



# West Torrisdale Wind Farm

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

November 2024



Energy for  
generations

# 1. Introduction

- 1.0.1 ESB Asset Development UK Limited ('the Applicant') has applied for consent to construct<sup>1</sup> and operate a generating station incorporating wind turbine generators, energy storage and associated infrastructure with generation capacity of greater than 50 megawatts (MW). The project is referred to as West Torrisdale Wind Farm ('the Proposed Development'). The Proposed Development will comprise up to 9 wind turbines with a tip height of up to 149.9 m with an output of up to 6 MW per wind turbine. The Proposed Development would also include a Battery Energy Storage System (BESS) of up to 20 MW of energy storage, and ancillary infrastructure. The Wind Turbine Array covers an area of approximately 221 ha, approximately 4 km southwest of Carradale, in Argyll and Bute, Scotland. The Application Boundary location is shown in **Figure 1**.
- 1.0.2 An Environmental Impact Assessment (EIA) Report (EIAR) has been prepared to accompany the application for consent under Section 36 of the 1989 Electricity Act, to assess and report on any potential significant effects of the Proposed Development and, where applicable and where it has been possible, sets out how these effects have been reduced or mitigated. This document provides a Non-Technical Summary (NTS) of the EIAR.
- 1.0.3 This NTS and the EIAR uses the below terminology throughout:
- Proposed Development – All elements of the West Torrisdale Wind Farm development for which S36 consent and deemed planning permission are sought.
  - Application Boundary – The red line boundary defining all elements of the Proposed Development for the purpose of the S36 application.
  - Wind Turbine Array – the location of the wind turbines comprising the Proposed Development.
  - Access Corridor – the land within the Application Boundary in which the access track connects the Wind Turbine Array with the A83 road.
  - Study Area – the area in which the EIA is undertaken, defined for each technical topic as appropriate.

## 1.1 Purpose of the Non-Technical Summary

- 1.1.1 The aim of this NTS is to summarise the content and main findings of the EIAR in a clear and concise manner to assist the public in understanding what the potential significant environmental effects of the Proposed Development are, and where applicable and where it has been possible, how they have been reduced or mitigated.
- 1.1.2 The EIAR comprises the following volumes:
- **Volume 1:** Non-Technical Summary (NTS);
  - **Volume 2:** Main Report;
  - **Volume 3a:** Figures;
  - **Volume 3b:** Visualisations;
  - **Volume 4:** Technical Appendices; and

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<sup>1</sup> An application for consent for the Proposed Development will be made to the Scottish Ministers under section 36 of the Electricity Act 1989, along with a request for a direction that planning permission be deemed to be granted under section 57(2) of the Town and Country Planning (Scotland) Act 1997 as amended

- **Volume 5:** Confidential.

1.1.3 The Application is accompanied by the following documents that do not form part of the EIAR:

- Planning Statement;
- Design and Access Statement (DAS); and
- Statement of Community Consultation (SOCC).

## 1.2 EIA Process and Methodology

1.2.1 EIA is a process that identifies the potential environmental effects (both beneficial and adverse) of a proposed development and identifies mitigation to avoid, reduce and offset any potential significant adverse environmental effects. The EIA process adopted for the Proposed Development has followed best practice guidelines, as set out by the Institute of Environmental Management and Assessment's Quality Mark Scheme<sup>2</sup>.

## 1.3 Copies of the EIAR

1.3.1 Hard copies of the EIAR and supporting information will be made available to view during the consultation period at the following publicly accessible locations:

- Blackbird Tearoom, Carradale, Campbeltown, PA28 6QG; and
- Carradale Village Hall, Carradale, Campbeltown, PA28 6SB.

1.3.2 An electronic version of the reports supporting the Application, including the EIAR, are available to view and download from <https://www.esbenergy.co.uk/our-story-in-britain/about/our-story-in-britain/west-torrisdale-wind-farm>.

1.3.3 The application documents will be available via the Scottish Government energy consents portal (<https://www.energyconsents.scot/Default.aspx>).

1.3.4 For anyone who has difficulty accessing the documentation online, a DVD or USB copy will be made available free of charge. Hardcopies of the Non-Technical Summary can also be made available free of charge by contacting [westtorrisdale@esb.ie](mailto:westtorrisdale@esb.ie).

## 1.4 Commenting on the Application

1.4.1 When the Application for the Proposed Development is lodged with Scottish Government, the Applicant will advertise the Application in accordance with applicable legislation as follows:

- The Campbeltown Courier for two consecutive weeks;
- The Argyllshire Advertiser for two consecutive weeks;
- The Herald for one week;
- The Edinburgh Gazette for two consecutive weeks; and
- on the Applicant's project website at: [www.esbenergy.co.uk/our-story-in-britain/about/our-story-in-britain/west-torrisdale-wind-farm](https://www.esbenergy.co.uk/our-story-in-britain/about/our-story-in-britain/west-torrisdale-wind-farm)

1.4.2 The advertisement will provide details of the date by when representations should be made. The Scottish Government will invite formal representations on the proposal, which will be taken into account before any decision is reached on the application.

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<sup>2</sup> <https://www.iema.net/corporate-programmes/eia-quality-mark>

- 1.4.3 Any representations in relation to the application should be made by to the ECU mailbox, at [representations@gov.scot](mailto:representations@gov.scot) or by post to The Scottish Government, Energy Consents Unit, 4<sup>th</sup> Floor, 5 Atlantic Quay, 150 Broomielaw, Glasgow, G2 8LU, identifying the proposal and specifying the grounds for representation. Written or emailed representations should be dated, clearly stating the name (in block capitals), full return email and postal address of those making representations.

## 2. Proposed Development

### 2.1 Need for the Development

2.1.1 The Scottish Government declared a climate emergency<sup>3</sup> in 2019. The Scottish Climate Change Plan 2020 reflects the increased ambition of the new targets set by the Climate Change (Emissions Reduction targets) (Scotland) Act 2019 to reach net-zero emissions. The Scottish Energy Strategy also includes a new 2030 'whole system' target for the equivalent of 50 % of Scotland's heat, transport and electricity consumption to be supplied by renewable sources. Taking account of the policy context, there are a number of benefits associated with the Proposed Development. The project would bring a wealth of socio-economic benefits to the local community, including the creation of jobs and opportunities for local businesses and suppliers during the construction phase and for the lifetime of the project. This Section 36 Application therefore not only complies with Scottish Government planning and energy policy but would also lead to increased benefits both in respect of climate change, as well as local economic benefits.

### 2.2 Site Location

2.2.1 The Application Boundary covers an area of approximately 391 hectares (ha), whereas the area where the wind turbines are located ('the Wind Turbine Array') covers an area of approximately 221 ha and is located east of the A83 and west of the B834 approximately 4 km southwest of Carradale in Argyll and Bute (approximate Ordnance Survey British National Grid (OS BNG) reference for turbine array centre: NR 76731 36486NR) as illustrated in **Figure 1**.

2.2.2 Operational wind farms are an existing feature of the surrounding landscape. As illustrated on **Figure 2**, the operational Beinn an Tuirc, Beinn an Tuirc Extension and Beinn an Tuirc Phase 3 turbines are located approximately 0.87 km and 2.19 km west and 3.9 km southwest of the Wind Turbine Array. These wind farms have tip heights of 64 m, 100 m and 126 m respectively.

### 2.3 Description of the Proposed Development

2.3.1 The Proposed Development Layout is shown on **Figure 3** and includes the following key components:

- Up to 9 wind turbines, each up to a maximum tip height of 149.9 m (of up to 6 MW);
- Permanent foundations supporting each wind turbine;
- Associated crane hardstanding at each wind turbine location;
- An external transformer at each wind turbine location;
- A series of new on-site access tracks (approximately 4.9 km) with associated watercourse crossings where necessary and upgraded sections of existing access track (approximately 18.7 km);
- Underground electrical cabling within the Wind Turbine Array;
- A compound containing control building, substation (including outdoor transformer and control equipment) a BESS (of up to 20 MW) and LiDAR;

<sup>3</sup> <https://www.gov.scot/publications/global-climate-emergency-scotlands-response-climate-change-secretary-roseanna-cunninghams-statement>

- Temporary construction compounds including for construction, security and materials handling; and
  - Search areas for three borrow pits.
- 2.3.2 The locations of the proposed wind turbines and other infrastructure would potentially be subject to 'micrositing'. This process allows for minor changes in wind turbine or infrastructure locations to respond to possible variations in ground conditions across the Wind Turbine Array, which would only be confirmed following detailed site investigation work carried out immediately prior to construction. This process also provides scope for further mitigation of localised potential environmental effects through avoidance of sensitive features. It is anticipated that a micrositing distance of 75 m would be appropriate for the Proposed Development and would form a condition accompanying consent, should it be granted. Any repositioning would not encroach into environmentally constrained areas and would be carried out under the supervision of an Environmental Clerk of Works (ECoW) and an appropriately experienced and qualified engineer. The proposed locations for all infrastructure including wind turbines, tracks, the substation including a BESS, borrow pit search areas and temporary compounds are shown on **Figure 3**.
- 2.3.3 The grid connection would be the responsibility of the transmission licence holder (Scottish Power Energy Networks (SPEN)) and would be subject to a separate consenting process. The details of the grid connection route are unknown at this stage and have not been included within the assessment in the EIAR.
- 2.3.4 Access to the Proposed Development would be taken from the existing Beinn an Tuirc Wind Farm track network (**Figure 3**). Further details on the turbine delivery route are provided within **Chapter 10** of the EIAR (Volume 2).

