Technical Appendix 3.4: Grid Connection Environmental Appraisal

Technical Appendix 3.4: Grid Connection Environmental Appraisal

3.4.1 Background

3.4.1.1 Beaufort Wind Limited ('the Applicant') is applying for consent pursuant to Section 36 of the Electricity Act 1989 Act for the repowering of the Novar 1 Wind Farm (the 'Proposed Development'). The Proposed Development includes the decommissioning of the existing Novar 1 Wind Farm and the construction of 9 turbines with a maximum blade tip height of up to 180 m. The installed capacity of the proposed repowered wind farm is greater than 50 MW. A detailed description is provided in Chapter 3: Site Description and Proposed Development (EIAR Volume 2).

3.4.1.2 The current expectation is that a new grid connection will be constructed in the future between the proposed new onsite substation and a Point of Connection (PoC) to connect the proposed repowered wind farm to the grid.

3.4.1.3 Planning the new grid connection and securing any necessary consent(s) is the responsibility of the network operator who in this location is Scottish and Southern Electricity Networks (SSEN). The Applicant engaged with SSEN in 2023 about the future grid connection and were provided with an indicative underground route between the onsite substation and a proposed new substation ('Alness 2') located close to the existing Alness 1 substation, as illustrated on Figure 3.4.1 (EIAR Volume 3a). Therefore, whilst an indicative route for the grid connection and an approximate location for a new substation has been provided by SSEN, this has not been confirmed and further technical studies and design optioneering work will be required.

3.4.2 Document Purpose

3.4.2.1 On 17 February 2026, the Inner House of the Court of Session delivered a decision in Raeshaw Farms Limited v Scottish Ministers [2026] CSIH 10. The Court quashed the planning permission for the Wull Muir Wind Farm on the basis that the Reporter appointed by the Scottish Ministers had, in granting consent, failed to lawfully consider whether the wind farm and its grid connection formed a single project for Environmental Impact Assessment (EIA) purposes and irrationally weighed the benefits of connected and operational renewable generation without considering the environmental impacts of the grid connection required to deliver those benefits.

3.4.2.2 The Court did not, however, hold that a single consent application is required for the whole project; rather, it confirmed that a grid connection may form part of the 'project' for EIA purposes whilst being capable of being the subject of a separate consent application.

3.4.2.3 The Applicant has provided the information currently available in relation to the anticipated grid connection to assist the competent authority i.e. the Energy Consents Unit, in considering whether the grid connection infrastructure should be regarded as part of the project for EIA purposes. The currently available information does not allow a detailed assessment of the grid connection at this stage. However, the following Environmental Appraisal (EA) is provided on a proportionate basis, having regard to the current level of certainty and without prejudice to any screening process or future consenting for the grid infrastructure. The EA has been undertaken on a precautionary basis and assumes the grid connection and proposed repowered wind farm are one project.

3.4.2.4 In accordance with Regulation 5 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, this EA has been prepared by competent experts from Ramboll's EIA coordination team. See Chapter 1 of the EIAR (Volume 2) for further details.

3.4.3 Assessment Methodology

3.4.3.1 This EA has focused on the likely environmental effects associated with the construction and operation of a future grid connection. This consists of the electrical cable between the proposed on-Site substation and a new PoC, that is assumed to be a new substation known as 'Alness 2'. As the new substation may support the wider grid network, and not be required solely to collect the electricity generated and distributed from the proposed repowered wind farm, and because the exact location is unknown, it has been excluded from the scope of this study.

3.4.3.2 Given the uncertainty about the alignment of the grid connection, a 500 m Indicative Grid Connection Corridor Study Area (IGCCSA) has been used which is based on the information previously provided by SSEN. The rational is that whilst the exact alignment of the grid connection is unknown, the information available to date, including the indicative route previously disclosed by SSEN, as well as known constraints, indicates that the grid connection would be located within the defined IGCCSA.

3.4.3.3 This study has focussed on identifying the sensitivity of the receiving environment through a combination of reviewing the previously collated baseline information available on the project webmap[1] and consulting supplementary desk-based sources. No site visits have been undertaken to support the preparation of this EA given there is no confirmed alignment for the grid connection.

3.4.3.4 The information gathered through the baseline review includes statutory and non-statutory designations and the presence of sensitive receptors such as residential properties and public rights of way.

3.4.3.5 The appraisal has considered the potential environmental impact of the grid connection works on the sensitivity of the receiving environment in the IGCCSA using the available baseline information and through the adoption of assumptions about the design of the infrastructure and the construction techniques that would be adopted to help to minimise potential adverse effects.

3.4.3.6 It is important to note that this appraisal is based on limited design information so professional judgement has been used to identify if any significant environmental effects are likely to be generated following the implementation of mitigation measures that are standard for this type of development. The identification of mitigation measures is based on previous experience of undertaking environmental assessments for transmission projects and supporting contractors with discharging pre-construction planning conditions.

3.4.3.7 No on-site environmental surveys (including protected species, habitats, ornithology, peat and hydrology) have been undertaken to inform this appraisal, and it has been assumed that these would be completed at a later date by SSEN to understand the key environmental constraints and sensitivities within the route corridor.

[1] The webmap is a Geographic Information System (GIS) tool that is used to store baseline environmental information about the Site and the immediate surrounding area. It is presented in different layers which can be turned on and off to better understand the potential environmental effects of the Proposed Development.

3.4.3.8 In the context of the limited design information available, a confidence rating of 'low' has been applied to all impact predictions.

