



Balmeanach Wind Farm

Design and Access Statement

August 2023

Balmeanach Wind Farm Limited

wind2



DESIGN AND ACCESS STATEMENT

Balmeanach Wind Farm
Prepared for: **Balmeanach Wind Farm Limited**

SLR Ref: 428.V11223.00001
Version No: Final
July 2023



BASIS OF REPORT

This document has been prepared by SLR with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Balmeanach Wind Farm Limited (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

CONTENTS

1.0	INTRODUCTION	1
2.0	SITE LOCATION	2
2.1	Site Selection	2
2.2	Site Description	2
2.3	Surrounding Area	2
2.4	Landscape Character	3
3.0	DESIGN POLICIES	5
3.1	National Planning Framework 4	5
3.2	West Highlands and Islands Local Development Plan (2019)	5
3.3	Highland-wide Local Development Plan (2012)	6
3.3.1	Onshore Wind Energy Supplementary Guidance (2016)	7
3.4	Onshore Wind Energy Supplementary Guidance	7
3.5	Siting and Designing Wind Farms in the Landscape	8
3.6	Planning Advice Note 68: Design Statements	8
3.7	Onshore Wind Policy Statement 2022	8
4.0	DESIGN PRINCIPLES	9
5.0	DESIGN EVOLUTION	12
5.1	Wind Turbine Layouts	12
5.2	Site Access	14
5.3	Site Tracks	14
5.4	Borrow Pits	14
5.5	Construction Compound	14
5.6	Substation Compound	15
6.0	PROPOSED DEVELOPMENT	16
7.0	ACCESS	17
7.1	Access to Site	17
7.2	Internal Access Tracks	17
7.3	Public Access – Pedestrian	17
7.4	Public Access – Vehicular	17
7.5	Turbine Access, Met Mast and Substation Compound	18

8.0 CONCLUSION.....	19
9.0 REFERENCES.....	20

FIGURES

Figure 1:	Site Location
Figure 2ai-ii:	Site Layout on OS Basemap
Figure 2bi-ii:	Site Layout on Aerial Photography
Figure 3:	Site Layout Evolution
Figure 4:	Predicted Visibility of Substation Compound (5m Max Height) From Balmeanach and Edinbane
Figure 5:	Proposed Paths Plan

1.0 Introduction

- 1 Balmeanach Wind Farm Limited (the Applicant) proposes to install and operate up to ten wind turbines with associated infrastructure (the Proposed Development) on land (the site) approximately 3km to the south of Edinbane, approximately 8km to the east of Dunvegan and approximately 7km to the north of Struan on the Isle of Skye (**Figure 1**). The Proposed Development would be located within The Highland Council (THC) area, centred on National Grid Reference (NGR) 133900, 846750¹ and would be known as Balmeanach Wind Farm.
- 2 The Proposed Development is defined as major in 'Town and Country Planning (Hierarchy of Development) (Scotland) Regulations' (2009). Circular 3: 2013 advises that applications for major development must be accompanied by a Design and Access Statement (DAS) in accordance with Regulation 13 of the Town and Country Planning (Development Management Procedures) (Scotland) Regulations 2013 and the provisions of the Town and Country Planning (Scotland) Act 1997 as amended by the Planning etc. (Scotland) Act 2006.
- 3 This DAS is submitted to accompany the application for planning permission which has been submitted by Balmeanach Wind Farm Limited for the Proposed Development. The DAS does not form part of the Environmental Impact Assessment Report (EIA Report), but the EIA Report should be reviewed in the context of the DAS.

¹ Centre point of proposed turbine array

2.0 Site Location

4 To understand the design of the Proposed Development, it is important to understand the location of the site, and its context. A site location plan is shown on **Figure 1**; and the site layout is shown on **Figure 2ai-ii** (on an OS basemap) and **Figure 2bi-ii** (on an aerial photograph).

2.1 Site Selection

5 The Proposed Development has been sited to ensure it:

- is not located within any national or local designations;
- maintains separation from National Scenic Areas;
- maintains separation from Wild Land Areas;
- is outside of Special Landscape Areas;
- is located with other similar wind developments; and
- has the opportunity to share existing access infrastructure with other developments.

2.2 Site Description

6 A detailed site description is contained within Chapter 2 of the EIA Report. The following paragraphs provide a general description of the site.

7 The site, which measures approximately 476ha, is located in the north west of the Isle of Skye. The proposed turbines would be located across two landownerships – primarily on the Bracadale Estate, on ground which forms part of the Balmeanach and Caroy Common Grazings, and partly on the Coishletter Estate (**Figure 1**).

8 Access to the site would be via the existing Ben Aketil Wind Farm access track from the A850, and then continuing south east via the consented Ben Sca Wind Farm Site access track onto the hillside.

9 The site lies within an upland landscape that is characterised by a series of smooth moorland slopes incised by small watercourses. The land is grazed by sheep and deer. To the south, an area of forestry covers the lower slopes of Beinn a' Chlèirich, to the east of the crofting township of Balmeanach.

10 For the main development area of the site, topography slopes to the south east from 283m AOD at the summit of Ben Sca down to the lower slopes at approximately 160m AOD. The site lies within a bowl-shape in the local landscape; and is therefore typically on lower ground than the surrounding existing wind farms.

2.3 Surrounding Area

11 The surrounding area is rural in nature, with land predominantly used for grazing and forestry. There is coniferous plantation to the north and west of the site (beyond the infrastructure footprint). There are several residential properties and crofts located to the south and south west of the site which extend down to the A863 and Loch Caroy; the closest (9 Balmeanach) being approximately 2.1km from the nearest proposed turbine (T8). The settlement of Edinbane is located approximately 3km to the north, Dunvegan approximately 8km to the west, Balmeanach approximately 2.5km² to the south and Struan approximately 7km to the south.

² Measured from the centre of the turbine array. The closest turbine to the settlement is 2.1km.

- 12 Directly to the east of the site is the operational Edinbane Wind Farm; and to the west of the site, lies the operational Ben Aketil Wind Farm and its Extension. The consented Ben Sca Wind Farm and its Extension will be located directly to the north west.

2.4 Landscape Character

- 13 The Proposed Development would be located in the Upland Sloping Moorland Landscape Character Type (LCT) defined in NatureScot's digital map-based Landscape Character Assessment (2019). South western parts of the site, although land where no development is proposed, extend into the Stepped Moorland LCT and Farmed and Settled Lowlands – Skye and Lochalsh LCT. The key characteristics of this area are described as follows:

- *“expansive moorland with gentle slopes and broad undulations above 50ms and sweeping, rounded summits up to 260m;*
- *mainly smooth, with small radiating burns cutting into lower slopes and weakly defined steps where peat is thinner overlying the stepped bedrock;*
- *occasional finer grain, ridge-like or hummocky undulations in surface deposits, found in places at the base of slopes;*
- *mainly used for grazing on rough grass land, and for forestry, which together form a large-scale patchwork of contrasting colours and textures;*
- *little settlement – occasional isolated modern farms;*
- *distance and scale are difficult to judge, except where roads, power lines or occasional wind turbines introduce scale;*
- *simple overall composition; and*
- *exposed and open, with extensive views to surrounding mountains, islands, coastlines, and the sea.”*

- 14 The Landscape Character Assessment details the Landscape Character Description as follows:

“Landform

The Upland Sloping Moorland Landscape Character Type occurs where underlying basalt steps have been blanketed and masked by eroded rock and peat deposits. It occurs in large expanses from above 50 metres up to around 260 metres. Located mainly on the lower slopes, inclined lava beds and foothills of adjoining Stepped Moorland, it occasionally extends over smooth, gently rounded summits. The topography is gently sloping and undulating with the lower slopes cut by small burns radiating from below the summits. The lower margins either merge gradually with Low Smooth Moorland, or contrast sharply with the human scale of adjoining settled landscapes.

The underlying landform combines with broad areas of landcover components to produce an overall smooth texture and simple landscape. Occasional weakly defined ridges are found where basalt steps are nearer the surface, particularly at high levels and at the transition to more stepped landscapes.

Landcover

The majority of land cover is rough, boggy grassland and heather, alongside a few large-scale plantations on well-drained margins and better soils. The dark colour and texture of conifers contrasts with smooth, muted colours of rough grass, forming a large scale patchwork which traverses slopes and summits. These areas form part of the modern outfield grazings in the crofting landscape. Land use is mainly rough grazing and forestry, and higher locations are used for wind energy generation, with two moderately-sized windfarms. The ground conditions and exposure have limited modern settlement to a

few isolated farms. There is evidence of abandoned agricultural uses on the lower margins next to settled landscapes, and in the ruined buildings, stone walls, lush abandoned shieling pastures and ridge and furrow marks.

Settlement

Population and environmental fluctuations in the past, from early prehistory onwards, led to the use of this land for permanent occupation; the remains of scattered mediaeval and later farmsteads and townships can be found across this Landscape Character Type, for example at the township of Glenostle in Skye. The presence of brochs and duns, particularly overlooking the valleys which form natural routes through this landscape, demonstrates the use and importance of the landscape during prehistory. Boundaries marked by dykes and modern fences are characteristic of the landscape type, as are also the remains of shieling buildings from the periods when the land was used for seasonal grazing.

Infrastructure is often routed across the landscape, due to it possessing fewer physical limitations than surrounding areas. However, roads are infrequent, tending to be straight or sweeping, and with fast traffic which discourages stopping. Some tracks penetrate the interior, but this area is rarely visited by walkers and there is a sense of remoteness and exposure on high road passes.

Perception

These landscapes have a relatively simple composition which contrasts in texture and relief with surrounding rugged, hilly terrain. With few trees or built elements to reduce the sense of openness, the landscape affords near and long-distance views of mountains, islands, coastlines, and sea. Groups of wind turbines occur as prominent man-made features in parts of this landscape and introduce an element of vertical scale which is otherwise largely absent. Where present, roads and power lines introduce strong visual lines, and indicate scale and distance.”

3.0 Design Policies

15 This section identifies the policy and guidance documents that have been considered in the layout and design process for the Proposed Development.