### 3. Policy Context

- 3.0.1 The statutory Development Plan covering the Proposed Development comprises the following:
- National Planning Framework 4 (NPF4) (adopted on the 13th February 2023); and
  - The Argyll and Bute Local Development Plan 2 ('the LDP2') (adopted 28th February 2024).
- 3.0.2 LDP2 represent the Local Development Plan for planning purposes and the EIAR has considered this the most appropriate policy framework to consider.
- 3.0.3 The Council's previous spatial framework guidance which was contained within Supplementary Guidance 2: Wind Farm Map 1 and Map 2 (adopted December 2016) did inform the early site selection and sequential feasibility process. The Proposed Development site was identified as being located within Group 3 ('likely to be acceptable') and therefore was recognised early in design feasibility as being a site capable of facilitating renewable energy development in principle.
- 3.0.4 The recent adoption of NPF4 and the embedding of this policy framework as part of the statutory Development Plan, means that in the event of conflict between an LDP and NPF4, then the most recent policy position will prevail. This has been clarified in the Chief Planner letter: 'Transitional arrangements for National Planning Framework 4 - February 2023' published on 8th February 2023, which states that, *"in the event of any incompatibility between a provision of NPF and a provision of a Local Development Plan, whichever of them is the later in date is to prevail"*<sup>4</sup>. In this instance, LDP2 represents the most recent policy position, however given this has been approved in line with the policies of NPF 4, no conflicts have been identified.

#### 3.1 National Planning Framework 4

- 3.1.1 National Planning Framework 4 ("NPF4") is a key consideration for the design evolution of the Proposed Development. NPF4 is designed to support Scotland's commitment of reaching net zero emissions by 2045 and thereby tackling the climate change emergency and is of direct relevance to wind farm developments in Scotland.
- 3.1.2 NPF4 has been carefully considered throughout the design process of the Proposed Development. Key aspects of NPF4 that have informed the design evolution of the Proposed Development comprise the following:
- Policy 1 - to encourage, promote and facilitate development that addresses the global climate emergency and nature crisis;
  - Policy 3(b) – Development proposals for national or major development, or for development that requires an Environmental Impact Assessment will only be supported where it can be demonstrated that the proposal will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention;
  - Policy 4 - To protect, restore and enhance natural assets making best use of nature-based solutions;
  - Policy 5 - To protect carbon-rich soils, restore peatlands and minimise disturbance to soils from development;

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<sup>4</sup> Chief Planner letter: transitional arrangements for National Planning Framework 4 - February 2023

- Policy 6 - to protect and expand forests, woodland and trees;
- Policy 7 - To protect and enhance historic environment assets and places; and
- Policy 11(a) - Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported.



## 4. Consultation on the Scope of the EIA

### 4.1 Scoping

- 4.1.1 The Applicant submitted a request for a Scoping Opinion to Scottish Ministers in February 2021. This request was accompanied by a Scoping Report, prepared by Ramboll on behalf of the Applicant, which set out a summary of the proposals; identified the potential significant environmental effects, and summarised the proposed scope of the EIA.
- 4.1.2 A Scoping Opinion was received from the Energy Consents Unit (ECU) on 26th April 2021. The contents of this and other consultation responses received are summarised in **Technical Appendix 1.1 (EIAR Volume 4)**, along with a list of all bodies consulted during the Scoping exercise.
- 4.1.3 The Scoping Process allowed the EIAR to focus on the main areas of interest raised by various Consultees, with agreement with Consultees that impacts which are not likely to be significant could be scoped out of further assessment.

### 4.2 Public Consultation

- 4.2.1 In addition to seeking a Scoping Opinion, the Applicant conducted public exhibitions on the 9th, 10th and 11th December 2021 to invite comments from consultees regarding the key environmental issues to be addressed in the EIAR.
- 4.2.2 A summary of the representations received during the public exhibitions is provided in the Statement of Community Consultation which accompanies this Section 36 Application.
- 4.2.3 Further details on the key issues identified through the Scoping and Consultation process are provided in **Chapter 3** of the EIAR (Volume 2).

## 5. Site Selection and Design Evolution

### 5.1 Site Selection

5.1.1 The Applicant completed a wide search of potential renewable energy development sites throughout Scotland. Potential sites are considered and screened against a series of technical, environmental and economic factors, using Geographical Information Systems (GIS) confirmed by site visits to assess known environmental sensitivities, as well as wind speed and energy yield, site access, distance from settlements, environmental and archaeological designations, aviation constraints, microwave and other telecommunication links, and proximity to the electricity grid and road network.

5.1.2 The Wind Turbine Array was identified for wind farm development for a number of reasons:

- it has a high wind resource;
- it is in close proximity to the existing electricity grid network at the Carradale Substation;
- it is located in an area with established access for the delivery of wind turbine components;
- it is located outwith national and international statutory designations for landscape and nature conservation including:
  - Ramsar Sites;
  - Special Protection Areas (SPA);
  - Special Areas of Conservation (SAC);
  - Sites of Special Scientific Interest (SSSI);
  - National Nature Reserves (NNR); and
  - National Scenic Areas (NSA);
- it is an appropriate distance from residential receptors and the nearest settlement (Carradale) is approximately 2 km northeast of the Wind Turbine Array; and
- The Argyll and Bute Local Development Plans Supplementary Guidance contains a Spatial Framework for onshore wind energy developments<sup>5</sup> which identifies the location of the Proposed Development as being located outwith Group 2 ('area of significant protection') and within Group 3 ('likely to be acceptable').

### 5.2 Design Evolution

5.2.1 Stakeholder consultation and engagement has been undertaken throughout the design and development process. Advice from key consultees was sought early in the design process to inform decisions surrounding the Proposed Development such as turbine and infrastructure locations and is presented in **Technical Appendix 1.1** (EIAR, Volume 4).

5.2.2 The Proposed Development design process was iterative, with the design evolving as environmental constraints were identified.

5.2.3 Over the course of the development design process for the Proposed Development there have been four principal design iterations, shown on **Figure 4**:

- Layout 1: Pre-Scoping Layout 2020.
- Layout 2: Scoping Layout.

- Layout 3: Design Workshop 1 Layout.
- Layout 4: Gatecheck / Design Freeze Layout.

### **Layout 1: Pre-Scoping Layout 2020**

5.2.4 The Pre-Scoping Layout 2020 (see **Figure 4**) considered the potential for siting turbines across the Wind Turbine Array, indicating that the Wind Turbine Array could theoretically accommodate up to 13 turbines with a maximum blade rotor diameter of up to 136 m. The pre-scoping layout was developed based on the following parameters:

- standard inter-turbine spacing of 5 x 3 rotor diameters within the land available;
- avoidance of steep slopes in excess of 10 degrees; and
- suitable separation from watercourses illustrated on 1:50,000 scale OS mapping.

### **Layout 2: Scoping Layout**

5.2.5 The first major design iteration (see **Figure 4**) was made in January 2021 before submitting the Scoping Report<sup>6</sup>. The change in layout was primarily driven by landscape and visual analysis, with one turbine removed and several turbines repositioned to avoid stacking and provide a more cohesive layout. Turbine T3 was moved to pull it outwith a 50 m watercourse buffer.

### **Layout 3: Design Workshop 1 Layout**

5.2.6 The second major design iteration occurred in response to a review of key environmental constraints including geology, peat and forestry, as well as landscape and visual, and engineering constraints including slope and wind resource. Proposed wind turbines T9 and T7 were repositioned to avoid sensitive blanket bog habitats (Annex 1 habitat) and Class 2 Peatland habitats. Feedback as a result of submission of the Scoping Report and subsequent consultation responses were also considered.

5.2.7 As a result, the number of turbines was reduced from 12 to 9 in order to minimise potential impacts and to ensure the layout worked from a wind resource and engineering perspective. Proposed access tracks and infrastructure elements were also developed following route assessments and a full topographical survey of the Access Corridor. It was concluded that the most practicable route to the Wind Turbine Array was to upgrade the existing forestry access track between the Beinn an Tuirc Extension substation and the Wind Turbine Array rather than creating a new route. This therefore avoided impacts on the surrounding habitat including the removal of peat.

5.2.8 This layout was presented at the public consultation events held in East and West Kintyre Community Council Areas in December 2021, the details of which are outlined in the Statement of Community Consultation Report<sup>10</sup> which accompanies this Application.

### **Layout 4: Gatecheck / Design Freeze Layout**

5.2.9 The final major design iteration followed Design Workshop 1 where the layout was reviewed against all environmental constraints, consultation feedback and updated information gathered during site walkovers.

5.2.10 The Design Workshop 2 focussed on finalising the turbine positions taking into account peat, geology, hydrology, Phase 1 Habitat Survey data, National Vegetation Classification (NVC), Groundwater Dependent Terrestrial Ecosystems (GWDTEs), ornithology and private water

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<sup>6</sup> West Torrisdale Scoping Report (2021) Available at: <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00002224>

supplies (PWS). Turbine positions were altered to accommodate the preliminary optimisation of earthworks for access tracks and crane hardstandings (based on a 3D model), while also positioning them to avoid sensitive habitats and areas of deeper peat.

- 5.2.11 This layout was consulted on through the Gatecheck Report, where no specific feedback was received.
- 5.2.12 **Figure 4** shows the Proposed Developments design evolution from the pre-scoping stage to the final design freeze layout.

## 6. Environmental Impact Assessment

### 6.1 Introduction

6.1.1 The EIA process is designed to identify the potential significant effects, both adverse and beneficial, that the Proposed Development could have on the environment and where it has been possible, set out how they have been reduced or mitigated. The technical assessments have considered the potential effects of the Proposed Development during construction, operation and decommissioning. **Section 7** of this NTS addresses decommissioning. The EIA considered the environmental impacts across a range of factors, in accordance with the Scoping Opinion issued by Scottish Ministers<sup>7</sup>.