3.4.4 Statutory Environmental Duty

3.4.4.1 Schedule 9 of the Electricity Act 1989 is one of the key statutory provisions that underpins environmental assessment and route/site selection for electricity infrastructure in the UK. It requires electricity licence holders such as SSEN to have regard to the desirability of preserving natural beauty, conserving flora, fauna and geological or physiographical features of special interest, and protecting sites, buildings and objects of architectural, historic or archaeological interest. Licence holders are also required to do what they reasonably can to mitigate any adverse effects of their proposals on these interests.

3.4.4.2 For grid infrastructure projects, project proponents such as SSEN are expected to:

- Consider environmental constraints from the outset;
- Avoid sensitive areas where reasonably practicable;
- Compare alternative solutions to meet the project objectives;
- Incorporate mitigation into project design; and
- Demonstrate how environmental effects have been reduced.

3.4.4.3 These requirements can be met through implementation of the structured and iterative process which allows the project proponent to increasingly reduce uncertainty, gather technical and environmental information needed to make informed decisions, and refine the design in a logical and transparent manner. As each stage is completed, the range of options becomes more focused, while still ensuring that reasonable alternatives are considered. In this way, the grid connection can move from a broad strategic concept to a feasible final alignment.

3.4.5 Assumptions

3.4.5.1 Based on the information provided by SSEN and Ramboll's experience of undertaking route optioneering studies for grid infrastructure projects, the following assumptions have been used in the study:

- The grid connection would be a 33 kV underground cable;
- The grid connection would be installed in an open cut trench but in any environmentally sensitive areas, Horizontal Directional Drilling (HDD) may be used to avoid or minimise impacts;
- Trenches would typically be 1 to 3 m wide, with a working corridor of approximately 5 to 10 m. This would be minimised in sensitive locations;
- The cable route would follow existing roads and utility corridors where practicable;
- Soils would be carefully handled during excavation works and when the land is being reinstated;
- Tree loss would be minimised;
- Compounds would be located outside of environmentally sensitive areas where practicable;
- Above ground infrastructure would be screened where practicable; and
- Any future consent for the grid connection would be for a working corridor rather than an exact alignment so there would be some flexibility during the construction phase which would help to avoid sensitive features.

3.4.5.2 In addition, a Construction Environmental Management Plan (CEMP) would be prepared which would include a comprehensive list of standard control measures that would be applied during the construction process to minimise environmental effects. A summary of the likely mitigation measures that would be included in the CEMP is provided below in Table 3.4.1.

Table 3.4.1: Example Environmental Control Measures

Environmental Topic	Mitigation Measures	Monitoring/Responsibility
Environmental Management	Appointment of an Environmental Clerk of Works (EnvCoW). Environmental inductions and toolbox talks for all site personnel. Regular environmental inspections and compliance audits.	Principal Contractor and EnvCoW
Soils and Agricultural Land	Topsoil and subsoil stripped, stored and reinstated separately. Soil handling minimised during wet weather. Use of low ground pressure plant where practicable. Disturbed land restored to pre-construction condition following installation of the cable.	Principal Contractor under EnvCoW supervision
Peat and Peat Stability	Implementation of a Peat Management Plan (PMP) where peat is present. Excavated peat stored separately and reused during reinstatement. Excavations designed to minimise peat disturbance. Peat stability monitored and contingency measures implemented where required.	Principal Contractor, geotechnical specialist and EnvCoW
Surface Water and Drainage	Drainage measures implemented to prevent sediment-laden runoff entering watercourses. Installation of silt fences, check dams, settlement areas and appropriate drainage controls. Exposed ground kept to a minimum and reinstated as soon as practicable.	Principal Contractor and EnvCoW
Watercourse Crossings	Watercourse crossings designed to minimise environmental effects. Trenchless crossing techniques e.g. HDD utilised where practicable in sensitive locations. Open-cut crossings undertaken in accordance with approved method statements and environmental permits.	Principal Contractor and EnvCoW
Pollution Prevention	Fuel, oils and chemicals stored within appropriately bunded facilities. Refuelling undertaken in designated areas. Spill kits available at all active work locations. Pollution incident response procedures implemented throughout construction.	Principal Contractor and Site Environmental Manager
Groundwater and Private Water Supplies	Sensitive groundwater receptors and private water supplies identified prior to construction. Appropriate stand-off distances maintained and monitoring undertaken where necessary. Contingency measures implemented in	Principal Contractor and hydrogeological specialist