16 During a major period of the design process which has been ongoing since 2020, the most important national policy documents relating to the siting and design of the Proposed Development were National Planning Framework 3 (NPF3) and Scottish Planning Policy (SPP), along with the associated Planning Advice Notes (PANs), and the Scottish Government's Onshore Wind Turbines: Planning Advice (2014).

17 However, as of 13 February 2023, National Planning Framework 4 (NPF4) has been adopted which supersedes both SPP and NPF3 to form part of the Statutory Development Plan. Whilst NPF4 is now in force, SPP and NPF3 were considered during the design process, and hence are mentioned here, with acknowledgement that they are now revoked.

3.1 National Planning Framework 4

18 Considering Scotland as a whole, the NPF4 states that *"A large and rapid increase in electricity generation from renewable sources will be essential for Scotland to meet its net zero emissions targets."* This clearly establishes beyond the strengthened need for the continued development of renewable electricity generation, and by extension the development of onshore wind.

19 Within the spatial strategy, the NPF4 identifies that there will be significant climate challenges for the North and West Coastal Area (which includes the proposed site), stating that the *"island and coastal ecosystems, and the communities they support, are naturally more vulnerable to the effects of climate change, sea level rise and extreme events"*. If action is not taken, it concludes that these *"island and coastal communities could suffer disproportionately from the impacts of climate change"*.

20 Whilst these areas are considered more vulnerable to climate change, the NPF4 identifies that there are significant opportunities to capitalise on the natural assets of the area to significantly reduce greenhouse gas emissions through increased renewable energy generation. In addition to tackling climate change, the NPF4 identifies that such development also has the potential to bring opportunities to strengthen local communities, build community wealth and secure long-term sustainability in the region.

21 In terms of national planning policy, a key new policy is Policy 1: tackling the Climate and nature crises. This policy requires that *"significant weight will be given to the global climate and nature crises"* when considering all development proposals. The other main policy that is applicable within the context of the Proposed Development is Policy 11: Energy. Policy 11 part (a) makes clear that all types of renewable energy are supported in principle, with part (b) identifying the only exception to this policy support is wind farm developments in National Parks and National Scenic Areas. Accordingly, the Proposed Development, which is located outwith any such designations, draws policy support from Parts (a) and (b) of Policy 11.

3.2 West Highlands and Islands Local Development Plan (2019)

22 The West Highland and Islands Local Development Plan (abbreviated to WestPlan) (2019) focuses on where development should and should not occur in the West Highland and Islands area. The Plan area comprises Wester Ross, Skye and Lochalsh, Lochaber and a small, mountainous part of Badenoch. There are no site-specific policies relating to the site in WestPlan, however the Westplan Delivery Programme (March 2022) does refer to the Skye and Raasay Future (SARF) which is a shared statement of the values, ambition and priorities for partners to work together to improve outcomes for everyone

across the area. SARF do note in their Paper for Committee (August 2021) that there is an understanding that “to support the net zero transition for the region, upgrades to the electricity grid are required. The existing 132kV overhead line running from Fort Augustus to Ardmore in North Skye is essential to maintain security of supply to homes and businesses along its route, as well as to the Western Isles”. It is acknowledged that this upgrade is being progressed in order to connect renewable energy development such as the Proposed Development to the National Grid.

3.3 Highland-wide Local Development Plan (2012)

23 Policy 67 of the Highland-wide Local Development Plan (2012) (HwLDP) sets out THC’s support in principle for renewable energy developments; further supported by OWESG (2016 as amended) as set out in paragraph 19 of this statement. The first part of HwLDP Policy 67 states:

“Renewable energy development proposals should be well related to the source of the primary renewable resources that are needed for their operation. The council will also consider:

- *The contribution of the proposed development towards meeting renewable energy generation targets; and*
- *Any positive or negative effects it is likely to have on the local and national economy;*

and will assess proposals against other policies of the development plan the Highland Renewable Energy Strategy and Planning Guidelines and have regard to any other material considerations, including proposals able to demonstrate significant benefits including by making effective use of existing and proposed infrastructure of facilities.”

24 The second part of Policy 67 sets out a number of criteria that must be addressed by wind farm applications. The policy states:

“Subject to balancing with these considerations and taking into account any mitigation measures to be included, the Council will support proposals where it is satisfied that they are located, sited and designed such that they will not be significantly detrimental overall, either individually or cumulatively with other developments (see Glossary), having regard in particular to any significant effects on the following:

- *natural, built and cultural heritage features;*
- *species and habitats;*
- *visual impact on the landscape character of the surrounding area (the design and location of the proposal should reflect the scale and character of the landscape and seek to minimise landscape and visual impact, subject to any other considerations);*
- *amenity at sensitive locations, including residential properties, work places and recognised visitor sites (in or outwith a settlement boundary);*
- *the safety and amenity of any regularly occupied buildings and the grounds that they occupy- having regard to visual intrusion or the likely effect of noise generation and, in the case of wind energy proposals, ice throw in winter conditions, shadow flicker or shadow throw;*
- *ground water, surface water (including water supply), aquatic ecosystems and fisheries;*
- *the safe use of airport, defence or emergency service operations, including flight activity, navigation and surveillance systems and associated infrastructure, or on aircraft flight paths or MoD low-flying areas;*
- *other communications installations or the quality of radio or TV reception;*

- *the amenity of users of any Core Path or other established public access for walking, cycling or horse riding;*
- *tourism and recreation interests;*
- *land and water-based traffic and transport interests.”*

25 Details as to how the design process for the Proposed Development has sought to address the criteria of HwLDP Policy 67 are provided in sections 4 and 5 of this DAS.

3.3.1 Onshore Wind Energy Supplementary Guidance (2016)

26 At the time of project identification and development, THC’s Onshore Wind Energy Supplementary Guidance (OWESG) (2016) was in force which identifies landscapes which, in principle, have the capacity to accommodate wind turbines. OWESG identifies the majority of the site as a Group 2 area³, which is an “area of significant protection”, due to the site being located within areas of Carbon Rich Soils, deep peat and priority peatland habitat (CPP). However, this classification does not necessarily preclude wind farm development and THC note that further consideration is required to determine whether any significant environmental effects can be sustainably mitigated through careful siting, design, or other measures. A small part of the site (between proposed Turbines 9 and 10) is classified as Group 3³ (areas with potential for wind farm development).

3.4 Onshore Wind Energy Supplementary Guidance

27 OWESG (2016 as amended) notes that the remaining capacity for large scale wind development within the Highlands “*should be focused around existing clusters that are generally found in rolling uplands, rugged massif and rocky moorland Landscape Character Types*”, *to limit any additional cumulative effect and increase the potential for future development to share existing site infrastructure*”.

28 In terms of landscape and visual effects OWESG (2016 as amended) notes the following:

- paragraph 4.10: *“all proposals should seek to avoid significant adverse landscape and visual effects individually and cumulatively, taking into account other built and permitted proposals as well as valid planning applications not yet determined (the weight apportioned to each will reflect their position in the planning process)”*;
- paragraph 4.11:
“The following key aspects should be considered in the assessment:
 - *“National Parks, National Scenic Areas and mapped wild land areas;*
 - *Special Landscape Areas (including their citations);*
 - *The capacity of the local landscape character (as defined within a Landscape Character Assessment) to accommodate the proposal;*
 - *2km from residential buildings and boundaries of settlements (mapped, where relevant)**Important public views (this includes considering impacts to popular viewpoints, the adopted road network, key and designated tourist routes, public footpaths, core paths and other recognised visitor locations)”*; and
- paragraphs 4.16 and 4.17 define criteria which set out key landscape and visual aspects that the Highland Council will use as a framework and focus for assessing proposals.

³ Group 2 and 3 areas as defined in SPP (2014), now revoked

3.5 Siting and Designing Wind Farms in the Landscape

- 29 NatureScot (formerly SNH) has produced guidance entitled ‘Siting and Designing Windfarms in the Landscape’, originally published in 2009 but updated in 2014 and 2017. NatureScot believes that good siting and design of wind farms is important for all parties involved, helping to maximise the landscape capacity to absorb development by producing schemes which are appropriate to a landscape whilst delivering Scottish renewables targets.
- 30 The content of the guidance focuses on the landscape and visual impact of wind farms, wind turbine design and layout, wind farm siting and design, and designing in landscapes with multiple wind farms. Guidance is provided on the appropriate turbine form, size, scale, layout and on siting and design of wind farms in relation to landscape character, landscapes of scenic value, landscape pattern, landform, perspective, and focal features. This guidance document has therefore informed the content of the design strategy for the Proposed Development, which outlines the site characteristics, the design principles, and the proposed design solution for the development.

3.6 Planning Advice Note 68: Design Statements

- 31 The DAS has been prepared in accordance with the guidance set out in Planning Advice Note (PAN) 68: Design Statements (2003). PAN 68 focuses on design statements, their purpose, use and presentation to consider and set out the design principles which determine the design and layout of a development proposal. The content of this DAS covers the main issues which should be covered in a design statement, as recommended in PAN 68, to provide a clear and logical design philosophy for the Proposed Development. This approach provides a clear explanation of the design of the Proposed Development in a structured way and provides an opportunity to demonstrate what has been done to appraise the context, and how the design has taken account of it sensitively.

3.7 Onshore Wind Policy Statement 2022

- 32 The Scottish Governments ‘Onshore Wind: Policy Statement 2022’ (OWPS ‘22) was published in December 2022. The OWPS clarifies the strengthened Scottish Government position on the construction of new wind farms, stating: *“The only areas where wind energy is not supported are National Parks and National Scenic Areas. Outside of these areas, the criteria for assessing proposals have been updated, including stronger weight being afforded to the contribution of the development to the climate emergency, as well as community benefits”*.
- 33 In terms of design principles, the OWPS highlights the necessity for taller turbines in section 3.4.6 stating *“...What would previously have been considered ‘taller’ turbines are now more common and must continue to be deployed in appropriate locations...”* whilst in section 3.4.7 it reiterates why these, taller, turbines are required *“Taller turbines have a higher installed capacity which results in the need for fewer turbines per site”*.

