinglee Wind Farm EIA Report. It is assumed that further study including updated OS Address data, mapping and consultation would be undertaken as part of SPT's final routeing work.

Appraisal of Potential Significant In-Combination Effects

4.10 Given the nature of the indicative grid connection, and the existing infrastructure within the wider landscape, it is considered unlikely that the indicative grid connection corridor identified would give rise to significant landscape and visual effects during either construction or operation.

4.11 The Bodinglee Wind Farm EIA Report concluded that significant residual effects on landscape character were predicted to extend across the Proposed Development Site and the surrounding landscapes within approximately 6 km of the nearest turbine. This included significant effects on the 'host' Landscape Character Type (LCT 213: Plateau Moorlands – Glasgow and Clyde Valley) as well as neighbouring LCTs. Significant residual effects on visual amenity were identified at 15 of the 23 representative viewpoints used for the LVIA, up to a distance of around 11 km from the Proposed Development. Significant effects will also be experienced by road users on parts of the A70, B7078 and B7055, as well as users of some sections of the National Cycle Network Route 74 and the core path network within 5 km of the Proposed Development.

4.12 Considering the technology choice (i.e. UGC), corridor and scale of the indicative grid connection, it is considered that the in-combination effects of the Combined Project would not give rise to any further significant landscape and visual effects in addition to those identified in the Bodinglee Wind Farm EIA Report.

Appraisal of Differences from Conclusions of the EIA Report

4.13 The above appraisal of the indicative grid connection does not change the conclusions reported in the Bodinglee Wind Farm EIA Report with respect to landscape and visual amenity.

Chapter 5

Ecology and Ornithology

Existing Conditions

5.1 The indicative grid connection corridor does not intersect with any designated or non-designated sites denoted for ecology or ornithology. However, Red Moss Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) is located 360 m south of the southern connection point of the indicative grid connection corridor, beyond the southern side of the B7078 road. Annex I habitats (active raised bogs) is the priority feature of the site.

5.2 There is no woodland designated on the Ancient Woodland Inventory (AWI) that is intersected by the indicative grid connection corridor. There is an area of Long-Established (of plantation origin) (LEPO) woodland listed on the AWI approximately 270 m to the west of the southern connection point.

5.3 Based on the NatureScot Carbon and Peatland 2016 map⁵, the northern part of the corridor is shown as not located on peat and includes an area noted as a disused quarry before the corridor crosses the M74 motorway. The remainder of the corridor is located on a mixture of Class 3 and Class 5 which indicates there is peat present with some peat forming vegetation.

5.4 The ornithology chapter of the Bodinglee EIA Report stated that there were a number of birds identified across the study area including raptors, moorland breeding birds and black grouse. Due to the similar habitats present across the indicative grid connection corridor it is likely that similar bird species would be present.

5.5 The ecology chapter of the Bodinglee EIA Report stated that there are peatland habitats, Groundwater Dependant Terrestrial Ecosystems (GWDTE) and protected species including badger, otter and bats located within the study area for the Proposed Development. It was also stated that non-migratory trout were shown to be present close to or outside the Proposed Development Site boundaries and there was potential presence of brook lamprey. An initial non-avian ecological walkover along the indicative grid connection corridor was undertaken in April 2026 which confirmed the presence of peatland habitats (including Annex 1 habitats) and habitats which could be classified as potential GWDTEs. It was also noted that habitats within the area had suitability to support otters, badger, bats and reptiles as well as brook lamprey.

5.6 Further ecological and ornithological surveys would require to be undertaken by SPT along the length of the grid connection corridor (and appropriate buffers/viewpoints) to identify the presence of protected species and/or habitats that could be affected. Survey findings would inform any adjustments to the routing of the grid connection to avoid and/or minimise effects to the identified.

Appraisal of Potential Significant Effects from the Indicative Grid Connection Corridor

5.7 As noted above, the indicative grid connection corridor does not intersect directly with any designated or non-designated sites for ecological or ornithological interest. The corridor also doesn't cross any tributaries with hydrological connectivity to the Black Burn which is the catchment for Red Moss SAC/SSSI and therefore any direct or indirect effect pathways between the indicative grid connection corridor and designated sites would be avoided. Furthermore, with the application of standard good practice mitigation

⁵ Carbon and Peatland 2016 map. Available at: <https://soils.environment.gov.scot/maps/thematic-maps/carbon-and-peatland-2016-map/>

such as maintaining buffer distances from watercourses, no significant effects are likely to arise on any features of designated sites during construction or operation of the indicative grid connection corridor.

5.8 Construction of the indicative grid connection corridor would result in the direct loss of some habitats, potentially including Annex I habitat such as bog. A hydrological survey would require to be undertaken to identify the groundwater dependency of the GWDTE habitats present along the corridor and amendments to the routing and mitigation would require to be put in place if required to avoid effects on GWDTE habitat. It is assumed that, where possible, the final route/alignment of the grid connection would seek to avoid the most sensitive areas of habitat, as informed by surveys. As such, with habitat management plan mitigation in place, it is considered unlikely that there would be any significant effects on habitats during construction.