Table 3.4.1: Example Environmental Control Measures		
Environmental Topic	Mitigation Measures	Monitoring/Responsibility
	the event of interruption or contamination.	
Ecology and Nature Conservation	Working areas microsited where practicable to avoid sensitive habitats. Temporary protective fencing installed where required. Vegetation clearance limited to the minimum necessary. Habitat reinstatement undertaken following completion of construction works.	Principal Contractor and Ecological Clerk of Works (ECoW)
Protected Species	Pre-construction surveys undertaken where required. Species protection plans implemented for protected fauna. Exclusion zones maintained around active breeding or resting sites. Works supervised by a suitably qualified ecologist where necessary.	ECoW and specialist ecologists
Air Quality and Dust	Dust generation controlled through damping down, covering of stockpiles, wheel cleaning facilities (where required) and appropriate management of vehicle speeds on unsealed surfaces.	Principal Contractor
Noise and Vibration	Construction activities restricted to approved working hours. Plant and equipment maintained in accordance with manufacturer specifications. Where necessary, temporary acoustic screening and other best practicable means employed.	Principal Contractor
Traffic and Access	Construction Traffic Management Plan implemented. Traffic routed along agreed haul roads and access routes. Vehicle movements managed to minimise disruption to local communities and road users.	Principal Contractor
Waste Management	Site Waste Management Plan (SWMP) implemented in accordance with the waste hierarchy. Opportunities for material reuse maximised. Waste segregated, stored and disposed of at appropriately licensed facilities.	Principal Contractor
Archaeology and Cultural Heritage	Sensitive heritage assets protected through micrositing and construction controls. Archaeological watching briefs employed where required. Unexpected discoveries managed through a formal stop-work procedure.	Principal Contractor and Archaeological Clerk of Works
Trees and Hedgerows	Tree root protection areas established where necessary. Trenchless installation techniques utilised at sensitive locations where practicable.	Principal Contractor and ECoW

Table 3.4.1: Example Environmental Control Measures

Environmental Topic	Mitigation Measures	Monitoring/Responsibility
	Hedgerows and other vegetation reinstated following construction.	
Site Restoration and Reinstatement	Temporary construction compounds, accesses and working areas restored following completion of works. Land drainage systems reinstated. Agricultural land and habitats returned as close as practicable to pre-construction condition.	Principal Contractor and landowner liaison officer
Environmental Incident Response	An Environmental Incident Response Plan implemented. All environmental incidents recorded, investigated and reported. Corrective actions implemented promptly to prevent recurrence.	Principal Contractor and EnvCoW

3.4.6 Environmental Appraisal

3.4.6.1 The EA is presented below in Table 3.4.2 and is split by each environmental topic with information provided on:

- Key designations/environmental features, as shown on Figures 3.4.2 – 3.4.6 (see below);
- Potential impacts on those features from the construction and operation of a future grid connection;
- A summary of the environmental control measures that it is expected would be implemented through the CEMP; and
- A judgement on whether residual effects are likely to be significant.

3.4.6.2 It is anticipated that industry-standard mitigation would be applied to the design, routeing and construction of the grid connection, including avoidance of sensitive receptors where practicable, adoption of good practice construction methods, and implementation of environmental management controls. The detailed mitigation package would be developed through the future design and consenting process for the grid infrastructure.

Table 3.4.2: Environmental Appraisal of Grid Connection

Topic	Identified Feature	Baseline	Potential Impact	Environmental Controls	Potential for Significant Residual Effect
Ornithology	Novar Special Protection Area (SPA)	Approximately 69 hectares (ha) of Novar SPA is located within the IGCCSA. There is potential for breeding capercaillie, a qualifying species of the Novar SPA.	Breeding species of Novar SPA could be directly impacted through the destruction or disturbance of active lek sites by enabling and construction works of the grid connection, such as through vegetation clearance or management.	It is expected that all works would be undertaken outside the breeding bird and lekking season, under supervision of an ECoW. A disturbance buffer of 500-1,000 m is expected to be maintained around active capercaillie leks during all phases of Proposed Development. These species-specific disturbance buffers would be detailed within the CEMP, specifically within Bird Species Protection Plans (SPP) and enforced by the ECoW.	No
Ecology	Alness River Valley SSSI	Approximately 11.5 ha of the Alness River Valley SSSI lies within the IGCCSA, at the edge of the 500 m buffer. The SSSI is characterised by upland mixed ash woodland. The River Alness provides habitat for salmon and sea trout, while other protected or notable species recorded in the wider area include otter, pine marten and red squirrel.	Potential impacts on woodland and protected species during the enabling and construction works.	As the SSSI is located on the edge of the IGCCSA it is unlikely to be directly affected by the Proposed Development. Notwithstanding this, it is expected that existing roads would be followed and woodland would be avoided where practicable. Further ecological surveys would be undertaken to identify areas of sensitivity and impacting on the route optioneering. It is expected that standard best practice measures outlined in CEMP would be enforced by the ECoW during all phases of the Proposed Development.	No
	Ancient Woodland	There are two areas of ancient woodland in the IGCCSA: 2b - long-established of plantation origin and 2a - ancient of semi-natural origin.	Ancient woodland could be directly affected by construction activities, including vegetation clearance and tree felling. Construction activities could also indirectly impact on trees by increasing the risk of windthrow and adversely affecting woodland soils.	It is expected that the section of cable route within 2b ancient woodland would follow the existing road to minimise effects on ancient/veteran trees. In areas of ancient woodland, trenchless construction techniques, such as Horizontal Directional Drilling (HDD), would be considered. It is expected that compounds would be located outside ancient woodland blocks. A CEMP would be implemented to apply good working practices on Site, including protective fencing, exclusion zones, ground protection mats, pollution prevention measures and dust suppression.	No
Land Use and Agriculture	Land Class	Some of the IGCCSA is located on Class 3.1 land, which can consistently produce high yields of a narrow range of crops and/or moderate yields of a wider range. Land quality decreases further north.	The amount of land that would be impacted would be minimal and effects would not be significant.	It is expected that soils would be stored appropriately during construction. Measures would also be implemented to avoid soil compaction. Agricultural land would be reinstated as soon as practicable following construction of the grid connection.	No
Landscape	Landscape Character Types (LCTs)	The IGCCSA contains three LCTs: LCT 341 Forest Edge Farming, LCT 330 Rounded Hills and Moorland Slopes - Ross & Cromarty and LCT 345 Farmed and Forested Slopes – Ross & Cromarty.	The three LCTs would experience temporary disturbance during construction of the underground cable. However, given the temporary nature and limited footprint of the grid connection works, significant effects are not anticipated.	Not applicable.	No
Visual impact	Visual receptors	Visual receptors in close proximity to the IGCCSA include recreational routes, tourist attractions, settlements and key transport routes	There could be some limited visual impact during the construction process, but this would be temporary and reversible. As the grid connection would be underground there would be no visual impacts once it is operational.	Not applicable	No
Noise	Noise Sensitive Receptors (NSRs) Residential properties not assessed in the EIAR.	Three NSRs are close to the IGCCSA, the closest being approximately 90 m away. Nine residential properties are located within the IGCCSA but were not assessed in Chapter 9: Noise (EIAR Volume 2). Three properties at Balnacraig are located within the IGCCSA.	The construction of the grid connection could result in temporary, short-term disturbance to residential properties close to the grid connection alignment. Operational noise generated from a 33 kV grid connection would not be perceptible given it would be an underground cable.	It is expected that works would be undertaken during standard working hours, using low-noise plant and machinery where practicable. Construction compounds would be located away from NSRs, with temporary acoustic screening provided where necessary. No significant residual effects are anticipated.	No