6.1.2 The following environmental topics have been considered within the EIA:

- Seascape, Landscape and Visual;
- Cultural Heritage;
- Ecology;
- Ornithology;
- Hydrology and Hydrogeology;
- Geology and Soils;
- Traffic, Transport and Access;
- Noise;
- Aviation & Telecommunications;
- Forestry; and
- Shadow Flicker

6.1.3 The conclusions of the EIA are that potential significant effects have been identified for a small number of EIA topics prior to mitigation, however these would be reduced to non-significant residual effects after the application of mitigation. The only exception to this is for landscape and visual and cultural heritage impacts where some significant residual effects would remain during operation as outlined in **Section 6.2** and **6.3**.

### 6.2 Seascape, Landscape and Visual

6.2.1 Careful siting and design of the Proposed Development has successfully minimised potential effects on seascape, landscape and visual receptors. Of the 25 Landscape Character Types (LCTs) within the study area, potential significant effects have been limited to localised areas of the Upland Forest Moor Mosaic in which the Proposed Development is situated within.

6.2.2 Similarly, in terms of visual receptors when considering the Proposed Development on its own, likely significant effects have been successfully limited to:

- The Torrisdale Bay Parking Area;
- Summit of Beinn Tarsuinn;
- Carradale Fort;
- Kintyre Way near Torrisdale Castle; and

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<sup>7</sup> A Scoping Opinion was received from Scottish Ministers on 1 April 2021

- Carradale Golf Course/ Carradale Explorer Walk.
- 6.2.3 Further details on potential impacts to visual receptors are provided in **Chapter 4** of the EIAR (Volume 2).
- 6.2.4 Taking into account proposed mitigation measures, the SLVIA identified significant residual operational effects on the following receptors;
- Localised significant effects upon the following LCTs;
    - LCT 03: Hidden Glens;
    - LCT 20: Rocky Mosaic;
    - LCT 06c: Mull of Kintyre Upland Forest-Moor Mosaic;
    - LCT 14: Bay Farmland;
    - LCT 06: Upland Forest Moor Mosaic;
    - LCT 22: Coastal Parallel Ridges;
    - LCT 6b: Knapdale Upland Forest Moor Mosaic;
    - LCT 83: Rugged Upland – Ayrshire;
    - LCT 59: Raised Beach Coast and Cliffs; and
    - LCT 65: Coastal Lowland Moor.
  - Localised significant effects upon recreational routes including the Kintyre way, National Cycle Route 78, and Core paths;
  - Significant in-combination effects on the North Arran National Scenic Area (NSA), Special Landscape Area (SLA) and Wild Land Area (WLA);
  - Significant in-combination effects at two of the 12 LCTs and one of the SLAs (but with negligible contribution from the Proposed Development).
- 6.2.5 The Proposed Development would add to the emerging pattern of development across the upland landscapes established by two main clusters of operational wind farm development. The larger cluster including, Beinn an Tuirc Beinn an Tuirc, Beinn an Tuirc Extension, Beinn an Tuirc Phase 3, Auchadaduie and Blary Hill Wind Farms. The smaller cluster, situated to the north east comprising Cour and Freasdail Wind Farms.
- 6.2.6 The Proposed Development would also conform to the emerging pattern of development, consolidating the operational Beinn an Tuirc, Beinn an Tuirc Extension and Beinn an Tuirc Phase 3 Wind Farms, being located adjacent to these operational schemes and also sharing the same access route from the A83. This would result in the Proposed Development rarely being seen in isolation. The Proposed Development would represent a minor addition and consolidation of the operational and consented pattern of development, that also takes into account currently undetermined proposals.

### 6.3 Cultural Heritage

- 6.3.1 A desk-based assessment and walk-over field survey has been carried out to establish the archaeology and cultural heritage baseline within the Application Boundary.
- 6.3.2 The assessment was informed by consultation responses provided by Historic Environment Scotland (HES) and the West of Scotland Archaeology Service (WoSAS).
- 6.3.3 Three heritage assets were identified within the Application Boundary. These are three groups of former shielings huts associated with summer grazing and usually considered to be of medieval or later date, although some have been dated to the prehistoric period. One of the groups of shieling huts, comprising 18 well-preserved huts, is assessed as being of

heritage value at a regional level and of medium sensitivity; the other smaller groups of sheiling huts are assessed as being of heritage value at a local level and of low sensitivity.

- 6.3.4 There are no Scheduled Monuments or Listed Buildings within the Application Boundary, and no part of the Wind Turbine Array lies within an Inventory Garden and Designed Landscape, Inventory Historic Battlefield, or Conservation Area.
- 6.3.5 Within 5 km of the outermost wind turbines there are eight Scheduled Monuments, two Category A Listed Buildings, eight Category B Listed Buildings and three Category C Listed Buildings. There are an additional 28 Scheduled Monuments, three Category A Listed Buildings and eight Category B Listed Buildings within 5 km to 10 km of the outermost wind turbines.
- 6.3.6 The assessment identified no significant residual effects during construction.
- 6.3.7 Potential operational effects on settings of designated heritage assets within the 5 km and 10 km Study Areas have been considered and significant effects have been predicted upon the setting of one Scheduled Monument: Saddell Abbey. However, there would not be an adverse effect upon the integrity of these assets' settings (NPF4 Policy 7(h) ii). Further details on operational effects are provided in **Chapter 5** of the EIAR (Volume 2).
- 6.3.8 An assessment of the known cultural heritage resource within and in the immediate vicinity of the Inner Study Area, and the current and past land-use, indicates that there is a low to negligible likelihood of hitherto unidentified archaeological remains being present within the area of the Application Boundary.
- 6.3.9 No significant effects have been predicted for the remaining Scheduled Monuments and Listed Buildings within the Study Areas.
- 6.3.10 There are no predicted significant cumulative impacts during construction or operation on heritage assets within the Study Area from the Proposed Development in combination with other cumulative developments that are either consented or in planning.

## 6.4 Ecology

- 6.4.1 The ecological assessment has considered potential impacts and their associated effects on ecological features, such as habitats and protected species.
- 6.4.2 Field surveys including, extended Phase 1 Habitat Survey, National Vegetation Classification (NVC) surveys and static bat activity surveys were undertaken to provide baseline information on habitats and faunal species. The dominant habitats in the Application Boundary are coniferous woodland plantation, wet heath and marshy grassland. Potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs) were recorded but are unlikely to be groundwater dependent in the setting of the field survey area. Protected species surveys identified the presence of common pipistrelle, soprano pipistrelle, brown long-eared bat, noctule, pine marten, otter, common frog and common lizard. Rhododendron (considered an Invasive Non-Native Species (INNS)) was also recorded throughout the field survey area.
- 6.4.3 Following completion of construction of the Proposed Development (including reinstatement work), residual adverse effects are anticipated for the medium-term (approximately 10 to 15 years), until peatland habitats have re-established. Permanent habitat loss would occur in blanket bog (13,117.46 m<sup>2</sup>) due to the excavation of turbine bases, other infrastructure and access tracks.
- 6.4.4 The Outline Habitat Management Plan (OHMP) (**Technical Appendix 6.3**, EIAR Volume 4) sets out the proposed measures for habitat restoration and enhancement within the ecology

Study Area and has been completed in line following best practice guidance from NatureScot (NS)<sup>8</sup>. The measures include the following:

- To restore and enhance a minimum of 40,898.79 m<sup>2</sup> of peatland habitat within five years of commissioning of the Proposed Development. This area includes the amount of blanket bog (13,117.46 m<sup>2</sup>), wet heath (23,897.61 m<sup>2</sup>) and wet modified bog (3,883.72 m<sup>2</sup>) being lost or degraded as a result of the Proposed Development. This would enhance the quality of an Annex 1 habitat<sup>9</sup> and compensate for habitat loss and degradation incurred as a result of the Proposed Development;
- To work in conjunction with the Deucheran Hill Wind Farm HMP<sup>10</sup>, as requested by NS in the pre-gatecheck meeting detailed in **Chapter 6** (EIAR Volume 2), to ensure mitigation and enhancement measures are complementary and cumulative;
- To enhance the field survey area through additional broadleaved and riparian woodland planting, controlling bracken *Pteridium aquilinum* and rhododendron *Rhododendron ponticum*, and the creation of reptile and amphibian refugia; and
- To monitor the success of management measures.

6.4.5 Without the application of mitigation, adverse effects are predicted on habitats (peatland, running water and marshy grassland), INNS, bats and otter. Following the application of mitigation, such as a CEMP, peatland restoration, a curtailment strategy and bat friendly lighting, no significant residual effects are predicted.

6.4.6 No residual cumulative construction or operation effects on habitats are predicted.

## 6.5 Ornithology

6.5.1 A desk-based assessment and ornithological surveys have been undertaken to establish the bird species and populations present in the vicinity of the Wind Turbine Array. The assessment considered ways in which birds could be affected (directly or indirectly) by the construction and operation of the Proposed Development and an assessment has been made with regards to the significance of these effects. The assessment considers direct impacts through collision risk analysis and indirect effects through habitat disturbance taking into account best practice measures being implemented through the CEMP, including the implementation of a Bird Protection Plan (BPP).

6.5.2 One of the key ornithological constraints identified is the Kintyre Goose Roosts SPA which lies 5.5 km southwest of the Application Boundary at its closest point. Surveys only recorded one flight of potential Greenland white-fronted geese, flying to the east of the Wind Turbine Array. As such, no significant effects on the species or the SPA are predicted. Field surveys recorded two black grouse leks within the Study Area and territories were identified of golden eagle, hen harrier and osprey.