4.0 Design Principles

- 34 The layout and design of the Proposed Development was considered as part of an iterative design process aimed at reducing the potential environmental effects of the Proposed Development whilst considering other technical and commercial constraints.
- 35 The design of any wind farm is driven by the key objective of positioning turbines so that they capture the maximum energy possible within a suitable area, further informed by environmental and technical constraints. The key constraints which were considered during the design process for the Proposed Development included:
- topography and ground conditions (particularly in relation to peat);
 - adjacent wind development;
 - identified landscape and visual constraints;
 - proximity to residential receptors (with regards to visual amenity, shadow flicker and noise);
 - presence of ornithology, protected habitats and species;
 - presence of watercourses, private water supplies and related infrastructure;
 - presence of cultural heritage features;
 - aviation and radar constraints;
 - recreation resource;
 - forestry; and
 - fixed communications links.
- 36 The findings of the technical and environmental studies undertaken for the EIA were used to inform the design of the Proposed Development, and hence achieved a 'best fit' within the environment of the site. Where potentially significant effects were identified, efforts were made to avoid these through evolving the design of the Proposed Development, 'embedding' mitigation into the design. 'Embedded mitigation' includes but is not limited to:
- sensitive siting of the proposed infrastructure incorporating appropriate buffer distances from environmental receptors (including nearby residential properties) to avoid or reduce effects;
 - considering the size and scale of the Proposed Development appropriate for the location;
 - considering the appearance, finish and colour of wind turbines and the control building in accordance with NatureScot Guidance 'Siting and Designing Wind Farms in the Landscape', V3 (2017);
 - design of the tracks to minimise cut and fill, reducing landscape and visual effects in addition to reducing costs;
 - inclusion and design of borrow pits to minimise the amount of the material required to be imported to site; and
 - potential for up to 50m micrositing of infrastructure during construction to ensure the best possible
 - location is chosen based on site investigations.
- 37 Throughout the constraints led design process, wind and yield analysis was undertaken to ensure changes made to layouts did not adversely affect the output of the Proposed Development. The

average prevailing wind direction is from the south west, with chosen site layout sitting perpendicular to this wind direction. This creates the most efficient layout possible on the site, whilst also being the favoured option from other technical perspectives.

38 Throughout the design evolution of the Proposed Development layout, a key driver was the consideration of potential landscape and visual effects on receptors and how the Proposed Development would relate to the existing landscape character. A feasibility study including a landscape and visual appraisal was completed, which informed the design presented during the pre-application consultation undertaken with THC in March 2021.

39 Different layouts were examined from key design viewpoints to assess and optimise the number, size and layout of the proposed turbines in relation to the landform of the site and surrounds as well as adjacent wind farm development. In response to this, turbines that were initially proposed in more elevated parts of the site were removed.

40 The proposals presented at the pre-application meeting in March 2021 comprised a layout that was broadly consistent with the southern part of Edinbane Wind Farm. THC expressed reservations about this layout rationale in the pre-application advice received since the general wind turbine development pattern in the area (of Ben Aketil Wind Farm and Extension and the consented Ben Sca Wind Farm and Extension) follows a linear form along ridgelines.

41 Subsequently, various layout options were explored and discussed with THC at a design workshop in July 2021, with further follow up consultation in September 2021. Key feedback from THC included:

- THC's strategy is to continue focusing wind turbine development towards this area of Skye;
- the layouts presented were a significant improvement on the layout presented at pre-application;
- recommend removal of turbines close to Beinn a' Chlàirich, to the west of An Cleireach SSSI, due to their prominence from the south (particularly VP1: A863/Road to Feorlig);
- containment of the development to lower slopes and lower ground or attempt to create a more compact scheme and fit in with the character of the area, removing the 'step over' of the landform to the south east (Beinn a' Chlàirich), as also referred to above;
- explore potential available land to the north, outwith the Bracadale Estate, that could be utilised to shift development from the south and away from the A863 and the settlement of Balmeanach to provide an optimal layout not defined by land ownership boundaries;
- view from VP7: Greshornish is important as it would fill the gap between Edinbane and Ben Sca Wind Farms; and
- view from VP11: Macleod's Table North is important to maintain and fit with the existing pattern of development.

42 How each of these comments has been incorporated into the final design is provided in section 5 of this statement.

43 Where possible, proposed excavation for access tracks and other infrastructure has been minimised. The location of the substation compound and construction compound has been reviewed to minimise landscape and visual effects. In order to position the substation in an area which would not be visible to the local communities of Balmeanach or Edinbane, a ZTV was generated to work out where within the site a building 5m high would not be seen. This principle, as shown on **Figure 4** clearly shows that the substation would be hidden from view from these local settlements.

44 The final proposed layout has been determined by taking into consideration the feedback received through the pre-application consultation process, maximising project benefits and efficiencies

consistent with the grid capacity available, increasing renewable energy generation and offsetting of CO₂ carbon emissions working towards net-zero.

5.0 Design Evolution

- 45 The evolution of the design and layout of the Proposed Development was an iterative constraint-led process driven by the technical and environmental studies undertaken for the EIA. The design optimisation process was iterative, involving review of multiple layouts and related wirelines from key landscape and visual receptor locations in the study area, and adjustment to turbine locations to minimise potentially adverse landscape and visual impacts insofar as possible, whilst also taking into consideration the energy generation, particularly seeking to maintain wake loss expectations, other environmental, technical and economic considerations.
- 46 Several different turbine tip heights were explored during the design process ranging from 135m to 149.9m with rotor diameters from 115m to 138m.

5.1 Wind Turbine Layouts

- 47 The initial potential development area (for wind turbines) within the site boundary was established using constraints mapping. Constraints such as deep peat (>1.5m depth), steep slopes (>12%), watercourses and fixed communications links were mapped as hard constraints, whereas others such as shallower peat depths between 1m – 1.5m were mapped as soft constraints. This constraints mapping was used to identify the areas within the site which may be suitable for wind turbines.
- 48 Potential landscape and visual effects have been considered throughout the design evolution process. Several layouts were considered during the design process, with the layout evolving to respond to landscape and visual constraints such as key views from Edinbane, Roag and Greshornish. The key design viewpoints (VPs), which focussed on areas of greatest visibility closer to the site, residential receptors and designated landscapes closer to the site, were: VP1 (A863), VP2 (Edinbane Top Road), VP3 (A863), VP4 (Roag), VP5 (A850), VP6 (B884), VP7 (Greshornish) and VP11 (Macleod’s Table). Wider landscape character and visual sensitivities have also been considered in the design process including potential effects on landscape designations, properties, settlements and key routes in the area.
- 49 Six of the key design iterations for the Proposed Development are shown on **Figure 3** and detailed in **Table 1**.

Table 1: Design Iterations

Layout	Stage	No. of Turbines	Description
A	Feasibility Layout	12	Generated during the feasibility stage. Turbines were located on the slopes on the south east side of Ben Sca and Ben Aketil summits ranging from approximately 155m AOD to 260m AOD.
B	Pre-Application Layout	10	Discussed with THC and NatureScot at the Pre-Application Consultation Meeting in March 2021. Turbines were relocated away from the top of the slope ridgeline (of Ben Sca and Ben Aketil) due to greater prominence and relationship with other development, reducing the Proposed Development to 10 turbines.
C	Option Review	9	Generated as one preferred option during a detailed optioneering process subsequently discussed with THC at the design meeting in July 2021 with follow up in September 2021.

Layout	Stage	No. of Turbines	Description
			Turbine 10 removed and Turbine 8 (of Layout B) relocated in the north of the site on the Coishletter Estate in response to THC landscape and visual comments. THC noted that from VP1 the varying hub heights was more recessive for this layout than other options at this time. This layout was considered by THC to be the most preferable from VP1, VP3 and VP4 and further recommend the removal or relocation of Turbines 5 and 9 focusing development further north away from the A863 and settlement of Balmeanach, minimising the 'step over' of landform (Beinn a' Chlèirich) to the south west.
D	Scoping Layout	10	Presented in the EIA Scoping Report August 2022. Further identified telecommunications link constraints and consideration of landscape and visual effects relocated Turbine 9 (from Layout C) from the south near Beinn a' Chlèirich to the north of the site on the Coishletter Estate. In order to maximise the available land and capacity of the site, a tenth turbine was considered feasible.
E	Design Chill Layout	10	Almost finalised layout to be used as the basis for the phase 2 peat probing around proposed infrastructure. Turbine spacing was optimised in line with all known on the ground constraints. All ten turbines from Layout D were micrositied to produce the most efficient yield. The phase 1 peat data and topography was reviewed to ensure that all proposed turbine locations were located on the most suitable areas of the site. The locations and orientation of possible infrastructure including crane hardstanding, laydown areas, construction compound and substation were identified.
F	Final Layout	10	Minor refinement to locations of turbines and infrastructure based on the results of the hydrology survey, phase 2 peat probing and peat slide risk assessment. This final layout addresses the comments received from THC as follows: <ul style="list-style-type: none"> • the Proposed Development is located within an area already characterised by wind farms; • turbines would be located away from Beinn a' Chlèirich, containing the Proposed Development to the north and not creating a 'step-over' of the landform; • a layout balancing the environmental and technical constraints with energy yield has been created not defined by land ownership boundaries; • containment of the Proposed Development further north reduces the potential prominence of the turbines from the south – particularly from VP1: A863, VP3: A863 and VP4: Roag; and • the proposed turbines would be balanced from the view from VP7: Greshornish and VP11: Macleods Table in the context of the baseline wind farm developments.

5.2 Site Access

50 The site would be accessed from the A850, utilising a site entrance that was built for Ben Aketil Wind Farm. This is also the site entrance to be used for the consented Ben Sca Wind Farm and Extension. Access would then be gained onto the site via the existing Ben Aketil access track and via the consented Be Sca Wind Farm access track.

51 Use of this site entrance as well as a section of the existing and consented access tracks would minimise the amount of upgraded or new track required to be built for the Proposed Development.

5.3 Site Tracks

52 The onsite access tracks have been carefully designed to avoid areas of deep peat, potential peat slide risk and minimise cut and fill requirements as far as possible in order to reduce the amount of ground disturbance, amount of material required for construction, loss of sensitive habitats and landscape and visual effects, particularly during construction.