Table 3.4.2: Environmental Appraisal of Grid Connection

Topic	Identified Feature	Baseline	Potential Impact	Environmental Controls	Potential for Significant Residual Effect
Hydrology	Waterbodies and Watercourses	The Alness River crosses the eastern part of the IGCCSA, while Allt na Seasgaich crosses the western part. A total of 74 watercourses are located within the IGCCSA.	Potential impacts on waterbodies and watercourses include increased sedimentation and erosion, chemical pollution, bank disturbance and changes to hydrology.	Where the grid connection crosses watercourses, it is expected that crossings would be designed and installed in accordance with Scottish Environmental Protection Agency (SEPA) best practice guidance. It is expected that HDD would be used where necessary to avoid effects on watercourses and waterbodies. Preparation of a CEMP to include best working practice to be employed at the Site, particularly with respect to works on or near watercourses and measures for the control of pollution (including sediment laden water) at the Site.	No
	Drinking Water Protected Areas (DWPA)	River Alness crosses the eastern part of the IGCCSA. The majority of it is located within the catchment.	Potential impacts on the DWPA include increased sediment and erosion, pollution from fuels and chemicals, changes to natural water flows.	It is expected that the CEMP would include standard environmental control measures that would minimise potential impacts e.g. silt fencing, limiting earthworks during heavy rainfall, bunded fuel storage, creating buffers around water courses, restricted working zones.	No
	Private Water Supply (PWS)	Cromarty Firth PWS is located within the IGCCSA.	Potential impacts on the PWS include reduction in water quality, reduced water quantity by intercepting groundwater flows during excavation, groundwater contamination and damage to infrastructure.	Standard control measures to minimise effects on PWS are expected to include: Establishing protection zones around springs and boreholes; Maintaining buffer distances between development and water sources; Careful management of excavation and dewatering activities; and Pollution prevention plans (PPP) to be implemented during construction.	No
Geology and Soils	Peat	The IGCCSA is predominantly underlain by mineral soils. Peat is present in the eastern part of the IGCCSA, mainly comprising Class 5 peat, with small pockets of Classes 1, 2, 3 and 4.	Potential impacts on peat include excavation and associated carbon loss, changes to drainage and hydrology, habitat fragmentation, erosion and instability.	It is expected that peat surveys would be undertaken to understand the most sensitive areas which should be avoided. It is assumed that the grid connection would use existing tracks and disturbed corridors where practicable to minimise effects on peat, with the grid connection trench width kept to a minimum. Excavated peat would be carefully stored, with vegetation reinstated as soon as practicable after installation. Where peat cannot be avoided, it is anticipated that standard best practice measures would be implemented, including the preparation of a PMP and Peat Landslide Hazard Risk Assessment (PLHRA) if required.	No
Cultural Heritage	Ardross Castle Garden and Designated Landscape (GDL)	A small part of the GDL, approximately 4 ha, is located within the central part of the IGCCSA.	Any impacts to the GDL would be minimal and would only occur during the construction phase. Operational impacts are not anticipated as the cable route would avoid the interaction with GDL.	It is expected that boundary planting could help the new substation to blend into the landscape and minimise the visual impact of the GDL. However, requirements would be confirmed once the exact location has been selected.	No
	Listed Buildings	There are two listed buildings located within the IGCCSA: Category B: Dal-Neigh Bridge over River Averon or Alness, River on A836. Category C: Moultavie House.	Temporary and reversible adverse setting effects may occur during the grid connection construction due to the use of plant and machinery.	To minimise potential effects on listed buildings, it is assumed that construction compounds would not be located close to those assets.	No
	Scheduled Monuments	There are two scheduled monuments within the IGCCSA: Moultavie,cairn 450m N of – located in woodland and	Potential direct disturbance to the Scheduled Monuments during construction of the grid connection due to the use of plant and machinery.	To minimise potential effects on listed buildings, it is assumed that construction compounds would not be located close to Scheduled Monuments. It is expected that exclusion zones would be maintained throughout the construction phase so the grid connection would avoid the Scheduled Monuments.	No