6.5.3 Potential significant effects could impact hen harrier and osprey territories and pre-construction surveys are recommended to mitigate this. Taking into consideration mitigation,

<sup>8</sup> Scottish Natural Heritage (SNH) (now NS) (2016). *Planning for Development: What to Consider and Include in Habitat Management Plans*. Available at: [https://www.webarchive.org.uk/wayback/archive/20221026161346mp\\_/https://www.nature.scot/sites/default/files/2019-01/Guidance%20-%20Planning%20for%20development%20-%20-%20What%20to%20consider%20and%20include%20in%20Habitat%20Management%20Plans.pdf](https://www.webarchive.org.uk/wayback/archive/20221026161346mp_/https://www.nature.scot/sites/default/files/2019-01/Guidance%20-%20Planning%20for%20development%20-%20-%20What%20to%20consider%20and%20include%20in%20Habitat%20Management%20Plans.pdf).

<sup>9</sup> The Conservation of Habitats and Species Regulations. URL: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made> [Accessed 17th February 2023].

<sup>10</sup> Appendix B: Deucheran Hill Habitat Enhancement Programme. URL: <https://portal360.argyll-bute.gov.uk/my-requests/document-viewer?DocNo=20563101> [Accessed 24th May 2023].



no significant construction or operational residual effects or cumulative effects on ornithological features are predicted.

## 6.6 Hydrology and Hydrogeology

- 6.6.1 The assessment considers potential significant effects on hydrology and hydrogeology associated with the construction and operation of the Proposed Development. The assessment considers effects on water quality, flood risk, water resources, private water supplies and GWTDEs.
- 6.6.2 Throughout the design of the Proposed Development, consideration has been given to avoid or minimise adverse effects upon hydrological receptors. The design of new watercourse crossings would maintain hydraulic connectivity and allow the free passage of fish and other wildlife beneath. Watercourse crossings would also be of sufficient size so as not to restrict or concentrate flows downstream and to convey flows during periods of heavy rainfall.
- 6.6.3 The assessment concluded that during construction no significant adverse effects are likely to occur as construction would be carried out in accordance with a site-specific CEMP which would include pollution prevention control measures, the adoption of 50 m buffer from surface water features where possible, the use of sustainable drainage systems and applications for the relevant licences/ authorisations for abstractions and discharges and watercourse crossings.
- 6.6.4 There are no proposed wind farm developments in hydrological connectivity to the Proposed Development, or planning applications for other developments that could lead to a cumulative impact on the water environment. Therefore, there would be no residual cumulative construction or operational effects.
- 6.6.5 During the operation phase of the Proposed Development, no significant adverse residual effects are likely to occur.

## 6.7 Geology and Soils

- 6.7.1 The assessment considered potential significant effects on geology and soils, including peat associated with the construction and operation of the Proposed Development.
- 6.7.2 The magnitude of a pollution event, erosion or sedimentation, drainage and dewatering on peat soils and peat, is considered negligible following adherence to good practice measures and the CEMP. An Outline Peat Management Plan (PMP) has also been produced which shows that peat disturbed by the Proposed Development can be readily re-used for restoration purposes.
- 6.7.3 The assessment concluded that there would be no significant construction or operational residual effects on geology and soil and no significant cumulative effects are predicted.

## 6.8 Traffic, Transport and Access

- 6.8.1 The assessment considered potential significant effects on traffic, transport and access associated with the Proposed Development.
- 6.8.2 During the construction phase of the Proposed Development there would be a temporary increase in traffic flows. General construction traffic movements would be managed through the provision of the following:
- Construction Traffic Management Plan (CTMP);

- Abnormal Load Management Plan and Offsite Mitigation Works;
- Public Information Distribution;
- Path Management Plan; and
- Staff Travel Plan.

6.8.3 With these measures in place, effects during the construction stage are considered to be not significant.

6.8.4 Once the Proposed Development is operational, the volume of traffic associated with the operations would be minimal, relating to maintenance of wind turbines only, approximately two vehicles per week. There would be no significant residual effects from the operational phase of the Proposed Development.

6.8.5 No significant cumulative effects on traffic, transport and access are predicted.

## **6.9 Noise and Vibration**

6.9.1 The assessment considered the potential significant effects of noise impacts at the nearby dwellings during the construction and operational phases.

6.9.2 The noise modelling demonstrates that the Proposed Development would operate within the construction stage noise limits, and therefore no likely significant effects are identified.

6.9.3 Best practice guidance was used to derive appropriate noise limits for the operational phase of the Proposed Development, taking account of the Proposed Development alone and in combination with other relevant cumulative wind farm developments.

6.9.4 The Proposed Development is located sufficiently far from receptors such that predicted operational and cumulative operational noise levels associated with its introduction would comfortably meet the limiting requirements of ETSU-R-97, without the need to impose additional mitigation or curtail the operation of the wind turbines.

6.9.5 Noise associated with the operation of the Proposed Development is considered Not Significant and no specific mitigation measures are considered necessary.

6.9.6 Noise associated with the cumulative operation of the Proposed Development in combination with other cumulative schemes is considered not significant and no specific mitigation measures are considered necessary.

## **6.10 Aviation and Telecommunications**

6.10.1 An aviation and telecommunications assessment considered the potential for conflict with:

- primary surveillance radars (PSRs) used for air traffic control, air defence and weather forecasting;
- aeronautical radio navigation aids;
- defence facilities;
- obstacle hazards to civil and military aircraft flying at low level; and
- fixed telecommunications links.

6.10.2 During the construction an operational phase, the residual effect on military low flying aircraft will be Negligible as a result of depiction of the Proposed Development on low flying charts

and provision of infra-red lighting on wind turbines. In addition, the residual effects on telecommunication during construction will be Negligible.

- 6.10.3 There will be no residual effect on primary surveillance radars during construction and operation and a minor, Not Significant effect on Islay Airport Initial Approach Fixes (IAF) for the Instrument Approach Procedures (IAPs) due to mitigation through revision of the relevant Instrument Flight Procedures (IFP) charts by Highlands & Islands Airports Ltd (HIAL's) Approved Procedure Design Organisation (APDO) and their approval by the Civil Aviation Authority (CAA)

## **6.11 Forestry**

- 6.11.1 A desk-based assessment considered the potential implications of the Proposed Development on the woodland resource within the Application Boundary and its long-term management.
- 6.11.2 The Forestry Study Area extends to approximately 202.7 ha and comprises of privately owned and managed woodlands. These woodlands were previously covered by a Forest Plan that is due to expire in 2023 and is in the process of being renewed by the landowner. It is expected that this plan will be approved prior to consent being granted. It was therefore decided to use the new Forest Plan for this assessment. A further 118.5 ha of woodland in Guesdale forest that fall within the Access Corridor are also included for analysis. These woodlands are on the National Forest Estate and are managed by Forest and Land Scotland. They form part of the Lussa Land Management Plan which runs until 2027.
- 6.11.3 During the construction phase advanced felling would occur on 61.3 ha of the forestry within the Study Area.
- 6.11.4 The species composition of the forest would change as a result of the Proposed Development forestry proposals. In particular, the area of Sitka spruce would decrease by 37.6 ha.
- 6.11.5 The area of unplanted ground would increase and, as a result, there would be a net loss of woodland area of 39.8 ha.
- 6.11.6 In order to comply with the Scottish Government's Control of Woodland Removal Policy, compensation planting would be required to mitigate for the loss of woodland area. The Applicant is committed to providing appropriate compensatory planting. The extent, location and composition of such planting to be agreed with Scottish Forestry, taking into account any revision to the felling and restocking plans prior to the commencement of construction.

## **6.12 Shadow Flicker**

- 6.12.1 Shadow flicker is caused by the moving shadow of the turbine rotor being cast over a narrow opening, such as a window or open door. The assessment considered the potential impacts on residential amenity resulting from shadow flicker during operation of the Proposed Development.
- 6.12.2 The assessment indicates that there are two properties within the shadow flicker Study Area. The potential effects at both properties is considered to be not significant due to the shadow flicker not breaching more than 30 hours of shadow flicker per year.
- 6.12.3 Therefore, no significant residual effects from shadow flicker are assessed during the operation of the Proposed Development.
- 6.12.4 Based on wind turbine locations and shadow length, it is also assessed that there would be no cumulative operational effects from shadow flicker.

## 7. Construction and Environmental Management

### 7.1 Introduction

- 7.1.1 Environmental constraints and considerations have been taken into account in the design of the Proposed Development to avoid and minimise the potential for significant effects. Further measures to prevent or reduce any remaining significant environmental effects are described within each technical Chapter of the EIAR (**Chapters 4 to 14**, (Volume 2)). These measures and commitments are set out in **Chapter 15** of the EIAR (Volume 2). Furthermore, the environmental mitigation and commitments would be formalised within the CEMP.
- 7.1.2 The Applicant and the Principal Contractor would oversee operations and ensure that mitigation measures are implemented, and activities carried out in such a manner as to minimise or prevent effects on the environment. The Principal Contractor would be supported by specialists, such as an Ecological Clerk of Works to ensure that mitigation measures are implemented effectively.
- 7.1.3 The construction of the Proposed Development is estimated to take 22 months.
- 7.1.4 The typical construction hours of work would be Monday to Friday 0700 to 1900 and Saturday 0700 to 1600. No audible works, with the exception of turbine delivery, the completion of turbine erection or emergency work, will take place outside these hours, and any such out-of-hours works will be subject to prior written agreement with ABC, Transport Scotland and Police Scotland.
- 7.1.5 A Traffic Management Plan (TMP) would be agreed in consultation with ABC and Transport Scotland. This would address the scheduling, routing and overall management of abnormal loads movements along with the programming and management of all other HGV movements.
- 7.1.6 A Construction Environmental Management Plan (CEMP) would be implemented during construction to avoid, reduce or control associated adverse environmental effects. An Outline Construction Environmental Management Plan (OCEMP) has been produced and submitted as part of the EIAR (Technical Appendix 2.1 of the EIAR (Volume 4)). The CEMP would, as a minimum, include details of:
- construction methodologies;
  - pollution prevention measures;
  - public liaison provision;
  - peat slide, erosion and compaction management;
  - control of contamination/ pollution prevention;
  - drainage management and sustainable drainage systems (SuDS);
  - water quality monitoring;
  - management of construction traffic;
  - control of noise and vibration; and
  - control of dust and other emissions to air.