5.9 During construction, there is the potential for effects on protected species, fish and breeding/roosting birds (including lekking black grouse) as a result of disturbance, mortality, and habitat loss / fragmentation. However, embedded design mitigation, best practice including a Construction Environmental Management Plan (CEMP) and species/bird protection plans would likely avoid or mitigate for any significant effects on habitats, protected species and birds during construction. It is also likely that an Environmental Clerk of Works (EnvCoW) would be appointed for the duration of the construction works.

5.10 Operational effects on birds are unlikely as the indicative grid connection corridor is underground and therefore there is no risk of collision/bird strike.

5.11 As noted in Chapter 3, the indicative grid connection corridor has not yet been subjected to any detailed onsite environmental surveys by SPT, although an initial site walkover was undertaken in April 2026. However, based on the assessment work undertaken and taking into account the flexibility in routing and detailed design to address any key constraints, standard best practice and any additional mitigation that would be applied, at this preliminary stage it is not considered that significant effects on ecology or ornithology are likely.

Appraisal of Potential Significant In-Combination Effects

5.12 It is considered unlikely that the indicative grid connection would give rise to significant construction or operational effects on ecology or ornithology.

5.13 The Bodinglee Wind Farm EIA Report concluded that there would be no significant effects on ecology or ornithology receptors.

5.14 The in-combination effects of the Combined Project would not give rise to any new adverse significant effects, or increase the level of effects associated with the Proposed Development such that they would be deemed significant for ecology or ornithology.

Appraisal of Differences from Conclusions of the EIA Report

5.15 The above appraisal of the indicative grid connection does not change the conclusions reported in the Bodinglee Wind Farm EIA Report with respect to ecology and ornithology.

5.16 Based on the indicative grid connection corridor shown in **Figures 1a-c** it will be important for the detailed routing and design of the grid connection to take into account the following design principles to effectively design out or minimise significant ecology and ornithology effects:

- avoid areas of sensitive or high conservation habitat as far as possible, including Annex I habitats;
- follow best practice regarding working near watercourses;
- minimise habitat loss wherever possible;
- maximise distance between designated sites as far as possible; and
- The final route will require full protected species surveys to inform works, including production of Species Protection Plans and relevant licensing if required.

Chapter 6

Cultural Heritage

Existing Conditions

6.1 The indicative grid connection corridor does not intersect with any designated heritage assets. The nearest designated heritage asset is the Thirstone, stone circle Scheduled Monument (SM5094) located approximately 630 m south of the southern-most end of the corridor as shown on **Figures 1b-c**.

6.2 The indicative grid connection corridor crosses six non-designated heritage assets. These comprise:

- the possible Roman road of Wiston – Patna (WoSAS ID: 22278);
- three examples of medieval to post-medieval rig and furrow cultivation remains (Asset IDs: HA66; HA74; HA76);
- an enclosure of probable post-medieval origin (Asset ID: HA85); and
- a circular enclosure, possibly a post-medieval sheepfold, (Asset ID: HA99).

6.3 There is also the potential for unrecorded buried archaeological remains to be present along the length of the indicative grid connection corridor.

Appraisal of Potential Significant Effects from the Indicative Grid Connection Corridor

6.4 Within the indicative grid connection route, there are six non-designated heritage assets and a potential for unrecorded burial archaeological remains to be present along the length of the corridor. Therefore, the construction phase of the Proposed Development may result in direct physical effects to non-designated heritage assets. However, given the flexibility within the grid connection corridor, it is anticipated that direct effects can be avoided, and therefore it is unlikely that direct significant effects would occur.

6.5 In line with good practice, it is likely that a professionally qualified Archaeological Contractor would be appointed to act as an Archaeological Clerk of Works (ACoW) for the duration of the construction phase of the grid connection. The role of the ACoW would be to provide advice to the appointed Construction Contractor regarding overseeing archaeological monitoring of topsoil stripping/groundworks in areas designated and approved by the West of Scotland Archaeology Service (WoSAS) on behalf of the Local Planning Authority (LPA). In addition, it would provide advice to the appointed Construction Contractor regarding micro-siting of development components to ensure preservation of assets in-situ, or else overseeing the advance archaeological excavation and recording ('preservation by record') of heritage assets, including those that may be identified during construction. It would also agree with WoSAS the need for, and location of, archaeological monitoring of topsoil stripping operation. Taking these mitigation measures above into consideration, significant direct effects are unlikely to arise on unrecorded archaeological remains cultural heritage receptors during construction.

6.6 Given the underground nature of the indicative grid connection, and the ability for undergrounding of cables to avoid or minimise effects on the setting of heritage assets, it is considered unlikely that the significant operational effects would arise.