53 All access tracks have been designed to follow a route which does not exceed a gradient of 12% (however noting that up to 14% is still permissible). This gradient would enable the safe delivery of turbine components and associated parts avoiding the steepest slopes of the site.

5.4 Borrow Pits

54 Borrow pits would be required as a source of rock to be used in the construction of the tracks, hardstandings and foundations. On site borrow pits have been sought in order to reduce the need to transport large quantities of aggregate across Skye, and search area locations for the borrow pits have been identified based upon a review of geological mapping and site reconnaissance by a geological specialist. The location of each was considered and refined with respect to the site infrastructure and environmental constraints.

55 During design optimisation, the locations of infrastructure and track design was refined in order to minimise the amount of earthworks and cut and fill required to construct the Proposed Development. The scale of the borrow pit search areas were selected to meet the estimated volume of rock required in the construction of the tracks, hardstandings and foundations. It is anticipated that the search areas could provide more aggregate that would be required.

56 Further intrusive geotechnical investigation would be carried out to identify which of the three borrow pit search areas would yield the required quality of rock for each aspect of the infrastructure. It is unlikely that all three borrow pit search areas would be needed, but this gives flexibility in case there is low yield identified at any location.

5.5 Construction Compound

57 The construction compound would be located to the north of the site, close the end of the Ben Sca Wind Farm at NGR 133405, 847515. This location is considered appropriate as it:

- has appropriate topography;
- is located in an area of shallow peat and low peat slide risk;
- would not be visible from the residential properties in Balmeanach or Edinbane (Figure 4); and
- avoids sensitive habitat areas.

5.6 Substation Compound

58 The proposed substation compound would be located adjacent to the construction compound in the north of the site, at NGR 133350, 847485. This location is considered appropriate as it:

- has appropriate topography;
- is located in an area of shallow peat and low peat slide risk;
- avoids sensitive habitat areas; and
- would not be visible from the residential properties in Balmeanach or Edinbane (**Figure 4**).

59 The control building, within the substation compound, would be located greater than topple distance from the proposed turbines. The internal site grid connection cables would be undergrounded within the site from each turbine to the control building, therefore avoiding visual impact.

6.0 Proposed Development

60 The Proposed Development is described in detail in Chapter 3 of the EIA Report. An Outline Construction and Environmental Management Plan (CEMP) is contained in the EIA report as Technical Appendix 3.1. The layout of the Proposed Development is shown on **Figures 2ai-ii/2bi-ii**. In summary, the Proposed Development would comprise:

- 10 variable pitch (three bladed) wind turbines, each with a maximum blade tip height of up to 149.9m and maximum rotor diameter of up to 138m;
- turbine foundations (up to 25m diameter) and a crane hardstanding area which includes areas for blade, tower and nacelle storage (approximately 3,350m²) at each wind turbine;
- a lattice met mast up to 83.5m height, including foundation and hardstanding area;
- up to 9.4km of new onsite access track and associated drainage with a typical 5m running width (wider on bends) and nine turning heads;
- underground cabling and electrical infrastructure along access tracks to connect the turbine locations, and the onsite electrical substation;
- one onsite substation which would accommodate 33KV Switchgear to collect electricity from different parts of the site. The substation compound would have an area of 35m x 30m and would include a control and metering building;
- search area for up to four borrow pits (covering approximately 48,900m²);
- a construction compound (100m x 80m); and
- clearance of 77.75ha of conifer forest for Habitat Management purposes (Technical Appendix 8.5: Outline Habitat Management Plan).

61 Based upon the proposed maximum turbine tip height it is anticipated that the installed nominal capacity of each turbine would be approximately 4.5MW, with an estimated total generation capacity of 45MW.

62 Grid connection is dependent on transmission upgrade and the connection point will be the new Edinbane Grid Supply Point (GSP), to the south east of the site, which is proposed to be delivered as part of the grid upgrade. Significant upgrades to the electricity grid from Fort Augustus to the Isle of Skye (known as the Skye Reinforcement Project, Energy Consents Unit Application Ref: ECU00003395) are expected to be completed by the end of 2025, which will allow the Proposed Development to be connected to the grid in 2027. The grid connection route is considered to be commercially and technically feasible.

7.0 Access

7.1 Access to Site

- 63 It is proposed that access to the site would be via the existing Ben Aketil Wind Farm access track from the A850, and then via the consented proposed Ben Sca Wind Farm access track.
- 64 The proposed abnormal load route required to transport turbine components to the site would begin at the Port Kyle of Lochalsh and end on the A850 (at the site entrance). The approach to the site would be taken via the A87 trunk road and the A850-Dunvegan Road. A similar route has previously been employed for construction of the neighbouring Ben Aketil Wind Farm.

7.2 Internal Access Tracks

- 65 Up to 9.4km of new onsite access tracks and associated drainage with a typical 5m running width (wider on bends) would be required. Site visits have confirmed the presence of peat, of variable condition and depth across the site area. Where possible the turbines and tracks have been positioned to avoid areas of deepest peat. It is not considered appropriate to install floating tracks on this site due to the gradient of the slopes being greater than 5% over much of the site. The track formation would be by cut and fill or by a cut operation where there is a slope. Where the peat layer is more than 1m in depth and where there is a side slope the peat would be removed to an appropriate horizon. The proposed routes for the site access tracks have been designed to avoid watercourse crossings.
- 66 1.8km of the existing Ben Aketil access track and 2.3km of consented Ben Sca access track would be used to access the proposed turbines and infrastructure.
- 67 The access tracks would be retained throughout the operational life of the Proposed Development to enable maintenance of the turbines and replacement of any turbine components.

7.3 Public Access – Pedestrian

- 68 Public access to the Proposed Development would be restricted during the construction of the wind farm for obvious health and safety reasons due to construction activities, the movement of heavy plant and the erection of turbines. EIA Report Chapter 14 concludes that the impact on users would be minor and not significant.
- 2.1 When operational, however, while no formal access arrangements would be implemented, members of the public would be able to access the site on foot and make use of the access tracks under the provisions of the Land Reform Act. There is potential for linkages to be formed between the proposed tracks and other routes in the area, enhancing the commitments made by Ben Sca Wind Farm by incorporating the proposed tracks into the walking routes and connecting to the Edinbane Wind Farm access track (**Figure 5**). This would benefit walkers by creating a 'loop' emanating from the village of Edinbane rather than various linear tracks.
- 69 During periods of maintenance, access by the public could be restricted depending on the nature of the maintenance activity.

7.4 Public Access – Vehicular

- 70 Once the Proposed Development is operational (if consent granted) vehicular access will be limited to individuals directly involved in the maintenance of the wind farm, the landowners and their agents, and emergency vehicles.

7.5 Turbine Access, Met Mast and Substation Compound

- 71 It is not proposed that there would be public access to the proposed wind turbines, met mast or substation compound. Due to health and safety reasons access to these areas will be restricted to employees of, and contractors appointed by Balmeanach Wind Farm Limited.

8.0 Conclusion

- 72 The proposed layout has evolved through an iterative EIA and design process, constraints identified throughout the EIA process were avoided, and potential impacts of the Proposed Development avoided or reduced by the design. EIA studies were used to achieve a 'best fit' within the environment of the site. Access to the site would largely use existing and consented tracks in order to minimise construction work and environmental impacts.
- 73 The final layout comprises ten wind turbines. This is considered to be the most appropriate number of turbines to be accommodated by the site. The tip height, assessed up to 149.9m for the purposes of the EIA, is higher than the surrounding wind farms of Edinbane and Ben Aketil, however this means that the energy yield of the Proposed Development would be substantially greater on an output per turbine basis, contributing up to 45MW towards net zero targets.

9.0 References

- NatureScot (2017) Siting and Designing Wind Farms in the Landscape Version 3.
- Scottish Government (2003). PAN 68 - Design Statements.
- Scottish Government (2014). National Planning Policy 3 (NPF3).
- Scottish Government (2014). Scottish Planning Policy.
- Scottish Government (2023). National Planning Policy 4 (NPF4).
- THC (2012). Highland-wide Local Development Plan 2012.
- THC (2016). Onshore Wind Energy Supplementary Guidance 2016; amended 2017 with Addendum Supplementary Guidance: 'Part 2b', December 2017
- THC (2019). West Highland and Islands Local Development Plan (WestPlan).
- THC (2022). Westplan Delivery Programme (March 2022).
- Skye and Raasay Future (SARF) (2021). Paper for Committee (August 2021).
- Town and Country Planning (Scotland) Act 1997 (as amended).