## 7.2 Operation Management and Maintenance

- 7.2.1 The expected operational lifetime of the Proposed Development is 35 years from the date of commissioning.
- 7.2.2 Wind turbines and renewable energy projects are designed to operate largely unattended. Each turbine at the Proposed Development would be fitted with an automatic system designed to supervise and control a number of parameters to ensure proper performance (e.g. start-up, shut-down, rotor direction, blade angles etc.) and to monitor condition (e.g. generator temperature).
- 7.2.3 The control system would automatically shut the turbine down should the need arise. Sometimes the turbines would re-start automatically (if the shut-down had been for high winds, or if the grid voltage had fluctuated out of range), but other shut-downs (e.g. generator over temperature) would require investigation and manual restart.

## 7.3 BESS

- 7.3.1 A BESS measuring approximately 75 m x 45 m containing approximately eight battery containers, switchgear container, power conversion systems and security fencing (**Figure 2.9, EIAR Volume 3a**). The BESS is anticipated to comprise a lithium-ion battery technology solution, with modular elements comprising a number of battery housings (either standard containers that comply with International Organisation for Standardisation (ISO), electrical houses ('eHouses') or otherwise) with associated 'heating, ventilation and air-condition' ('HVAC') systems, along with paired power conversion systems ('PCS') comprising bi-directional inverters and transformers as well as central switchgear, metering and transformer, and space for access and operations.
- 7.3.2 The BESS would be able to store an additional 20 MW on-site.

## 7.4 Residues and Emissions

- 7.4.1 The EIAR has considered the potential for residues and emission associated with the construction, operation and decommissioning of the Proposed Development. As required by the EIA Regulations, this includes consideration of water; air; soil and subsoil; noise and vibration; light; heat and radiation; and waste. With the implementation of the CEMP, no significant residues or emissions have been identified during the construction phase. With the implementation of appropriate mitigation no significant residues or emissions would result from the operation of the Proposed Development.

## 7.5 Decommissioning

- 7.5.1 At the end of the project's operational life, a decision will be made as to whether to refurbish, remove, or replace the turbines. If refurbishment or replacement were to be chosen, relevant consent applications will be made. If a decision were to be taken to decommission the Proposed Development, this will entail the removal of all the turbine components, transformers, the substation and associated buildings. Access tracks and underground cables will be left in place and foundations removed to a depth of 0.5 m below ground level to avoid environmental effects from removal. A Decommissioning Plan will set out environmental protection measures and restoration principles which will be implemented. This plan will be agreed with ABC.

- 7.5.2 An assessment of the decommissioning of the Proposed Development has not been undertaken as part of the EIA as the future baseline conditions (environmental and other developments) cannot be predicted accurately at this stage, and ii) the proposals for refurbishment / decommissioning are not known at this stage. However, an outline decommissioning strategy is included in the CEMP (Technical Appendix 2.1, EIAR Volume 4:).
- 7.5.3 An outline decommissioning strategy is included in the outline CEMP which forms part of the planning application submission.

## 8. Benefits of the Proposed Development

8.0.1 The benefits of the Proposed Development can be summarised as follows:

- Generation of up to 54 MW of clean renewable energy and 20 MW storage via the BESS. The BESS enables the storage of electricity generated by the wind farm when it cannot be transferred to the electricity grid, and then released when most needed, resulting in reduced wastage of clean energy generation.
- A reduction in emissions from the electricity grid of around 55,584 tonnes of Carbon Dioxide (CO<sub>2</sub>) per year, making a valuable contribution to the Scottish Government's energy targets and legally binding climate change reduction targets.
- Responds directly to the aspirations of NPF4 by contributing to addressing the climate and nature crisis through the generation of clean renewable energy and reducing reliance on fossil fuels. This supports Scottish Government priorities, and the Proposed Development can draw significant support from this important benefit.
- Delivers a series of economic benefits during its construction and development phase, namely, £4.8 million Gross Value Added (GVA)<sup>11</sup> and 70 years of employment in Argyll and Bute; £13.1 million GVA and 190 years of employment in Scotland; and supporting 120 jobs in Scotland at its peak.
- Restoration of a minimum of 29,099.79 m<sup>2</sup> of degraded peatland towards good-quality, active blanket bog and/or wet heath. The aim is that this would have the effect of creating actively peat-forming blanket bog and/or wet heath, which is able to store increased levels of water and carbon dioxide, helping with flood prevention and climate change.

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<sup>11</sup> a commonly used measure of economic output, GVA captures the contribution made by an organisation to national economic activity. This is usually estimated as the difference between an organisation's turnover and its non-staff operational expenditure;

## 9. Summary

- 9.0.1 As a result of a combination of design-led mitigation and additional proven construction phase mitigation measures, the EIAR concludes that potential significant effects associated with the Proposed Development, alone and in addition to other wind farm developments, are limited to landscape and visual effects (in localised areas within 6 km of the Application Boundary), one heritage asset and one IAF for Islay Airport during the operational phase of the Proposed Development.
- 9.0.2 No residual significant effects are identified for during construction or operation for ecology, ornithology, hydrology, hydrogeology, geology and soils (including peat), noise, traffic and transport, aviation, telecommunications, forestry and shadow flicker.

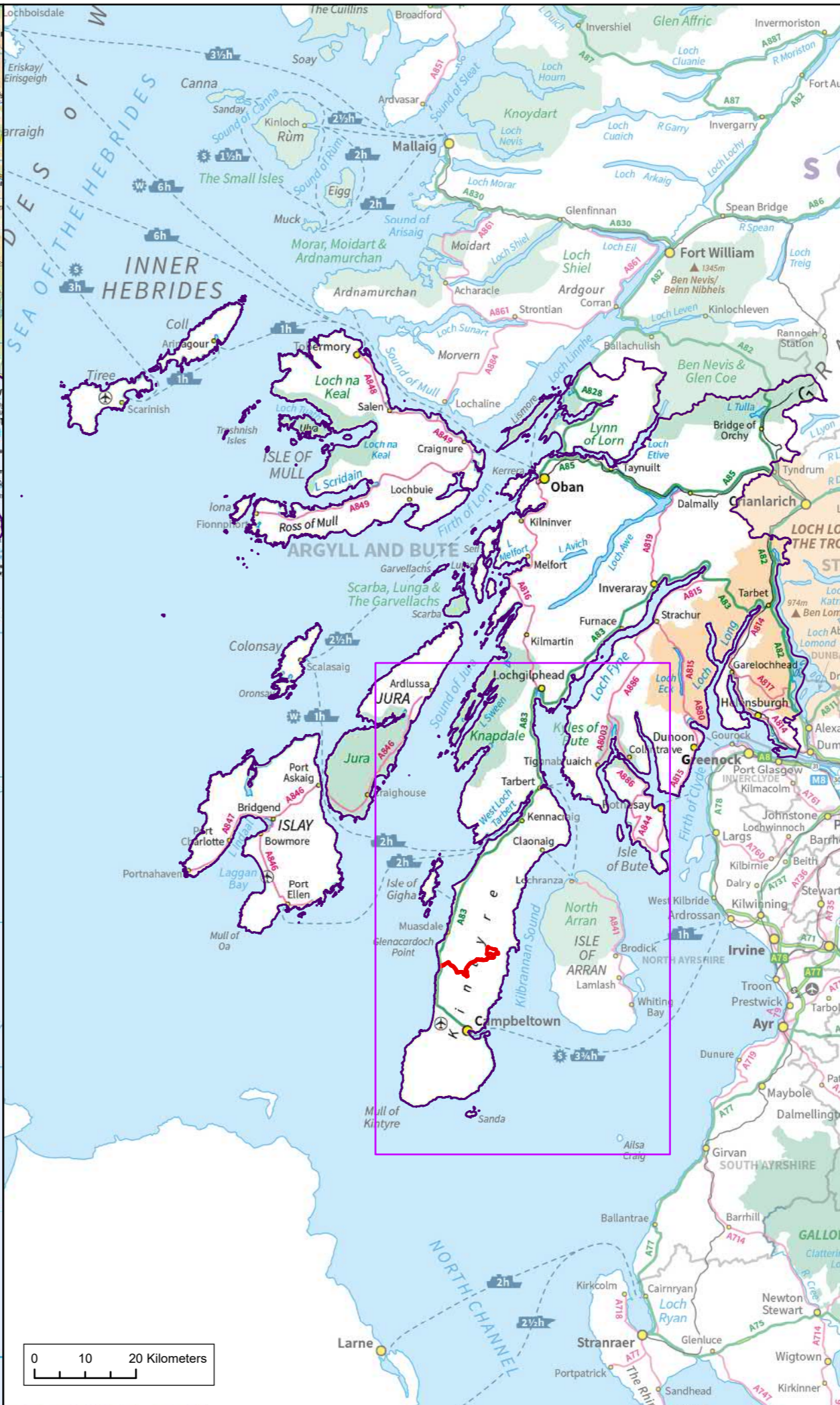


## 10. Abbreviations

<b>Abbreviation</b>	<b>Expanded Term</b>
ABC	Argyll and Bute Council
APDO	Approved Procedure Design Organisation
BESS	Battery Energy Storage System
BPP	Bird Protection Plan
CAA	Civil Aviation Authority
CEMP	Construction (or Contract) Environmental Management Plan
CTMP	Construction Traffic Management Plan
DAS	Design and Access Statement
ECoW	Environmental Clerk of Works
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIA Regulations	Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
EIAR	Environmental Impact Assessment Report
GIS	Geographical Information System
GVA	Gross Value Added
GW	Gigawatt
HES	Historic Environment Scotland
HIAL	Highlands & Islands Airports Lt
HMP	Habitat Management Plan
IAF	Initial Approach Fixes
IFP	Instrument Flight Procedure
INNS	Invasive Non-Native Species
Km	Kilometres
LB	Listed Building
LBAP	Local Biodiversity Action Plan
LBO	Local Biodiversity Officer
LCT	Landscape Character Type
LDP	Local Development Plan
LWECS	Landscape and Wind Energy Capacity Study