6.7 Field surveys would be required to determine where potential effects could arise as a result of the indicative grid connection upon known heritage assets and unrecorded buried archaeological remains, in order to inform routeing and design of any grid connection.

Appraisal of Potential Significant In-Combination Effects

6.8 It is considered unlikely that the indicative grid connection would give rise to significant construction or operational effects on cultural heritage.

6.9 The Bodinglee Wind Farm EIA Report concluded there would be a significant operational residual effect to the setting of three scheduled monuments within the 5 km Study Area of the Proposed Development (SM4234, SM5425 and SM4511), as well as a significant cumulative operational effect to one scheduled monument (SM4234).

6.10 The in-combination effects of the Combined Project would not give rise to any new significant effects, or increase the level of effects associated with the Proposed Development.

Appraisal of Differences from Conclusions of the EIA Report

6.11 The above appraisal of the indicative grid connection does not change the conclusions reported in the Bodinglee Wind Farm EIA Report with respect to cultural heritage.

6.12 It will be important for the detailed routeing and design of the grid connection to take into account the following design principles to effectively design out or minimise significant cultural heritage effects:

- Routeing away from any known heritage assets to avoid direct physical effects during construction.

Chapter 7

Geology, Hydrology and Peat

Existing Conditions

7.1 The indicative grid connection corridor is within the River Clyde surface water catchment and is located within the Lesmahagow Drinking Water Protection Area (DWPA).

7.2 The indicative grid connection corridor runs parallel to and would cross the Birshaw Burn which is located to the east of the M74 motorway. One PWS was scoped into the Bodinglee Wind Farm EIA Report, namely Coalgill, which is located approximately 2.7 km north of the north end of the indicative grid connection corridor at grid reference 287435, 632607. The two properties closest to the indicative grid connection corridor, Redshaw and Parkhead, were identified as properties with potential Private Water Supplies (PWS) in the Bodinglee Wind Farm EIA Report.

7.3 As noted in Chapter 5 above, based on the NatureScot Carbon and Peatland 2016 map, the northern part of the corridor along with the area around the M74 motorway is not located on peat (approximately 1.4 km). The remainder of the corridor is located on a mixture of Class 3 (approximately 1 km) and Class 5 (approximately 1.33 km) which indicates there is peat present along the indicative grid connection corridor. The Bodinglee Wind Farm EIA Report identified peat across the Proposed Development. As the indicative grid connection corridor is in close proximity to the Proposed Development Site surveyed for the Wind Farm it is likely that peat is present along the corridor.

7.4 There is potential for GWDTE to be present along the indicative grid connection corridor, as noted in Chapter 5 above, GWDTE habitats were found to be present across the Proposed Development Site though much of this comprised marshy grassland habitat and was found to be fed predominantly through surface water and not groundwater.

Appraisal of Potential Significant Effects from the Indicative Grid Connection Corridor

7.5 The construction of the grid connection has the potential to result in a number of potential effects, including:

- potential effects on deep peat;
- disruption to the hydrogeological and groundwater system, including GWDTEs;
- the risk of ground and surface water contamination, including of PWS;
- increased sediment loading to streams;
- increased flood risk; and
- potential effects on ground stability.

7.6 British Geological Survey (BGS) mapping does not show substantial peat deposits to the west of the M74. The majority of the indicative grid connection route contains superficial deposits of Till.

7.7 However, Figure 10.5: Interpolated Peat Depths reported in the Bodinglee Wind Farm EIA Report⁶ suggests peat depths along the area of the indicative grid connection route located north of the M74 range between 0 m to 1 m. Due to the likelihood of peat presence across the length of the indicative grid connection corridor, there would be some impact to peat during construction.

7.8 Peat depth surveys would be undertaken to identify areas of deeper peat to be avoided through routeing and design as far as practicable to minimise potential effects. As per good practice, it is expected that a Peat Management Plan (PMP) would be produced which will provide information and guidance/best practice on the re-use and management of excavated peat and it is also likely that a habitat management and/or restoration plan would be prepared and as a result no significant effects on peat during construction are anticipated.

7.9 If new or previously unknown PWS are found to be present, mitigation would be put in place to ensure that effects are avoided or reduced and therefore residual effects are unlikely to be significant. The two properties which were noted as potentially having PWS in the Bodinglee Wind Farm EIA Report have sources which are over 250 m from the indicative grid connection corridor and are therefore unlikely to be affected.

7.10 As noted in Chapter 5, GWDTE habitats have been identified along the grid connection corridor but have not yet been subject to hydrological survey to confirm the groundwater dependency of these habitats. Further survey would inform routeing design and the need for additional mitigation as required.