120000

130000

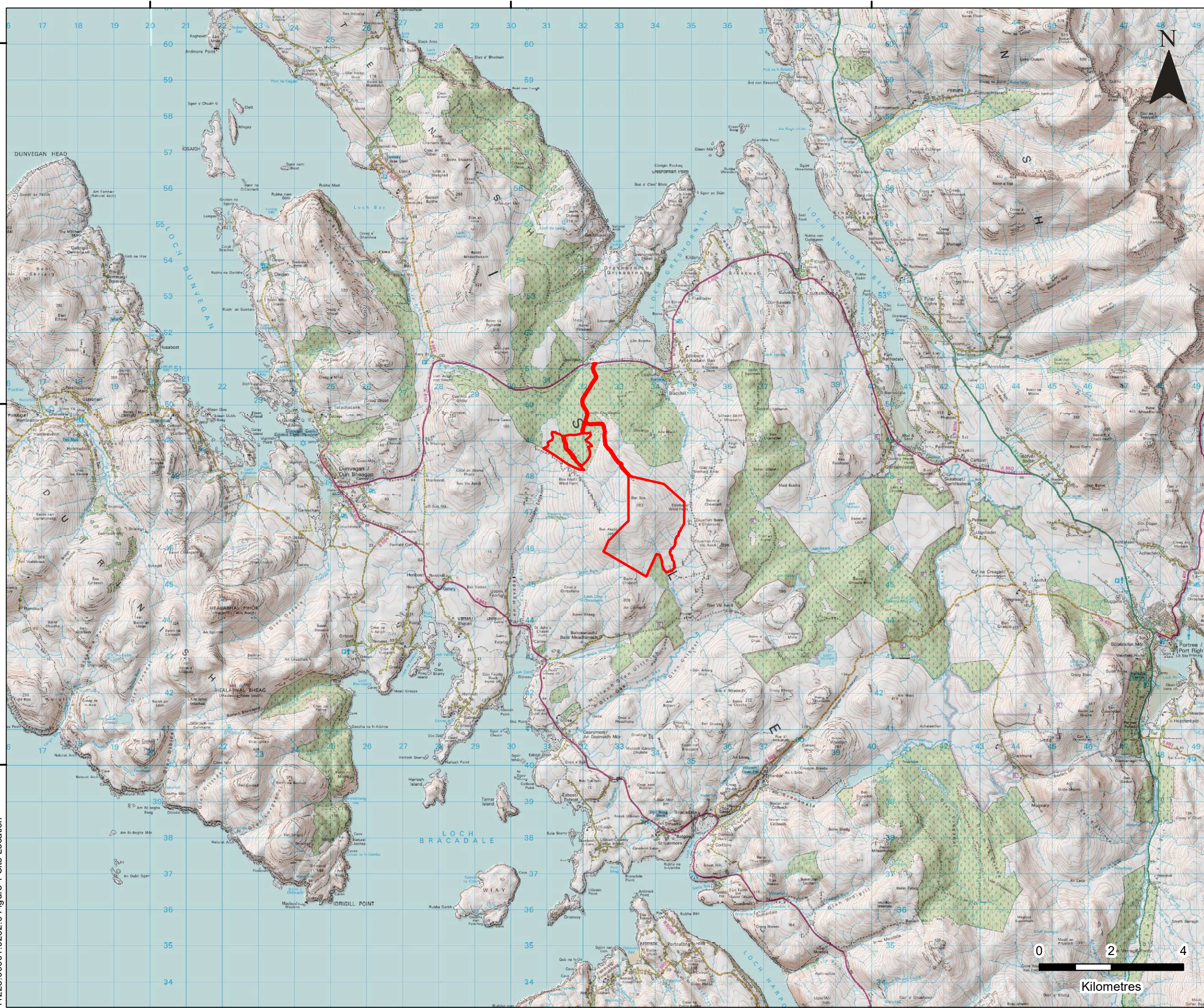
140000

860000

850000

840000

11223.00001.0262.0 Figure 1 Site Location



LEGEND

 Application Site Boundary



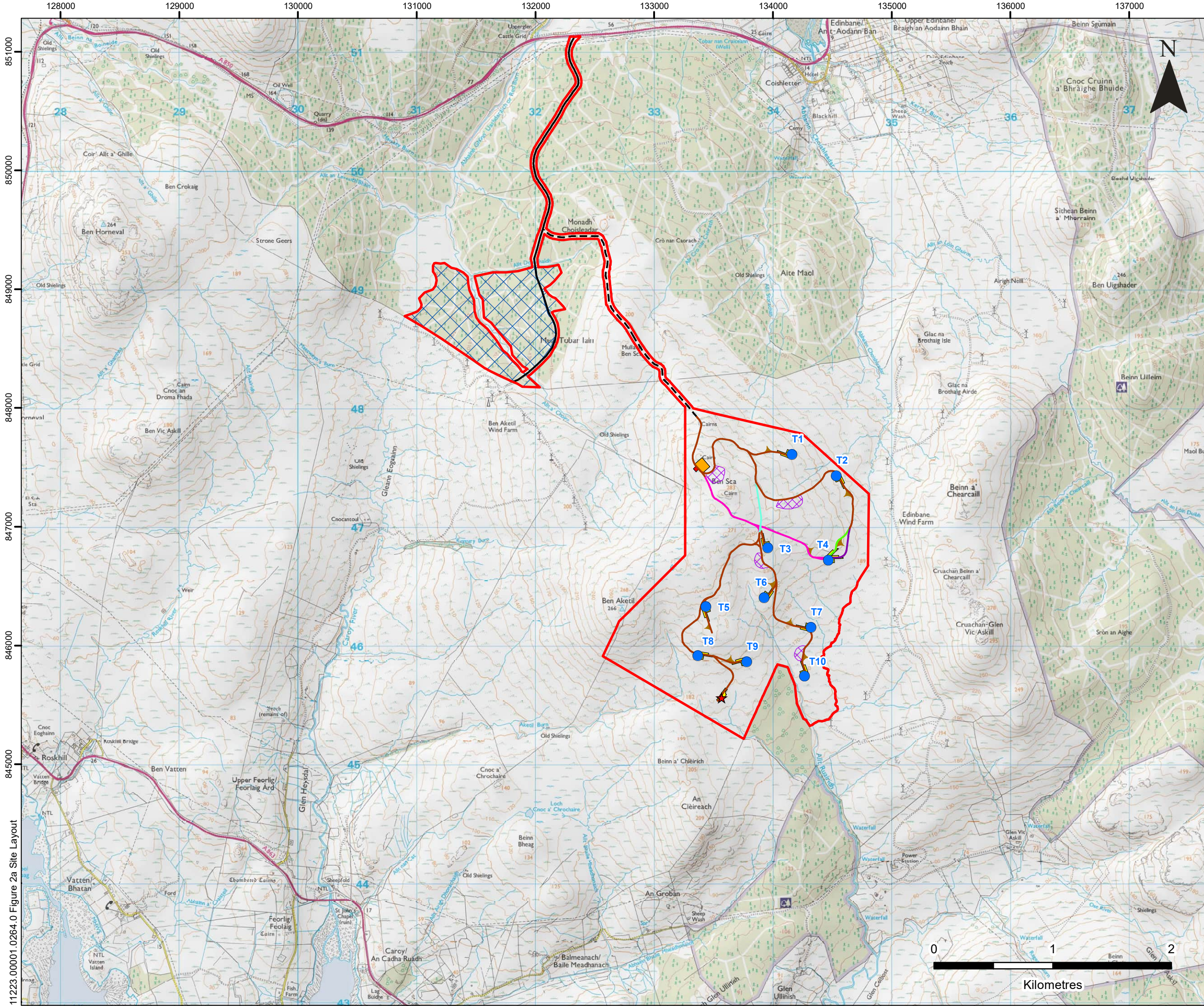
BALMEANACH WIND FARM LIMITED

 4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM
DESIGN AND ACCESS STATEMENT
SITE LOCATION
FIGURE 1

Scale 1:100,000 @ A3 Date JULY 2023





LEGEND

- Application Site Boundary
- Proposed Turbine Location
- ★ Proposed Permanent Met Mast
- Proposed Crane Hardstanding
- Proposed Construction Compound
- Proposed Substation
- Proposed Turning Head
- Potential Borrow Pit
- Proposed Habitat Management Area
- Existing Access Track
- Consented Access Track

Proposed Track Alignment

- Proposed
- Proposed Option A
- Proposed Option A1
- Proposed Option A2
- Proposed Option B



**BALMEANACH
WIND FARM LIMITED**

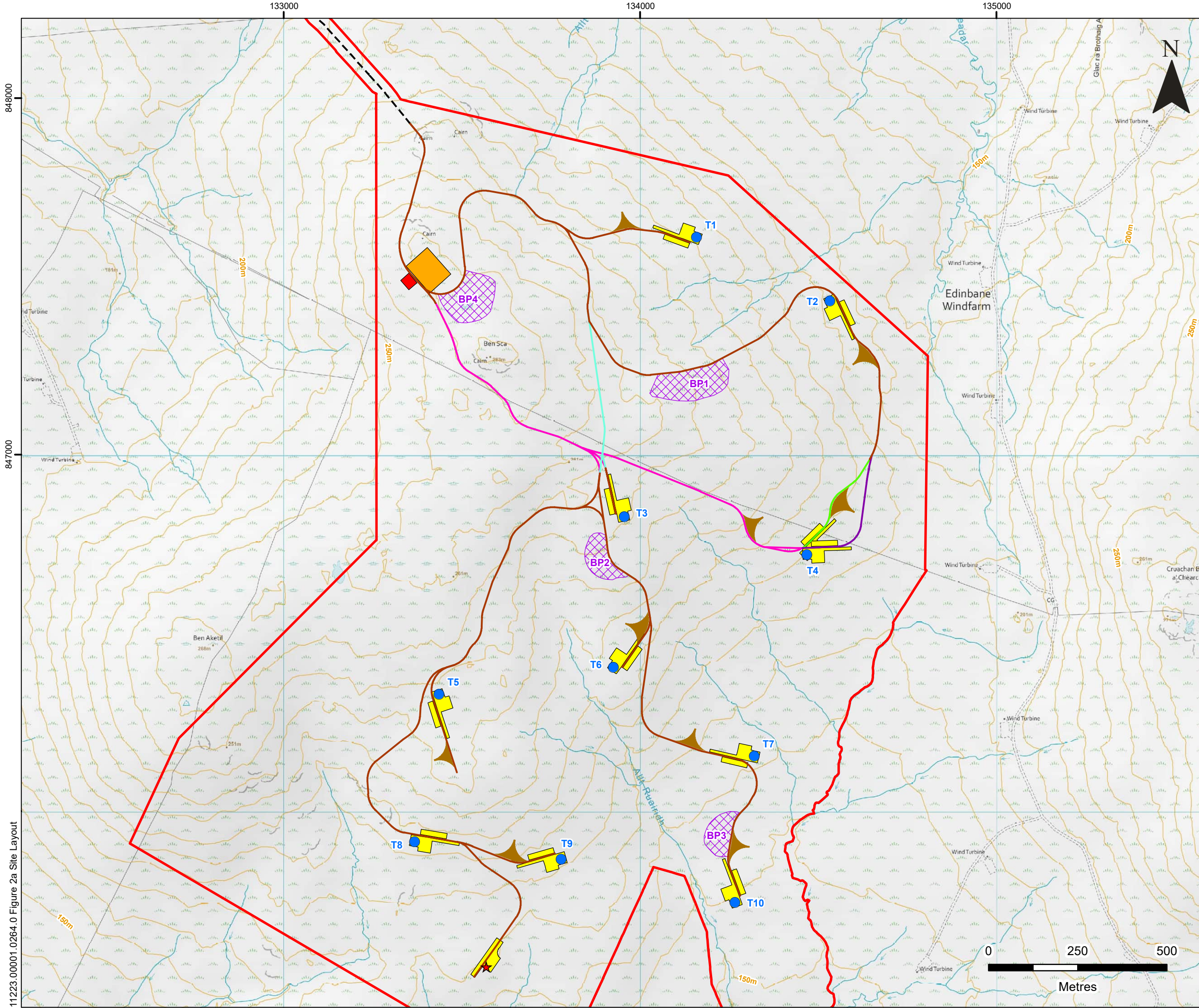
SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM
DESIGN AND ACCESS STATEMENT
SITE LAYOUT PLAN
FIGURE 2a i