Table 3.4.2: Environmental Appraisal of Grid Connection

Topic	Identified Feature	Baseline	Potential Impact	Environmental Controls	Potential for Significant Residual Effect
		Moultavie, two cairns 850m NW of – located in woodland.			
Traffic and Access	Roads and Public Rights of Way (PRoW)	Several roads and core paths are located within the IGCCSA: The B9176 provides access to the proposed substation and is accessed directly from the A9. Boath Road is a narrow, single-track road serving residential properties. Part of it lies within the IGCCSA, with some sections following the cable route. A car park off Boath Road provides the starting point for the Jubilee Path to the Fyrish Monument. Several minor roads are located within the area. One core path, the Golfcourse Circular Path, crosses the eastern edge of the IGCCSA.	Construction of the grid connection could result in temporary disturbance to a short section of Boath Road, including potential temporary road closures, increased traffic on lightly trafficked roads, longer journey times and reduced road capacity. Any disruption to PRoW is likely to be temporary and would cease once construction is complete.	It is expected that a Construction Traffic Management Plan (CTMP) would be implemented to manage interactions between construction traffic, construction activities and users of core paths, other paths, cycle routes and public roads. This would include the following measures: Traffic routing; Timing restrictions; Traffic management arrangements; Road protection measures; and Measures to protect active travel users.	No
Socio-Economics and Tourism	Local Economy and Tourism Economy	Local job market, local services and businesses and touristic destination including nearby heritage assets: Fyrish Monument and Ardross Castle.	Construction of grid connection would create temporary employment and support the local economy through indirect and induced spending on local services. Job creation during the operational phase would be related to the ongoing operations and maintenance of the grid connection but this is expected to be minimal. Construction of the grid connection could result in a potential short-term reduction in visitor numbers due to disruption.	To minimise impacts on tourism, it is anticipated that the following measures would be implemented during construction: Undertake work at less popular times of year e.g. autumn/winter, where practicable; and Minimise impact where practicable on any sensitive tourist attractions e.g. footpath to Fyrish Monument, Ardross Castle.	No
Air quality	Air Quality Management Areas (AQMA)	No AQMA in vicinity of IGCCSA.	Construction activities could result in short-term temporary increase in dust and emissions from plant, machinery and construction vehicles.	It is expected that standard CEMP measures would be implemented to minimise air quality effects, including covering loads where required, wheel cleaning and avoiding unnecessary vehicle idling.	No
Materials and Waste	Waste Facilities	Availability and capacity of waste management facilities.	Construction of the grid connection would generate waste materials requiring appropriate storage, handling, reuse, recycling or disposal.	It is anticipated that waste would be minimised and managed in accordance with the waste hierarchy, and that a SWMP would be provided. Materials would be reused where practicable, such as suitable excavated soils, before recycling or disposal is considered.	No
Aviation	No impact as the grid connection would be underground.				No

3.4.7 Potential In-combination Effects

3.4.7.1 Table 3.4.2 confirms that following the implementation of embedded mitigation it is unlikely that the grid connection in isolation would generate any significant residual environmental effects. As the proposed repowered wind farm and the grid connection are considered as one project for the purposes of the EIA, an in-combination assessment has been undertaken and is presented below in Table 3.4.3. This is based on those topics that are covered in Volume 2 of the EIAR.

Table 3.4.3: In-combination Assessment					
Topic	Wind Farm Residual Effects	Grid Connection Residual Effects	Potential in-combination effects	Significance of combined effect	Change from wind farm assessment conclusions
Landscape & visual amenity	Significant adverse	Not significant	Visibility of turbines and grid connection plant and machinery during operation of the wind farm and construction of the grid connection	Significant adverse	No
Cultural heritage	Significant adverse	Not significant	Combined effects on the setting of heritage assets from the operation of the wind farm and plant and machinery used during the construction of the grid connection	Significant adverse	No
Ecology	Not significant	Not significant	Habitat disturbance from both elements of the project e.g. loss of ancient woodland types 2a and 2b.	Not significant	No
Ornithology	Not significant	Not significant	Combined impact on the Novar SPA from habitat disturbance associated with both elements of the project. There is no collision risk from the grid connection.	Not significant	No
Hydrology & hydrogeology	Not significant	Not significant	Combined impact on watercourses and a DWPA but standard environmental control measures would ensure any effects are minimal. There are pockets of deep peat in the IGCSSA, but it is expected this would be avoided through micrositing of the grid connection.	Not significant	No
Noise	Not significant	Not significant	Potential combined effects on NSRs from the operation of the wind farm and the construction of the grid connection but this would be limited by the distance between the two elements and the intervening topography.	Not significant	No
Traffic and access	Not significant	Not significant	Increases in traffic on local roads if decommissioning/construction activity associated with the wind farm was undertaken simultaneously with the construction of the grid connection. Both elements would be controlled through a CTMP.	Not significant	No
Aviation	Not significant	Not significant	As the grid connection is expected to be underground there would be no combined effects.	Not significant	No

3.4.7.2 Table 3.4.3 identifies that the proposed repowered wind farm is the dominant source of effect. As the grid connection in isolation is not expected to generate any significant residual effects, the potential for in-combination effects is limited and the residual effect conclusions in Volume 2 of the EIAR are unchanged when considering both elements of the project together.