7.11 The indicative grid connection corridor would cross watercourses and drains as shown on **Figures 1b-c**. The type of crossings would be determined during the detailed design phase and the watercourses will be crossed using a HDD method or may be crossed by open cut with a temporary diversion, damming or pumping. Watercourse crossing design measures are outlined in Technical Appendix 2.1 Outline Environmental Management Plan (oEMP) of the Bodinglee Wind Farm EIA Report. It is noted that the indicative grid connection corridor runs parallel and intersects with Birshaw Burn. However, it is considered that with the application of embedded mitigation such as adherence to any SEPA recommended buffers between infrastructure and watercourses and application of appropriate good practice guidance, any significant construction effects would be avoided.

7.12 SEPA Flood Mapping identifies minimal surface water and a small extent of watercourse flooding along the Indicative Grid Connection Corridor. The corridor is mostly located within areas classified as not being at risk of flooding while pluvial flood risk associated with Birshaw Burn is largely confined to the watercourse corridor. The construction of the Indicative Grid Connection Corridor would only be temporary in nature, and once constructed, all infrastructure would be underground therefore, no significant effects on flood risk are considered likely.

7.13 The final design of infrastructure should be carefully sited and micro-siting adopted if required in order to maintain the design objective of avoiding any potential peat slide risk.

7.14 Measures such as silt fencing, as outlined within the Bodinglee Wind Farm EIA Report oEMP, will prevent the increase of sediment loading to streams

7.15 Overall, taking into consideration embedded mitigation and good practice guidance, significant effects on geology, hydrology and peat and considered unlikely to arise.

7.16 No operational effects are likely to arise for geology, hydrology and peat.

Appraisal of Potential Significant In-Combination Effects

7.17 It is considered unlikely that the indicative grid connection would give rise to significant construction or operational effects on hydrology, hydrogeology, geology or peat following the implementation of embedded mitigation and good practice guidance.

⁶ Volume 3a in the Further Environmental Information provided in June 2023.

7.18 The Bodinglee Wind Farm EIA Report concluded that there would be no significant adverse effects on hydrology, hydrogeology, geology or peat.

7.19 The in-combination effects of the Combined Project would not give rise to any new significant effects, or increase the level of effects associated with the Proposed Development such that they would be deemed significant for hydrology, hydrogeology, geology or peat.

Appraisal of Differences from Conclusions of the EIA Report

7.20 The above appraisal of the indicative grid connection does not change the conclusions reported in the Bodinglee Wind Farm EIA Report with respect to geology, hydrology and peat.

7.21 it will be important for the detailed routeing and design of the grid connection to take into account the following design principles to effectively design out or minimise significant geology, hydrology or peat effects:

- avoid areas of deep peat as far as practicable;
- ensure appropriate buffer distances are maintained between watercourses and infrastructure; and
- minimise number of watercourse crossings required (i.e. only crossing the Birshaw Burn at one location as far as practicable).

Chapter 8

Traffic and Transport

Existing Conditions

8.1 The wider area around the indicative grid connection corridor is serviced by a number of major and minor roads, which provide access and transport routes to settlements, individual residences and the wider strategic road network. As noted in Chapter 4 above, the Core Path (CL/3464/1) located along the B7078 road which is also part of National Cycle Network (NCN) Route 74 and is located approximately 150 m beyond the south of the southern point of the indicative grid connection corridor.

Appraisal of Potential Significant Effects from the Indicative Grid Connection Corridor

8.2 The construction of the grid connection would require temporary access at locations along the route. Due to the nature, design and rate of construction of the this type of grid connection, it is anticipated that vehicle movements at any location would be limited over the course of the construction period which will not lead to any noticeable increase in traffic volumes on the surrounding road network, albeit there will be a slight change in traffic composition as HGVs will be required to deliver materials for the UGC.

8.3 It is likely that a Construction Traffic Management Plan (CTMP) will be implemented for the grid connection to manage traffic movements on the surrounding public road network, and this would be coordinated with the construction of the Proposed Development should construction works overlap. It is noted in the Bodinglee Wind Farm EIA Report Access, Traffic and Transport chapter that there are recreational routes located along the B7078, some of which are comprised of segregated paths, located within the Study Area for the Bodinglee Wind Farm EIA Report. An Access Management Plan (AMP) would be required where the indicative grid connection intersects with the cycling network recreational route as shown on **Figure 1a**.

8.4 During operation there would be infrequent visits by maintenance teams and therefore significant effects as a result are unlikely to arise.

8.5 Given the small number of anticipated vehicle movements associated with its construction and operation, it is considered unlikely that the grid connection would give rise to significant construction or operational traffic and transport effects.

Appraisal of Potential Significant In-Combination Effects

8.6 It is considered unlikely that the grid connection would give rise to significant construction or operational effects on traffic and transport.

8.7 The Bodinglee Wind Farm EIA Report concluded that there would be no significant residual effects on traffic and transport. Mitigation along the B7078 included (but was not limited to) adoption of a voluntary speed limit of 15 miles per hour for all construction vehicles along the road.