Scale 1:30,000 @ A3 Date JULY 2023



11223.00001.0264.0 Figure 2a Site Layout

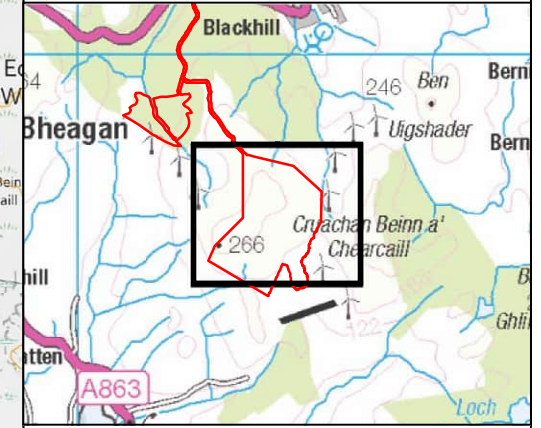


LEGEND

- Application Site Boundary
- Proposed Turbine Location
- ★ Proposed Permanent Met Mast
- Proposed Crane Hardstanding
- Proposed Construction Compound
- Proposed Substation
- Proposed Turning Head
- Potential Borrow Pit
- Consented Access Track

Proposed Track Alignment

- Proposed
- Proposed Option A
- Proposed Option A1
- Proposed Option A2
- Proposed Option B



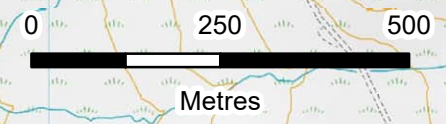
**BALMEANACH
WIND FARM LIMITED**

SLR

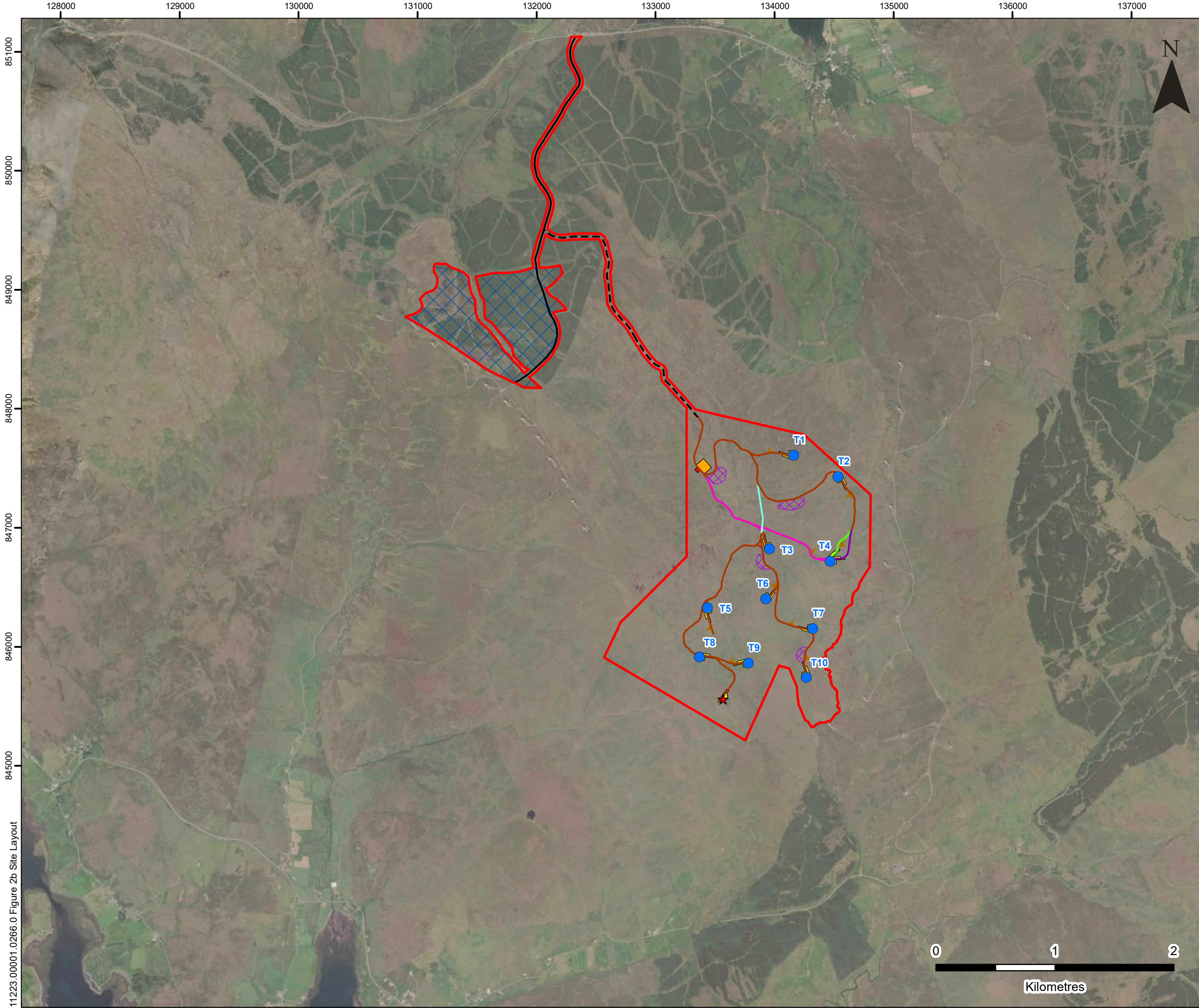
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM
DESIGN AND ACCESS STATEMENT
SITE LAYOUT PLAN
FIGURE 2a ii

Scale 1:10,000 @ A3 Date JULY 2023



11223.00001.0264.0 Figure 2a Site Layout

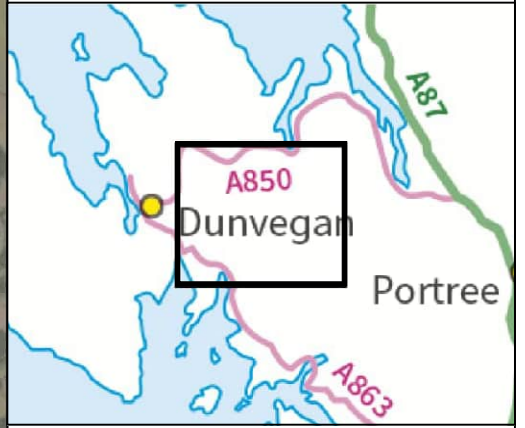


LEGEND

- Application Site Boundary
- Proposed Turbine Location
- ★ Proposed Permanent Met Mast
- Proposed Crane Hardstanding
- Proposed Construction Compound
- Proposed Substation
- Proposed Turning Head
- Potential Borrow Pit
- Proposed Habitat Management Area
- Existing Access Track
- Consented Access Track

Proposed Track Alignment

- Proposed
- Proposed Option A
- Proposed Option A1
- Proposed Option A2
- Proposed Option B