m	Metre(s)
MW	Megawatt
NNR	National Nature Reserve
NPF4	National Planning Framework (4) for Scotland
NS	NatureScot
NSA	National Scenic Area
NVC	National Vegetation Classification
OCEMP	Outline Construction Environmental Management Plan
OHMP	Outline Habitat Management Plan
OS	Ordnance Survey
OWPS	Onshore Wind Policy Statement
PAC	Pre-Application Consultation
PMP	Peat Management Plan
PSR	Primary Surveillance Radar
SAC	Special Area of Conservation
SG	Supplementary Guidance
SLA	Special Landscape Area
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SPEN	Scottish Power Energy Networks
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems
TMP	Traffic Management Plan
UK	United Kingdom
WoSAS	West of Scotland Archaeology Service

# Figures



**Legend**

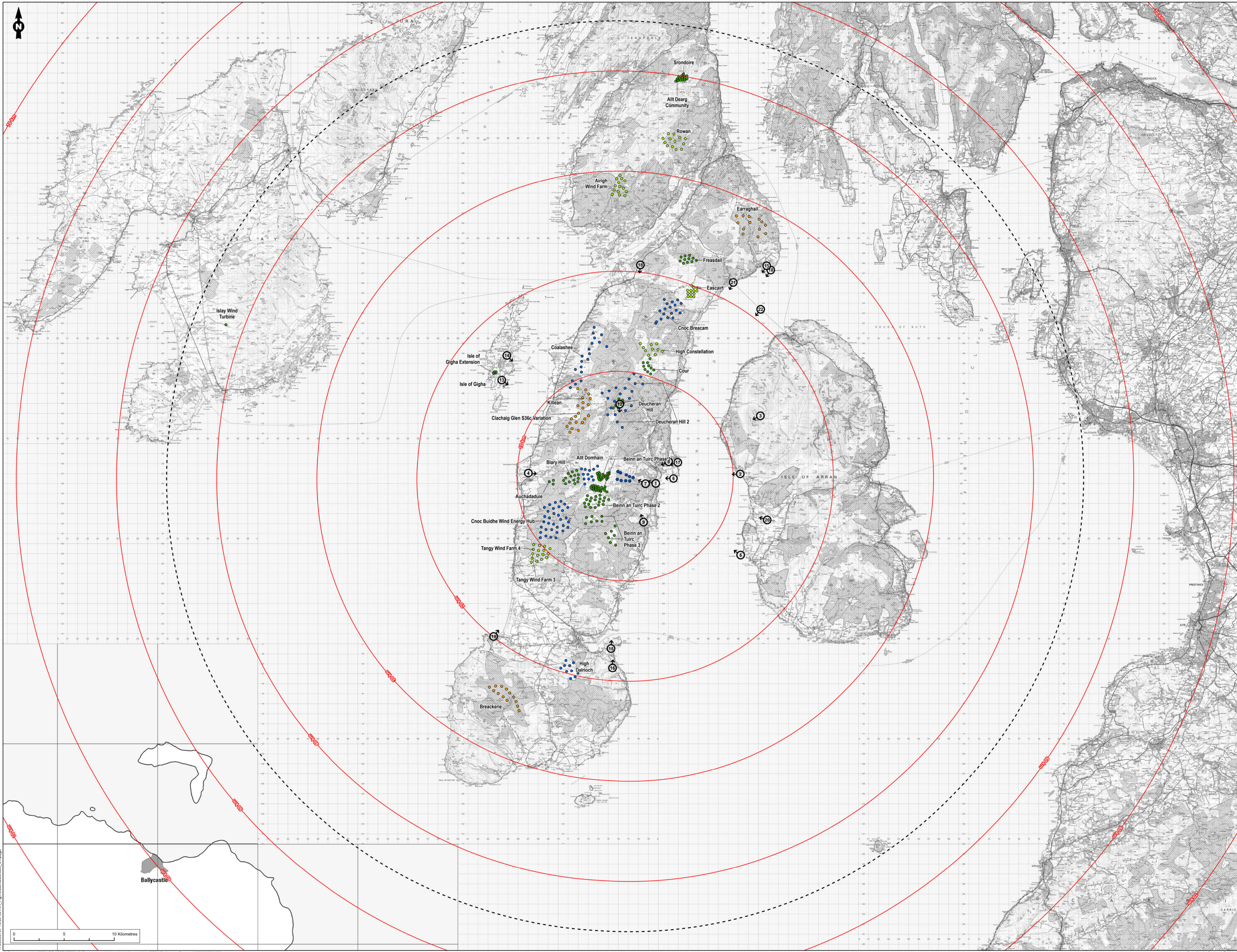
- Application Boundary
- Argyll & Bute Council

Figure Title  
**Site Location**

Project Name  
**West Torrisdale Wind Farm NTS**

Project Number 1700003767	Figure No. 1
Date October 2023	Prepared By AB
Scale As shown @A3	Issue 1
Client <b>ESB</b>	

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- Legend**
- Study Area (45 km)
  - 10 km Radius Interval from Outer Turbines
  - Proposed West Torrisdale Wind Turbines
  - Viewpoints
- Cumulative Wind Turbines**
- Operational
  - Consented
  - In Planning
  - Scoping



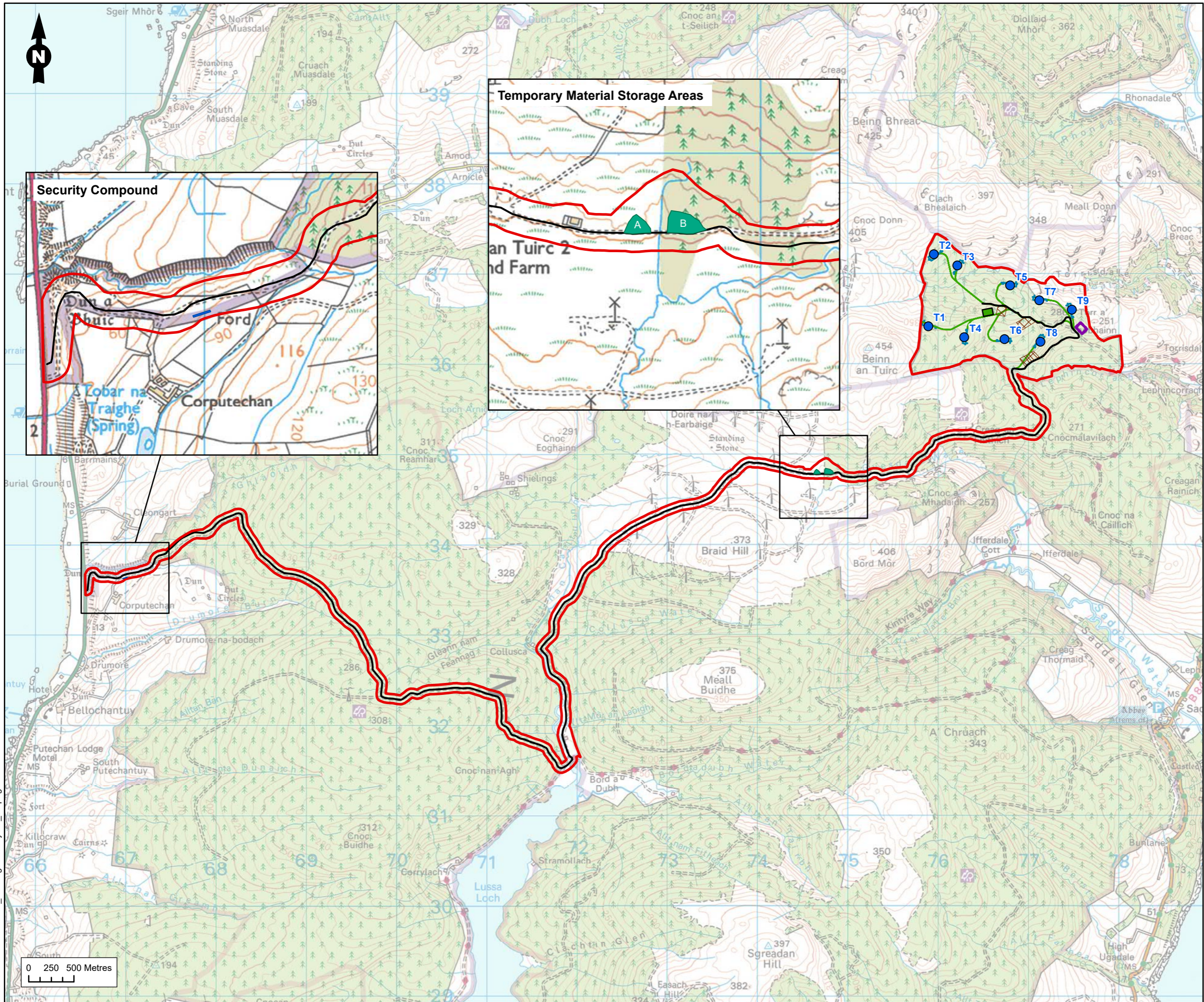
Figure Title  
**Site Context**

Project Name  
**West Torrisdale Wind Farm EIA Report**

Project Number 1700003767	Figure No. 2
Date October 2024	Prepared By RS
Scale 1:165,000 @A1	Issue 1
Client <b>ESB</b>	