8.8 The in-combination effects of the Combined Project would not give rise to any new significant effects, or increase the level of effects associated with the Proposed Development such that they would be deemed significant for traffic and transport.

Appraisal of Differences from Conclusions of the EIA Report

8.9 The above appraisal of the indicative grid connection does not change the conclusions reported in the Bodinglee Wind Farm EIA Report with respect to traffic and transport.

Chapter 9

Noise and Vibration

Existing Conditions

9.1 The indicative grid connection corridor passes primarily through environments that are rural in nature, comprising mostly open peatland and grassland habitats with busy the M74 motorway and west coast train line intercepting the corridor. The existing baseline noise environment of the indicative grid connection corridor is likely to be typical of a rural environment, characterised by 'natural' sources such as wind and disturbed vegetation, with some contribution from anthropogenic sound such as forestry activity, road, rail and existing operational wind turbines.

Appraisal of Potential Significant Effects from the Indicative Grid Connection Corridor

9.2 It is typically accepted that grid connection construction works are of short duration at any one location. As construction progresses, noise generated will diminish quickly, particularly for UGCs, moving the activity away from any noise sensitive receptors such that significant effects are not likely. Given the limited traffic expected to be generated for the construction and operation of the indicative grid connection corridor, it is not considered that construction traffic noise will be perceptible.

9.3 If required, mitigation measures would be implemented in relation to any necessary Horizontal Directional Drilling (HDD) required to construct sections of the UGC. This may include measures relating to any vibration generation.

9.4 Good practice measures for controlling/minimising noise during construction may include the following:

- restricted hours of construction to avoid sensitive periods;
- the use of equipment with appropriate noise control measures (e.g. silencers, mufflers and acoustic hoods); and
- additional good practice measures as set out in BS 5228-1/2:2009+A1:2014 (BS 5228)⁷.

9.5 Overall, any noise effects during construction would be short term and temporary and with best practice mitigation in place significant effects are unlikely to arise.

9.6 Operating UGCs do not generate any noise, therefore, it is negligible that significant operational noise effects would occur.

Appraisal of Potential Significant In-Combination Effects

9.7 It is considered unlikely that the grid connection would give rise to significant construction or operational effects on noise.

9.8 The Bodinglee Wind Farm EIA Report concluded that there would be no significant effects on noise.

⁷ UK Government, 2009. British Standards Institution 5228. *Code of practice for noise and vibration control on construction and open sites* (BS 5228), BSI, 2009, Amended 2014.

9.9 The in-combination effects of the Combined Project would not give rise to any new significant effects, or increase the level of effects associated with the Proposed Development such that they would be deemed significant for noise.

Appraisal of Differences from Conclusions of the EIA Report

9.10 The above appraisal of the indicative grid connection does not change the conclusions reported in the Bodinglee Wind Farm EIA Report with respect to noise and vibration.

Chapter 10

Cumulative Effects

10.1 Commentary on the cumulative effects associated with the indicative grid connection corridor are noted below. It is assumed that all existing operational or under construction developments form part of the existing baseline conditions against which the grid connection would be assessed.

10.2 The Applicant considers it is appropriate to consider whether the Proposed Development and the indicative grid connection, together with other developments (including their grid connections) could give rise to significant cumulative effects on the environment. The following points should be noted:

- In some cases, the grid connection for another wind farm development may be at a preliminary stage and therefore there may be no (or limited) knowledge and understanding as to the nature and location of such works. The carrying out of a cumulative assessment in these circumstances would be at odds with well-established EIA practice, which scopes out cumulative developments where there is a high degree of uncertainty as to their characteristics and in turn their potential to cause likely significant effects. This applies to most (but not necessarily all) development that is not yet the subject of a planning application or consented (noting that operational schemes and those under construction form part of the existing baseline as noted above).
- Where there is reasonable knowledge as to the nature and location of other grid connection works, and in particular works that are either the subject of an application or consented, it will need to be considered (by virtue of the nature, scale and location of those works) whether there is any prospect of likely significant effects arising cumulatively with the Proposed Development or its indicative grid connection corridor.

10.3 As such, a cumulative assessment would only consider projects within 3 km:

- Redshaw 400 kV Substation (Consented);
- ZV Route 400 kV OHL Diversion (Consented);
- Red Moss Battery Energy Storage Scheme (Consented);
- Redshaw Battery Energy Storage System (Consented); and
- M74 West Renewable Energy Park (Application Submitted).

10.4 As noted above, no additional significant effects would be likely to arise as a result of the Combined Project than have already been reported within the EIA Report. Therefore, no additional cumulative effects when considering the indicative grid connection corridor are anticipated. In a scenario where the aforementioned developments are present, the grid connection would form a very small feature and contribute to very limited additional effects in this context.