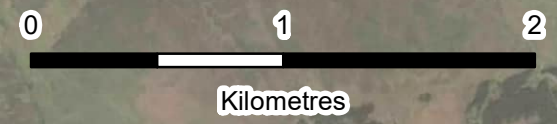


**BALMEANACH
WIND FARM LIMITED**

SLR 4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM
DESIGN AND ACCESS STATEMENT
SITE LAYOUT PLAN
FIGURE 2b i

Scale 1:30,000 @ A3 Date JULY 2023



11223.00001.0266.0 Figure 2b Site Layout

133000

134000

135000

848000

847000

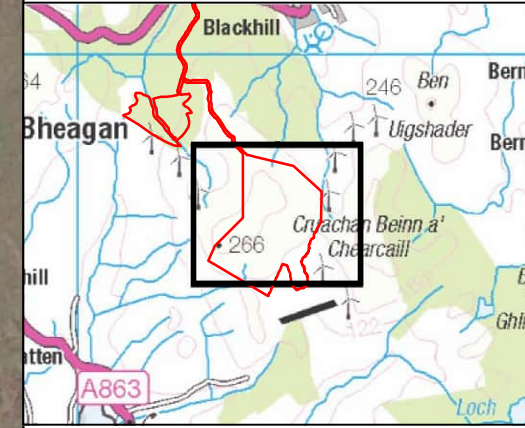
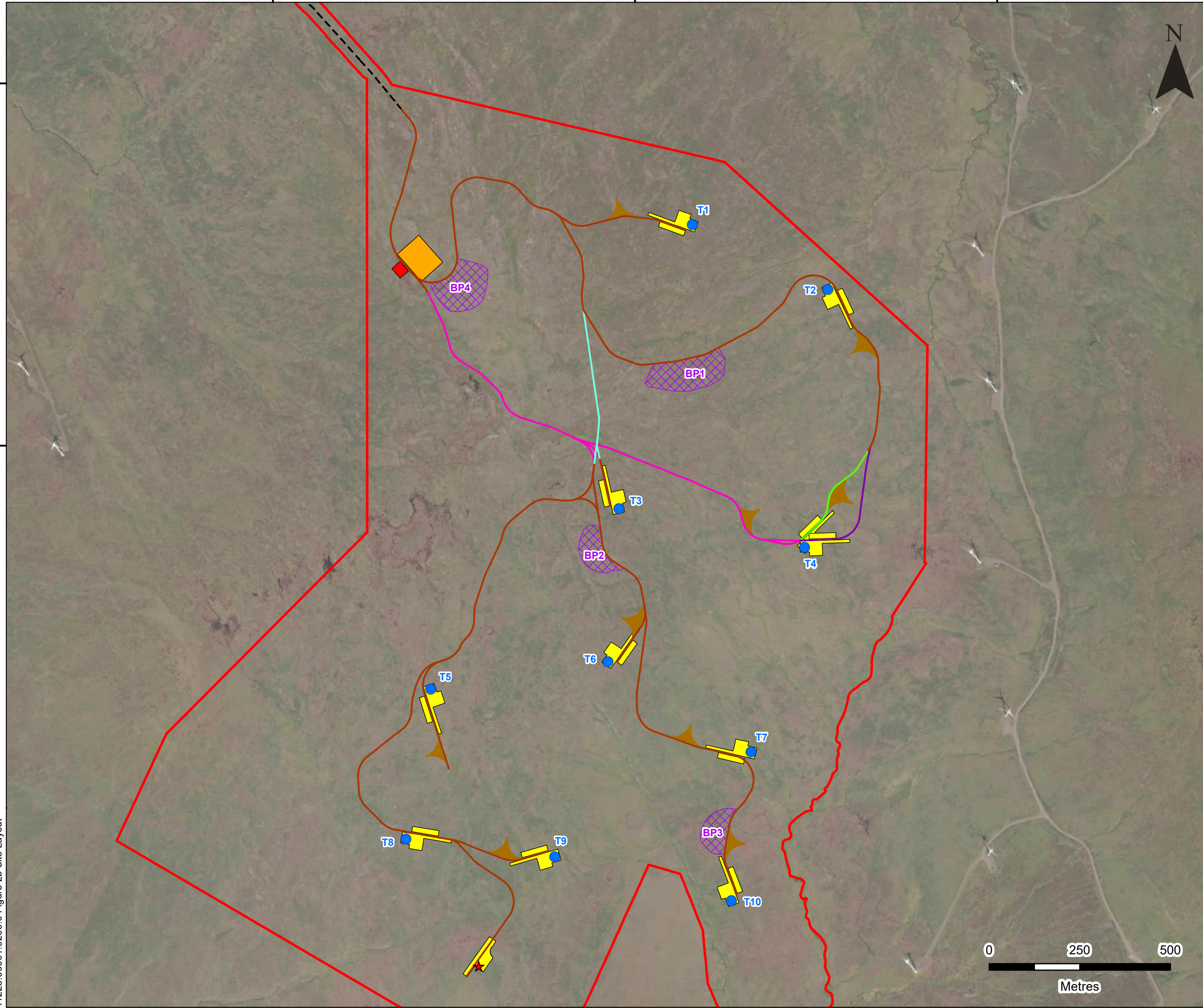


LEGEND

- Application Site Boundary
- Proposed Turbine Location
- ★ Proposed Permanent Met Mast
- Proposed Crane Hardstanding
- Proposed Construction Compound
- Proposed Substation
- Proposed Turning Head
- Potential Borrow Pit
- Consented Access Track

Proposed Track Alignment

- Proposed
- Proposed Option A
- Proposed Option A1
- Proposed Option A2
- Proposed Option B



BALMEANACH WIND FARM LIMITED

SLR

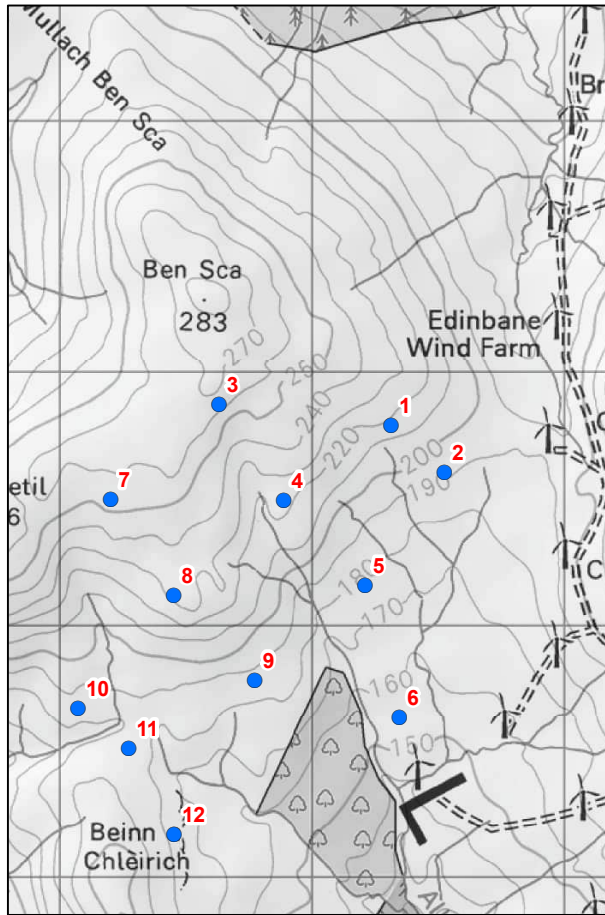
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM
DESIGN AND ACCESS STATEMENT
SITE LAYOUT PLAN
FIGURE 2b ii

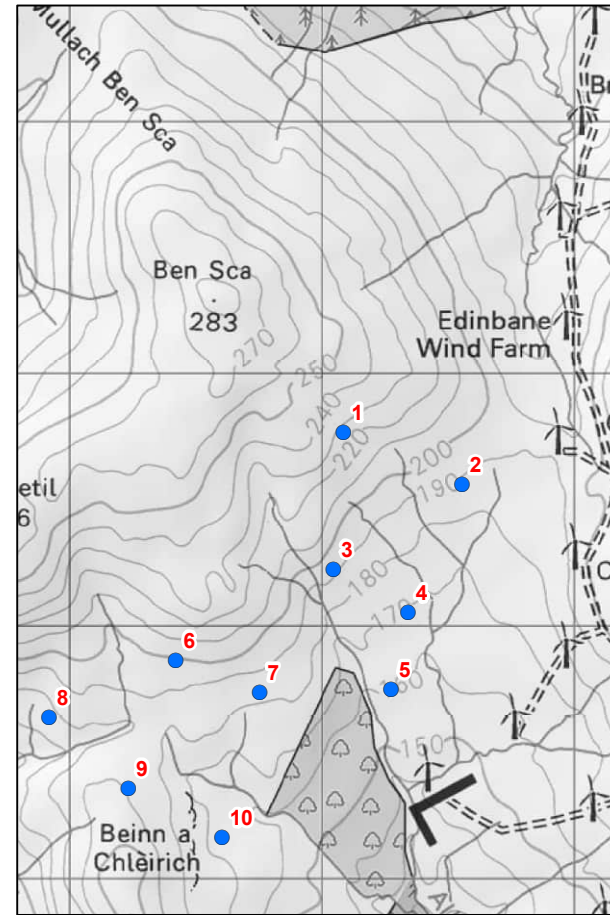
Scale 1:10,000 @ A3 Date JULY 2023



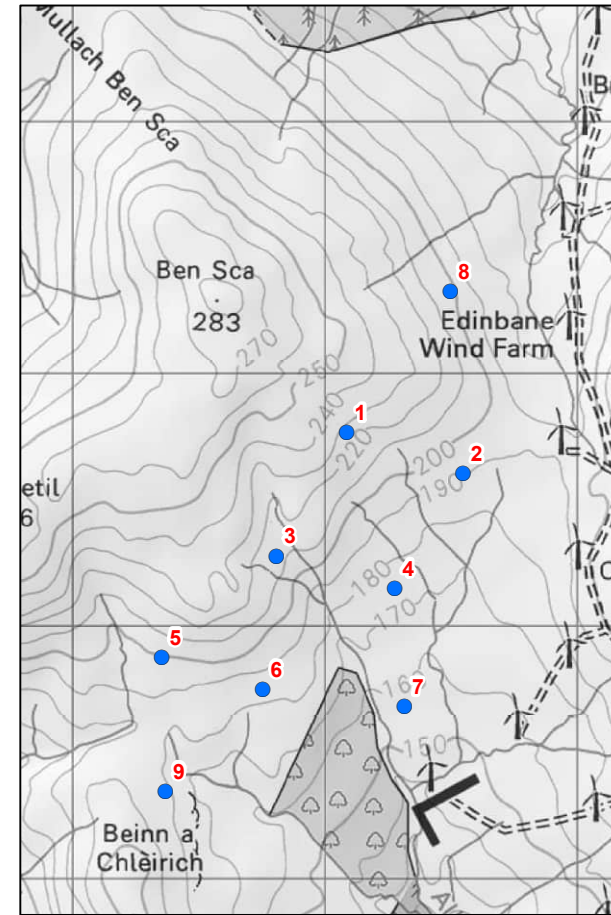
11223.00001.0266.0 Figure 2b Site Layout