3.4.8 Conclusion

3.4.8.1 This EA has considered the potential environmental effects of a future grid connection project between the proposed Novar 1 repowered wind farm and a PoC close to the existing Alness 1 substation. As the exact location of the infrastructure is unknown, a 500 m study area has been used, and a comprehensive search of desktop sources has been undertaken to identify the environmental sensitivity of the receiving environment in this area. Drawing on previous information provided by SSEN and Ramboll's experience of working on similar projects, a high-level appraisal has been undertaken of the likely effects of the future grid connection, which has taken account of standard environmental control measures. It can be concluded that it is unlikely that any significant residual environmental effects would be generated during the construction and operation of a future grid connection project in isolation.

3.4.8.2 The combined effects of the grid connection and the proposed repowered wind farm have also been assessed and this has concluded that the wind farm is the dominant source of effect and the grid connection makes only a marginal contribution. The potential for a significant in-combination effect to be generated by both elements of the project is therefore limited. No significant effects have been identified as part of the in-combination assessment that were not identified as part of the assessment of the proposed repowered wind farm and therefore, the conclusions in Volume 2 of the EIAR remain unchanged.

Figures

Legend

- Application Boundary
- Turbine Locations
- Track Centreline
- Hardstandings
- Substation
- Construction Compound
- Borrow Pit Search Area

Electricity Connection Infrastructure

- Existing Alness 1 Substation
- Indicative Alness 2 Substation
- Indicative SSE Route
- Indicative Grid Connection Corridor Study Area (IGCCSA)

0 1 2 Kilometres

Figure Title
Grid Connection Infrastructure Study Area

Project Name
Novar 1 Wind Farm Repowering

Project No./Filery ID
1620016706 / REH2023N04156

Date	Figure No.	Revision
September 2026	3.4.1	1.0

Prepared By	Scale
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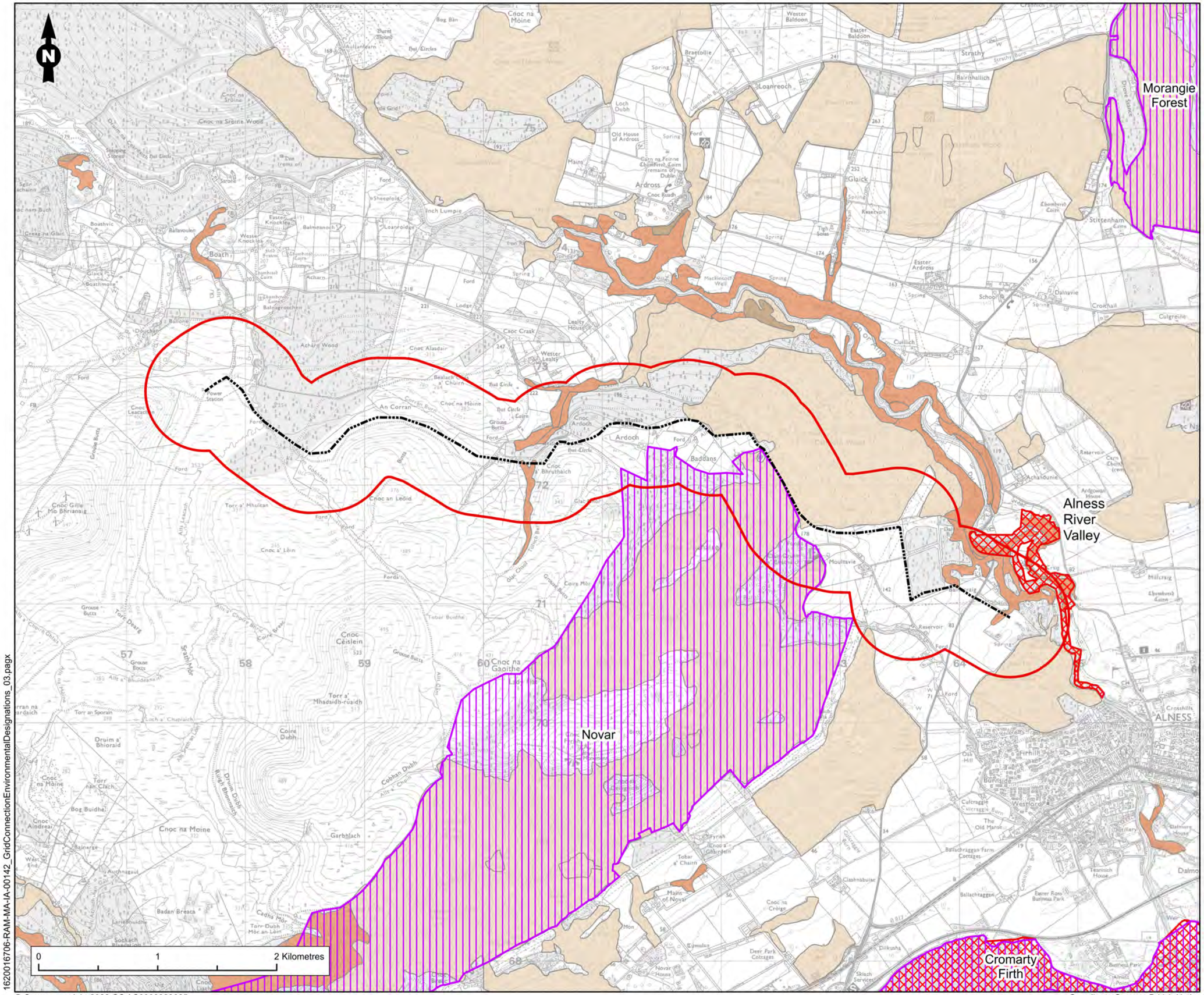
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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936.