Chapter 11

Summary

11.1 This appraisal seeks to provide an overview of the indicative grid connection type, an indicative corridor and the likelihood for it to give rise to any significant environmental effects, alone or in-combination with the Proposed Development. The assessment is restricted to an early and high-level appraisal and baseline data limitations are recognised.

11.2 However, based on the information available at this preliminary stage, it is not considered that the construction and operation of the indicative grid connection will result in significant short-term (during construction) or long-term (during operation) effects if the final grid connection route follows careful routeing and design, as well as the implementation of standard good practice and mitigation measures.

Figures

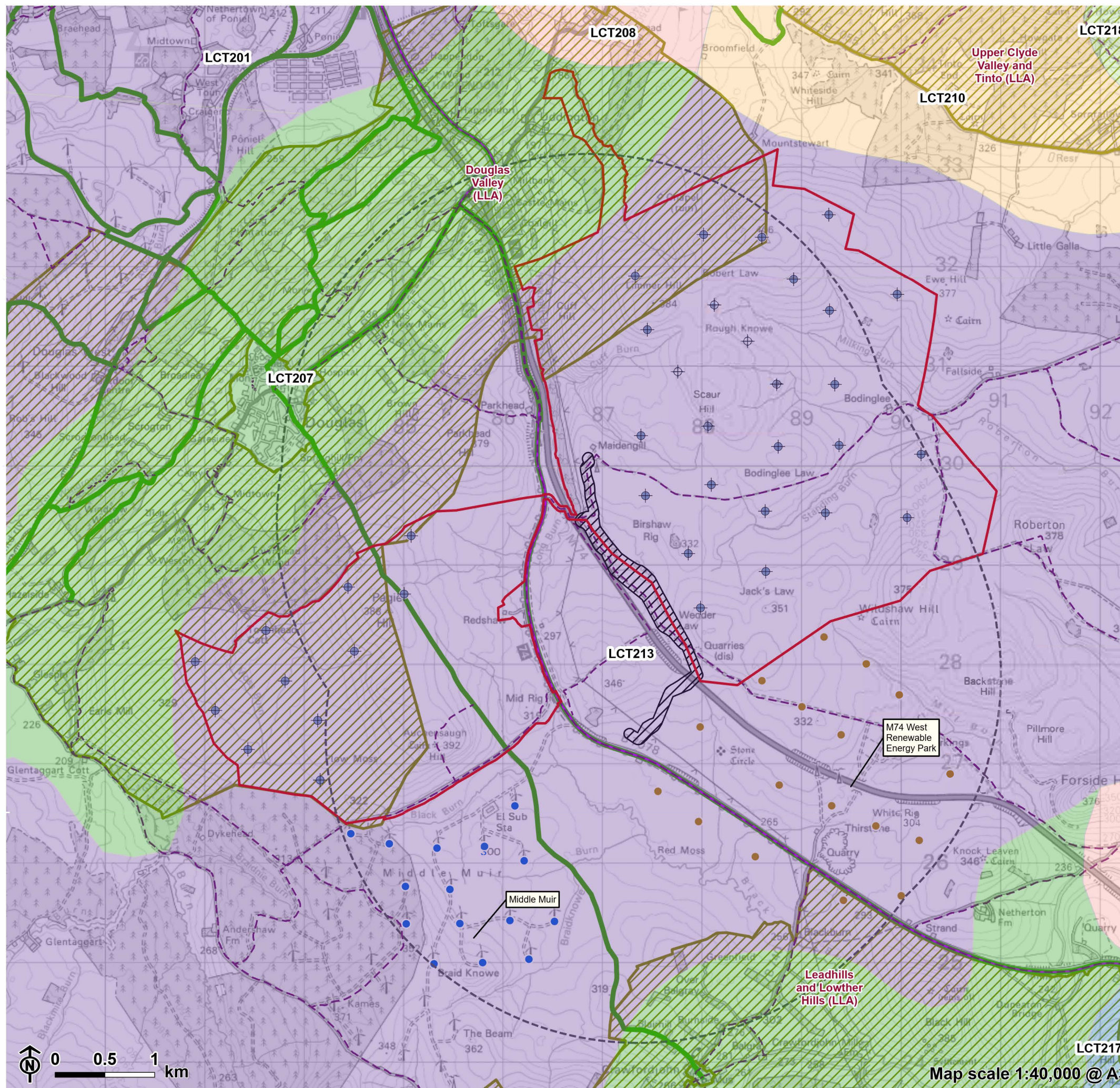


Figure 1a: Landscape Appraisal Constraints

- Bodinglee site boundary
- + Bodinglee turbine
- Indicative grid connection corridor (underground cable)
- 3km study area
- Wind turbine within 3km (by status)**
 - Application Submitted
 - Operational
- Visual Receptors**
 - Cycling network Scotland (Local authorities)
 - National Cycle Network route
 - Core path
 - Local Landscape Area (LLA) South Lanarkshire
- NatureScot Landscape Character Assessment**
 - 201: Plateau Farmland - Glasgow & Clyde Valley
 - 207: Upland River Valley - Glasgow & Clyde Valley
 - 208: Broad Valley Upland
 - 210: Undulating Farmland and Hills
 - 213: Plateau Moorlands - Glasgow & Clyde Valley
 - 217: Southern Uplands - Glasgow & Clyde Valley
 - 218: Rounded Landmark Hills