**RAMBOLL**

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### Legend

- Application Boundary
- Proposed Wind Turbines
- Existing Access Tracks To Be Upgraded
- Proposed Access Tracks
- Proposed Hardstanding
- Proposed Temporary Compound
- Borrow Pit Search Area
- Proposed Substation and Battery Energy Storage

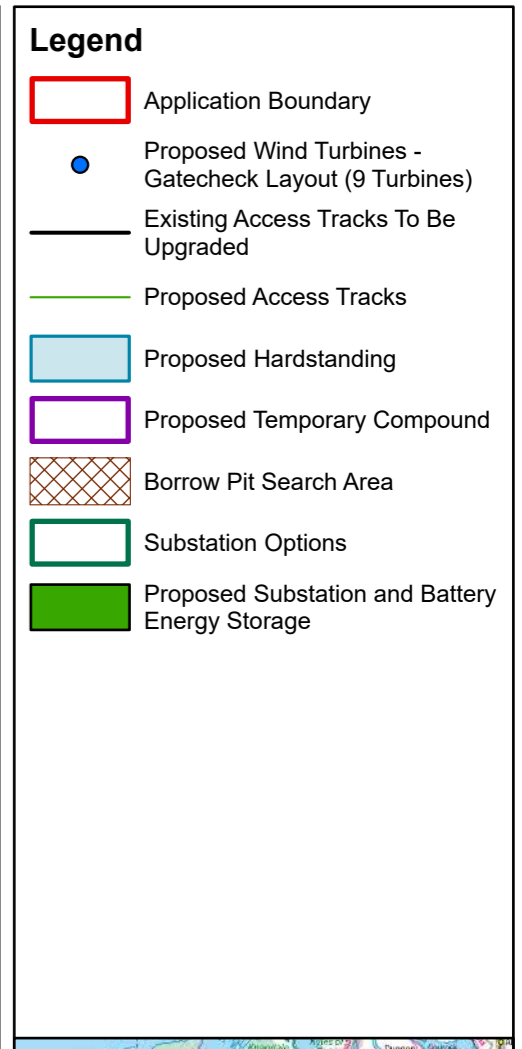
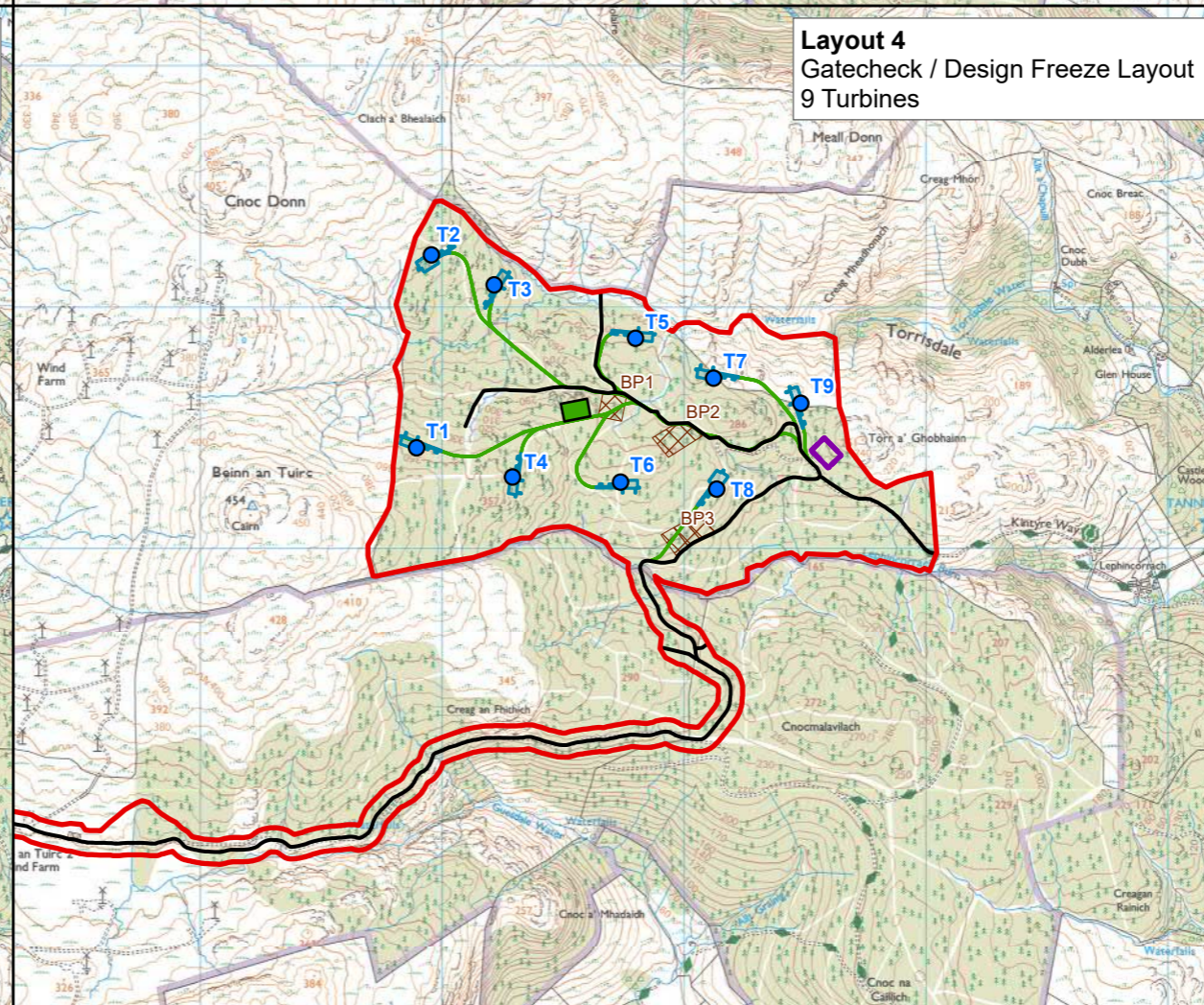
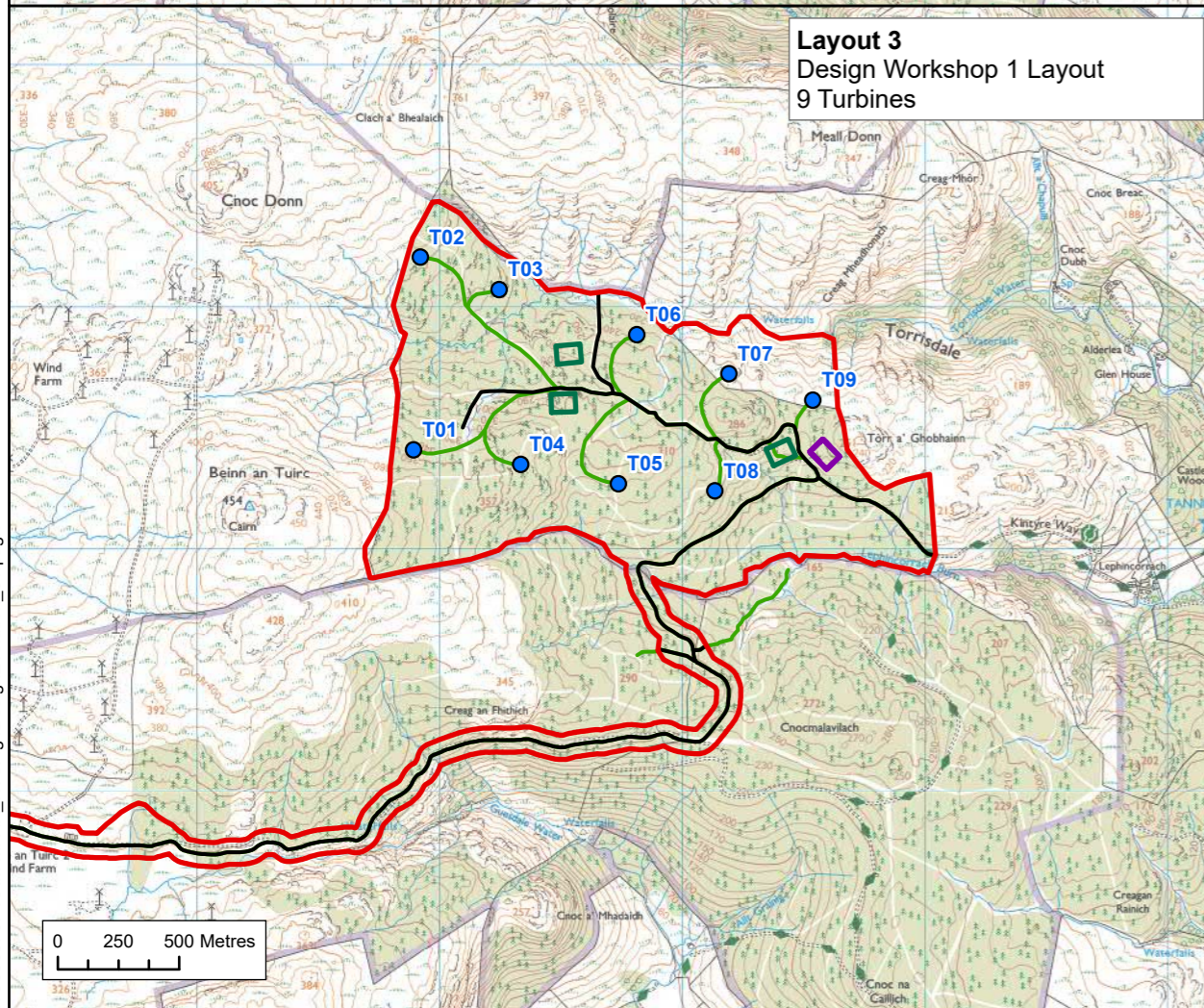
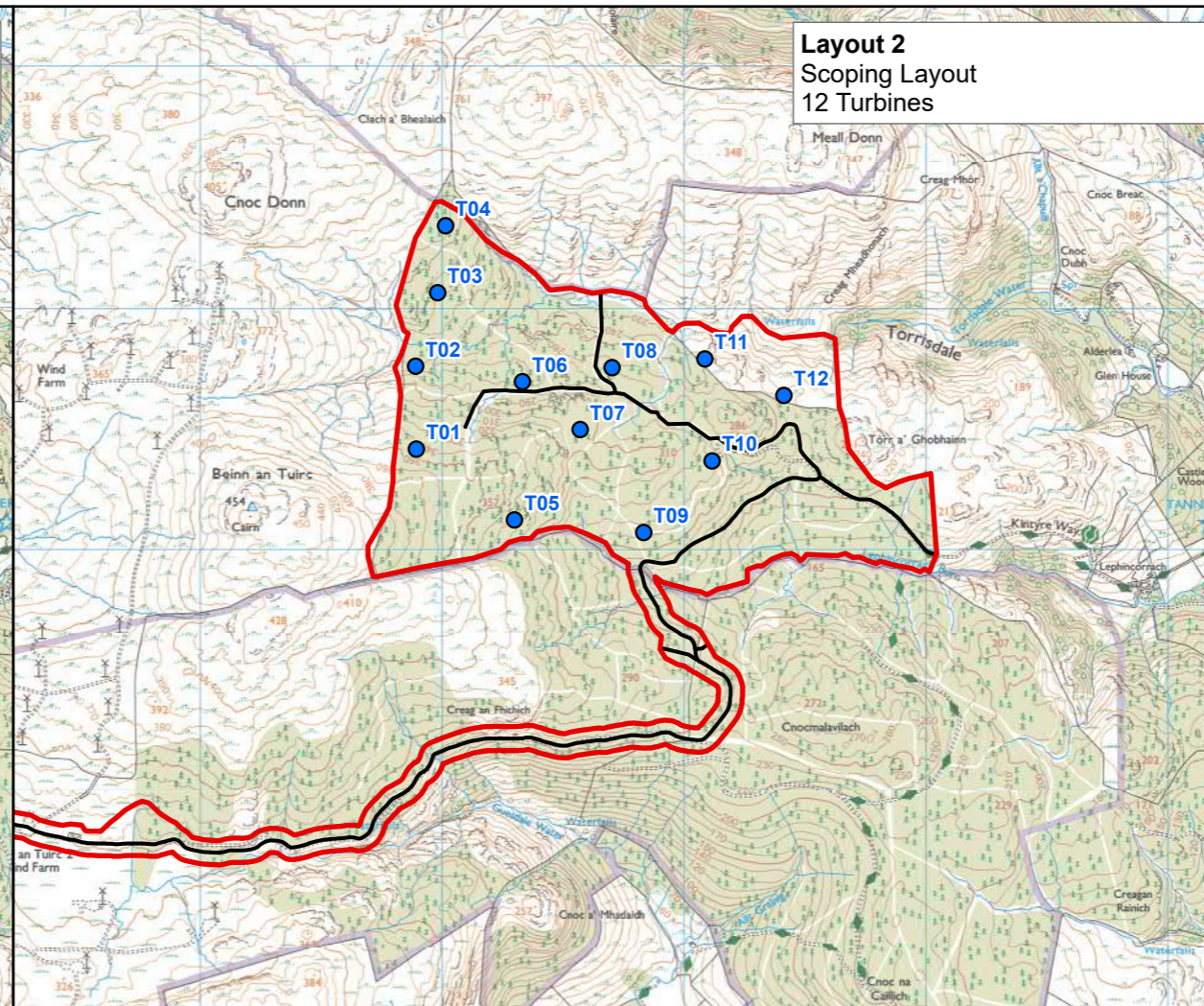
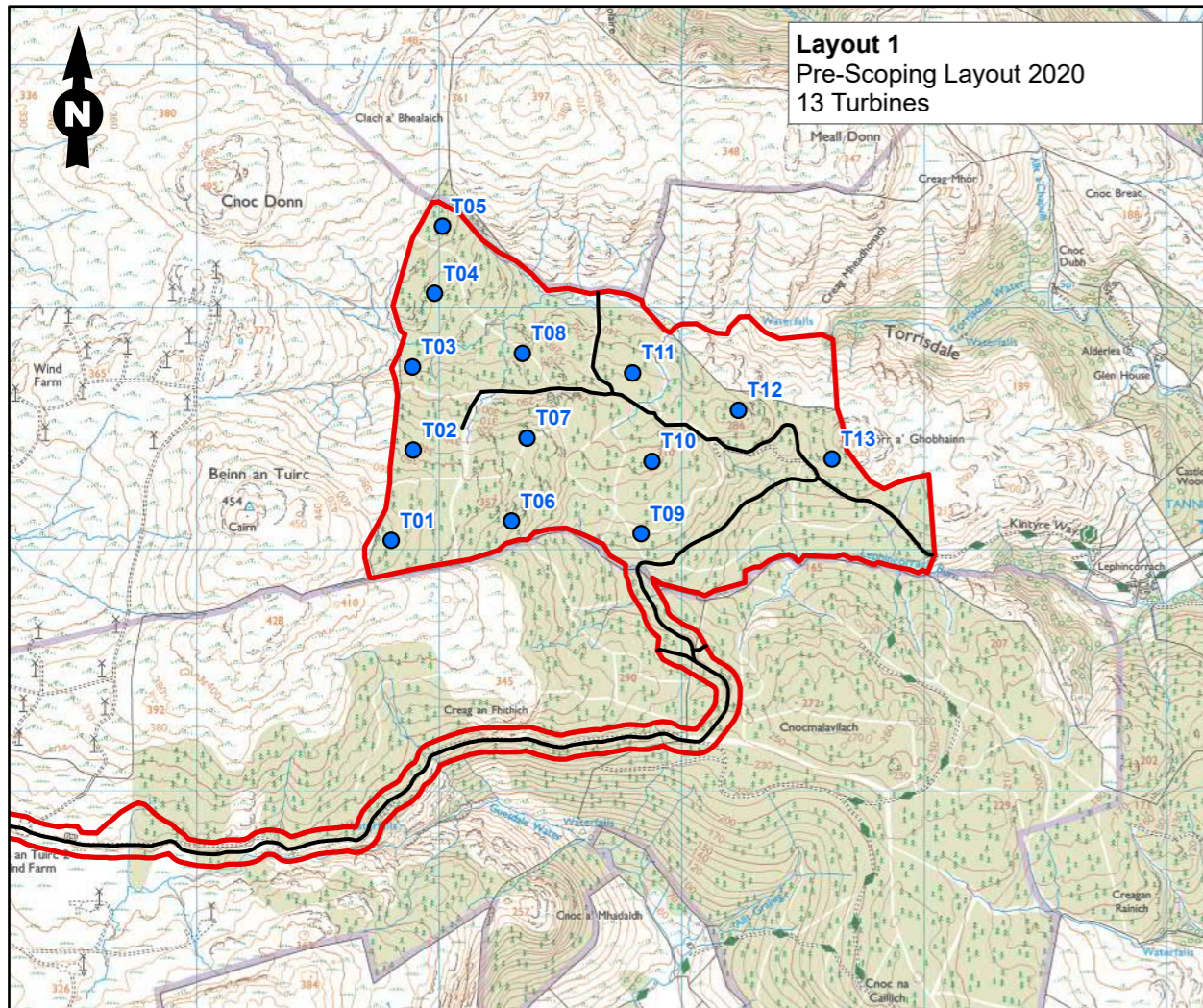
### Additional Areas

- Temporary Material Storage Areas
- Security Compound



<b>Figure Title</b>	
<b>Proposed Development</b>	
<b>Project Name</b>	
<b>West Torrisdale Wind Farm NTS</b>	
<b>Project Number</b>	<b>Figure No.</b>
1700003767	3
<b>Date</b>	<b>Prepared By</b>
October 2023	AB
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<b>ESB</b>	
	

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<b>Figure Title</b> Design Evolution	
<b>Project Name</b> West Torrissdale Wind Farm EIA Report	
<b>Project Number</b> 1700003767	<b>Figure No.</b> 4
<b>Date</b> October 2023	<b>Prepared By</b> AB
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<b>Client</b> ESB	

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Energy for  
generations