Legend

- Indicative Grid Connection Corridor Study Area (IGCCSA)
- Indicative SSE Route

Environmental Designations

- Special Protection Areas
- Sites of Special Scientific Interest (SSSI)
- Ancient (of semi-natural origin)
- Long-Established (of plantation origin)
- Other (on Roy map)

Figure Title
Grid Connection: Environmental Designations

Project Name
Novar 1 Wind Farm Repowering

Project No./Filery ID
1620016706 / REH2023N04156

Date	Figure No.	Revision
September 2026	3.4.2	1.0

Prepared By	Scale
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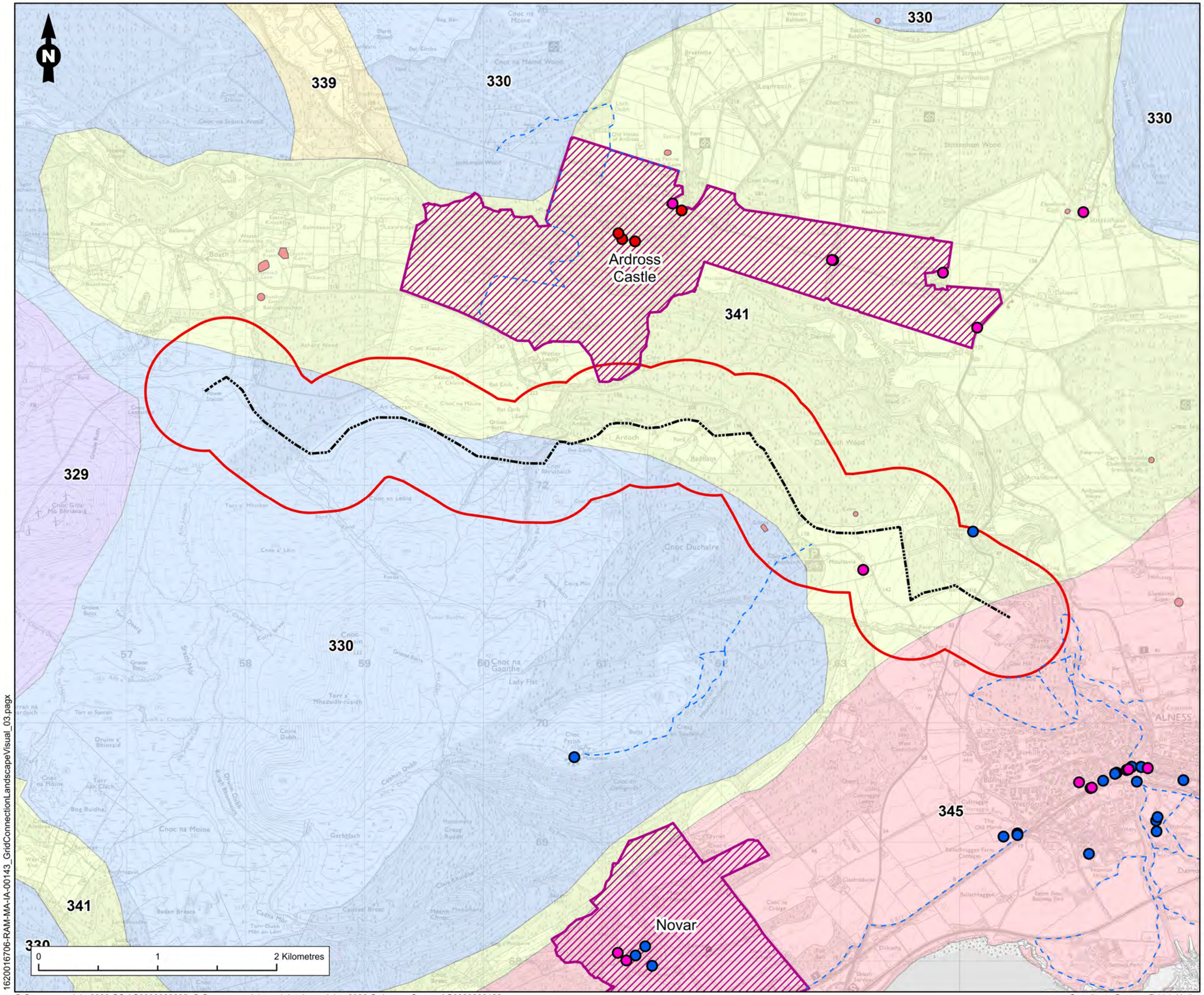
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Coordinate System: British National Grid. Projection: Transverse Mercator. Datum: OSGB 1936.



Legend

- Indicative Grid Connection Corridor Study Area (IGCCSA)
- Indicative SSE Route

Landscape Character Assessment

- 329,Rounded Mountain Massif
- 330,Rounded Hills and Moorland Slopes - Ross & Cromarty
- 339,Inland Strath
- 341,Forest Edge Farming
- 345,Farmed and Forested Slopes - Ross & Cromarty