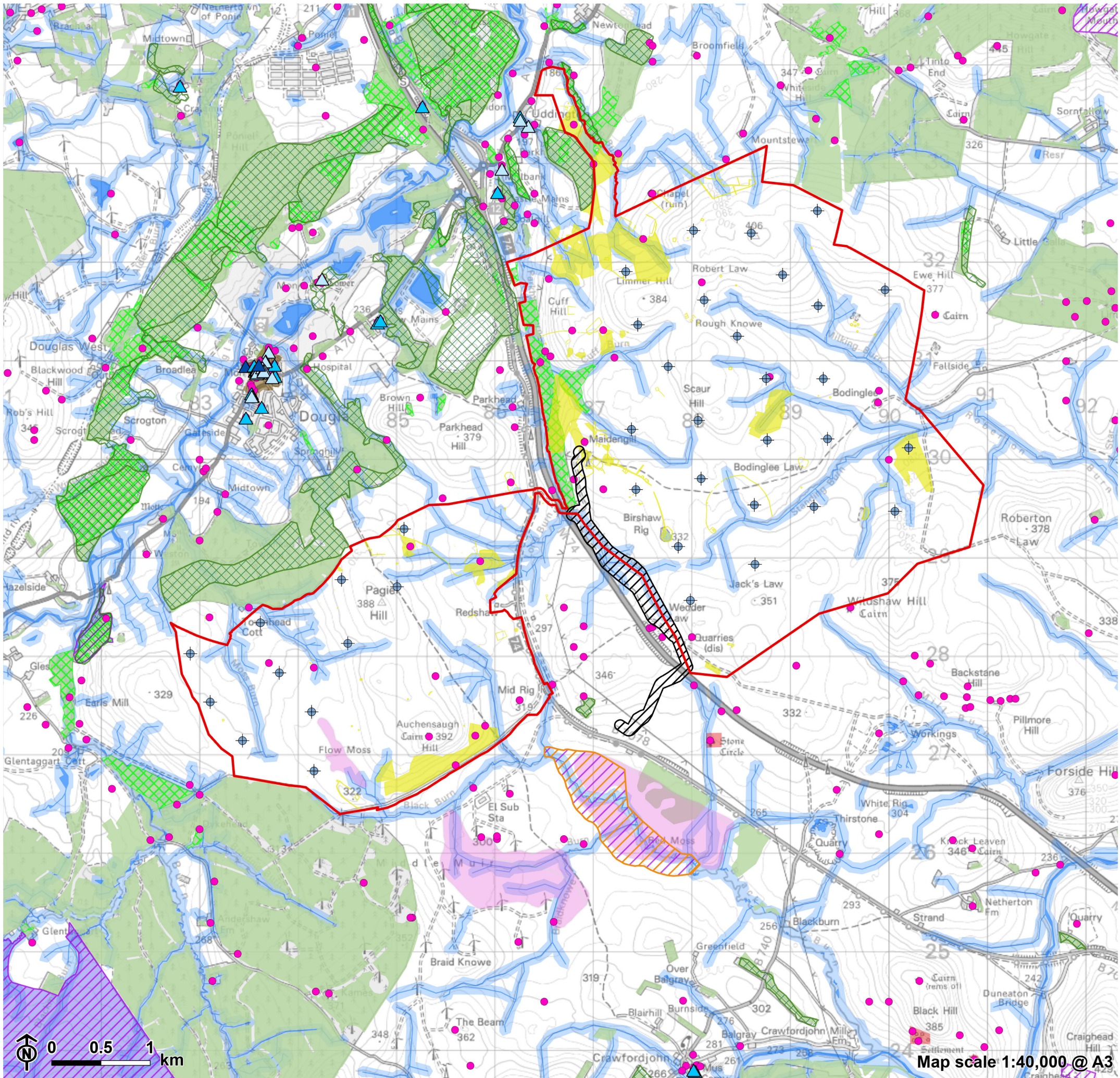
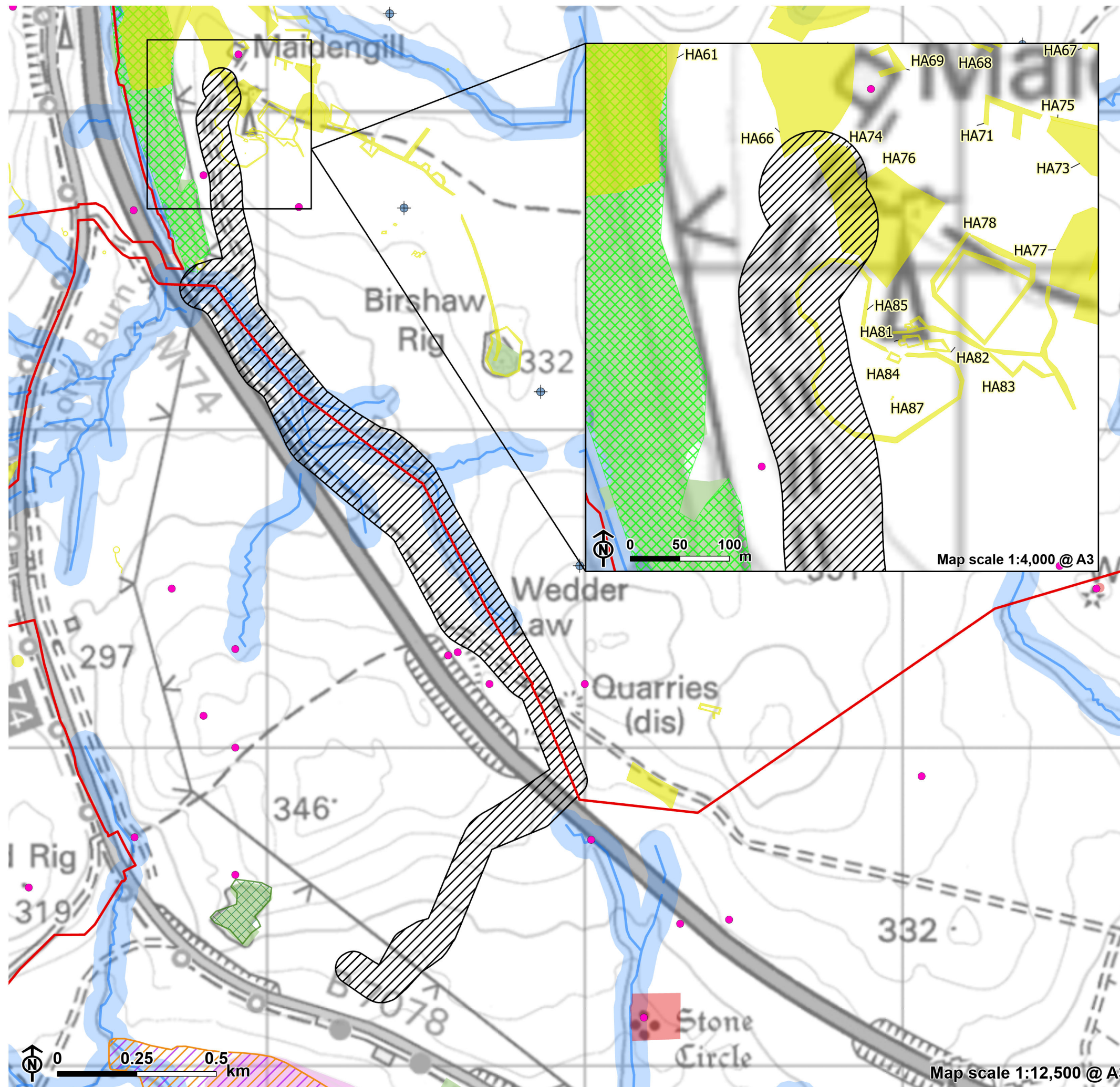