Visual Receptors

Listed Buildings

- A
- B
- C
- Core Path
- Gardens and Designed Landscapes
- Scheduled Monument

Figure Title
Grid Connection: Landscape and Visual

Project Name
Novar 1 Wind Farm Repowering

Project No./Filery ID
1620016706 / REH2023N04156

Date	Figure No.	Revision
September 2026	3.4.3	1.0

Prepared By	Scale
RS	1:30,000 @A3

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Legend

- Indicative Grid Connection Corridor Study Area (IGCCSA)
- Indicative SSE Route

Noise

- Residential Receptors
- Noise Sensitive Receptors

0 1 2 Kilometres

Figure Title
Grid Connection: Noise

Project Name
Novar 1 Wind Farm Repowering

Project No./Filery ID
1620016706 / REH2023N04156

Date	Figure No.	Revision
September 2026	3.4.4	1.0

Prepared By	Scale
RS	1:30,000 @A3

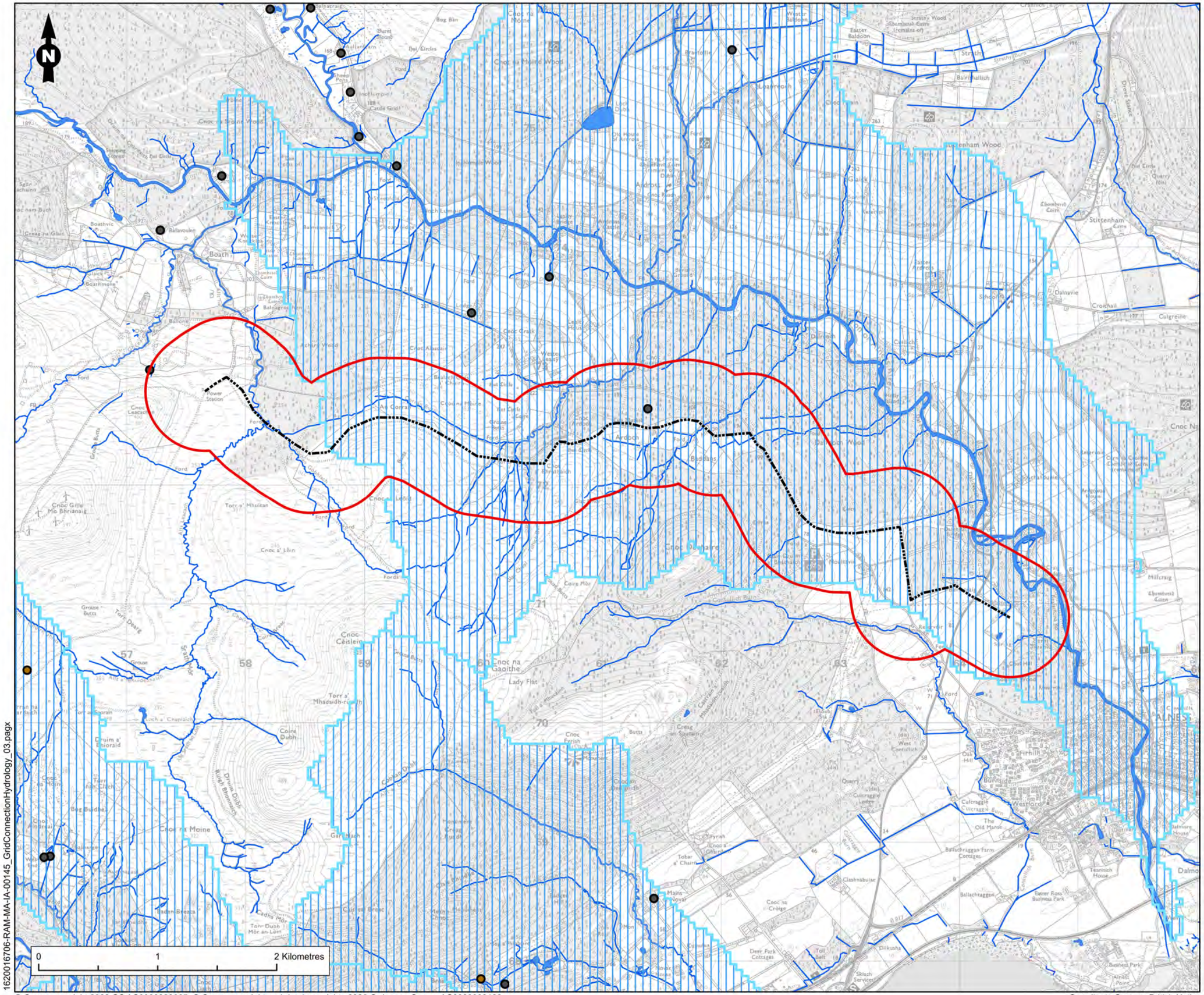
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Legend

- Indicative Grid Connection Corridor Study Area (IGCCSA)
- Indicative SSE Route

Hydrology

- Highland Council Private Water Supplies
- Novar Estate Private Water Supplies
- Drinking Water Protected Area (Catchments)
- Watercourse
- Waterbody

Figure Title
Grid Connection: Hydrology

Project Name
Novar 1 Wind Farm Repowering

Project No./Filery ID
1620016706 / REH2023N04156

Date	Figure No.	Revision
September 2026	3.4.5	1.0

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N

0 1 2 Kilometres

Legend

- Indicative Grid Connection Corridor Study Area (IGCCSA)
- Indicative SSE Route

Carbon and Peatland 2016

- Non-soil
- Mineral Soil
- Class 1
- Class 2
- Class 3
- Class 4
- Class 5

Figure Title
Grid Connection: Peat

Project Name
Novar 1 Wind Farm Repowering

Project No./Filery ID
1620016706 / REH2023N04156

Date	Figure No.	Revision
September 2026	3.4.6	1.0

Prepared By	Scale
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