Figure 1b: Appraisal Constraints

- Bodinglee site boundary
- Bodinglee turbine
- Indicative grid connection corridor (underground cable)
- Cultural Heritage**
 - Category A listed building
 - Category B listed building
 - Category C listed building
 - National Record of the Historic Environment (NRHE)
 - Scheduled Monuments
 - Conservation area
 - 2023 ES LiDAR Assessment Data
- Natural Heritage**
 - Site of Special Scientific Interest
 - Special Area of Conservation
 - Special Protection Area
 - Ancient Woodland Inventory
- Forestry**
 - National Forest Inventory (Woodland NFI 2024)
 - Native Woodland Survey of Scotland
- Hydrology**
 - Surface water
 - Surface water 50 m buffer
- Carbon and Peatland (2016)**
 - Class 1

Figure 1c: Appraisal Constraints



- Bodinglee site boundary
- Bodinglee turbine
- Indicative grid connection corridor (underground cable)
- National Record of the Historic Environment (NRHE)
- Scheduled Monuments
- 2023 ES LiDAR Assessment Data
- Natural Heritage**
- Site of Special Scientific Interest
- Special Area of Conservation
- Ancient Woodland Inventory
- Forestry**
- National Forest Inventory (Woodland NFI 2024)
- Native Woodland Survey of Scotland
- Hydrology**
- Surface water
- Surface water 50 m buffer
- Carbon and Peatland (2016)**
- Class 1