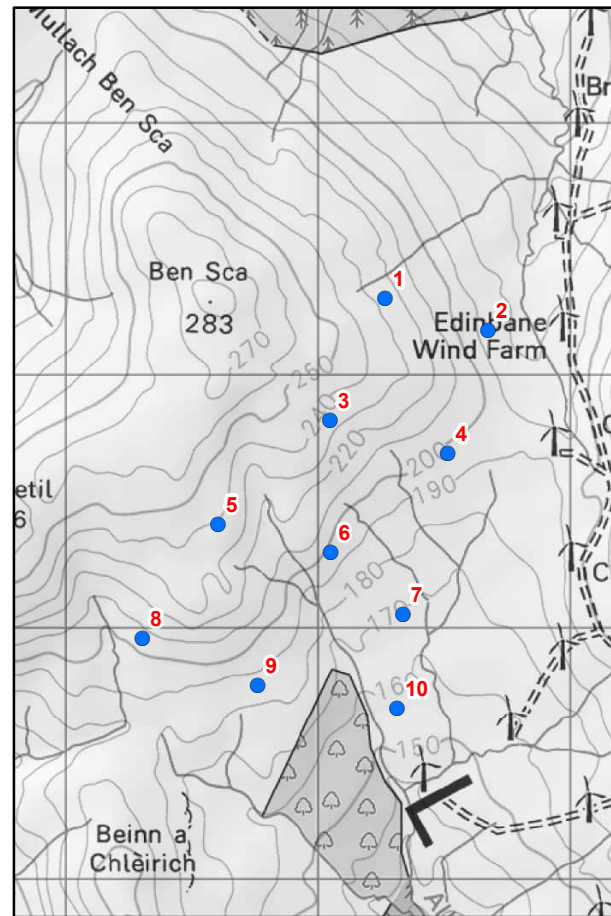
LAYOUT A: FEASIBILITY



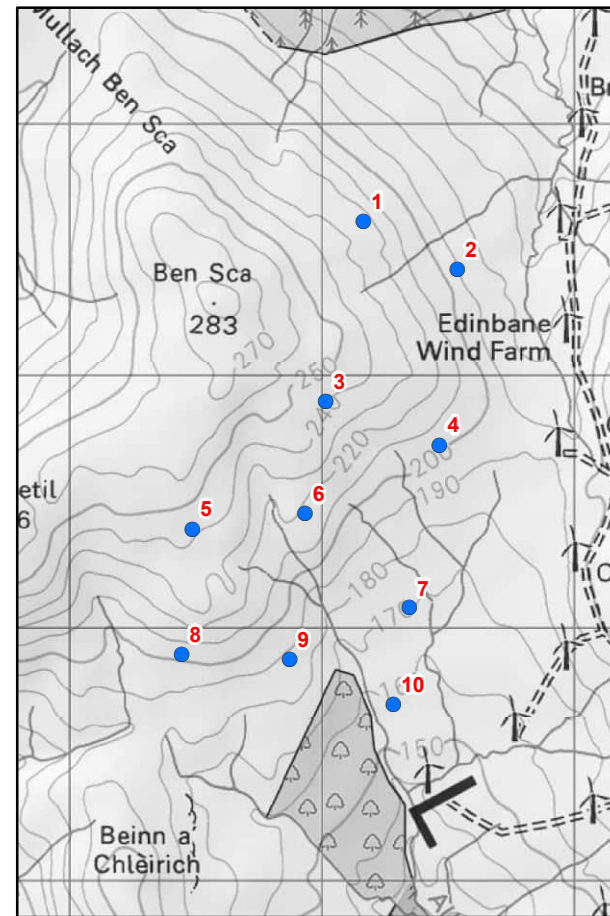
LAYOUT B: PRE-APPLICATION



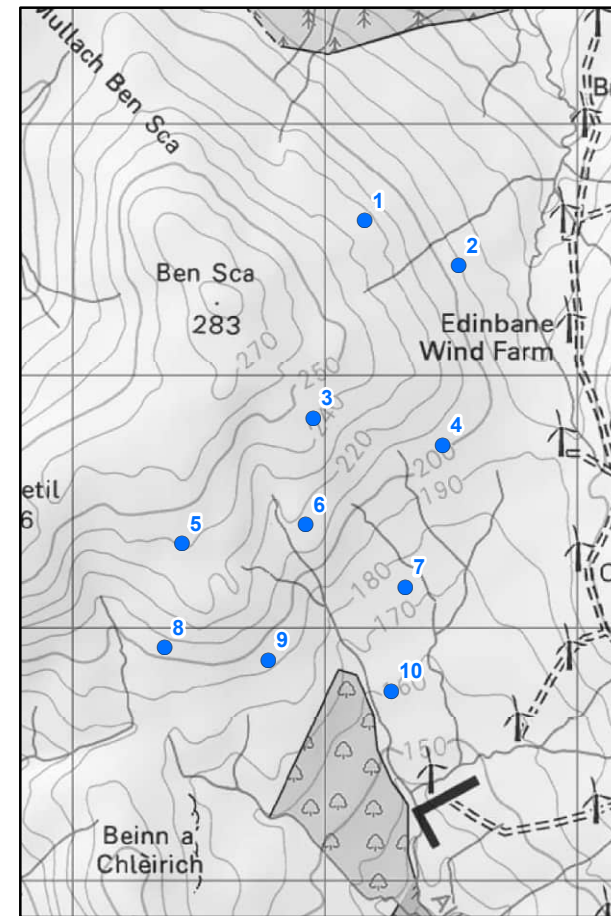
LAYOUT C: OPTION REVIEW



LAYOUT D: SCOPING LAYOUT



LAYOUT E: DESIGN CHILL LAYOUT



LAYOUT F: FINAL LAYOUT

LEGEND

- Proposed Turbine Location
- 1 Initial Turbine Number
- 1 Final Turbine Number

BALMEANACH WIND FARM LIMITED



4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM

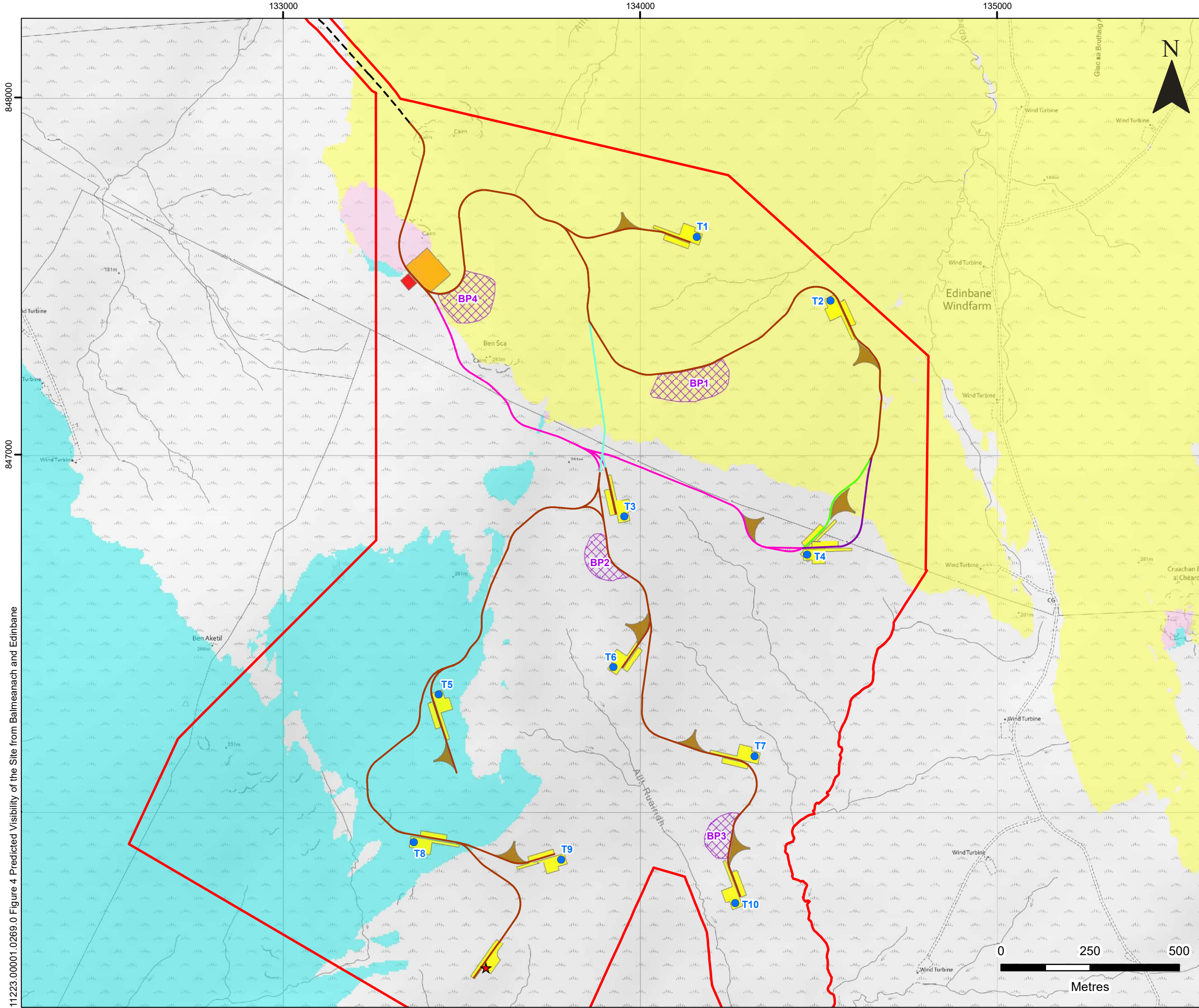
DESIGN AND ACCESS STATEMENT

SITE LAYOUT EVOLUTION

FIGURE 3

Scale 1:30,000 @ A3

Date JULY 2023



LEGEND

- Application Site Boundary
- Proposed Turbine Location
- ★ Proposed Permanent Met Mast
- Proposed Crane Hardstanding
- Proposed Construction Compound
- Proposed Substation
- Proposed Turning Head
- Potential Borrow Pit

Zone of Theoretical Visibility (Substation 5m Height)

- Visible from Balmeanach
- Visible from Edinbane
- Visible from Balmeanach and Edinbane

Proposed Track Alignment

- Proposed
- Proposed Option A
- Proposed Option A1
- Proposed Option A2
- Proposed Option B

Note

This Zone of Theoretical Visibility (ZTV) has been generated using ESRI ArcGIS Spatial Analyst extension. The digital terrain model (DTM) has been derived from OS Terrain 5 dataset (2m RMSE). Earth curvature has been included in the ZTV calculation and refraction of light has been applied using SNH guidance settings. The ZTV has been generated from a viewing height of 5m above ground level which represents a view from a first story window.

The use of ZTV mapping at this stage is limited and the following assumptions should be noted:

- The ZTV has been generated using the property locations in the surrounding area and derived from OS AddressBase Plus.
- A proposed substation height of 5 m has been used to indicate the maximum visible height of substation infrastructure.
- The ZTV is generated from a bare earth terrain and does not account for the screening effect of features within the landscape such as settlements and woodland. It does not indicate potential visual effects or show the likely significance of effects. It shows potential theoretical visibility only. The ZTV has been produced for the purpose of informing 'on the ground' visual assessment.

BALMEANACH WIND FARM LIMITED

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

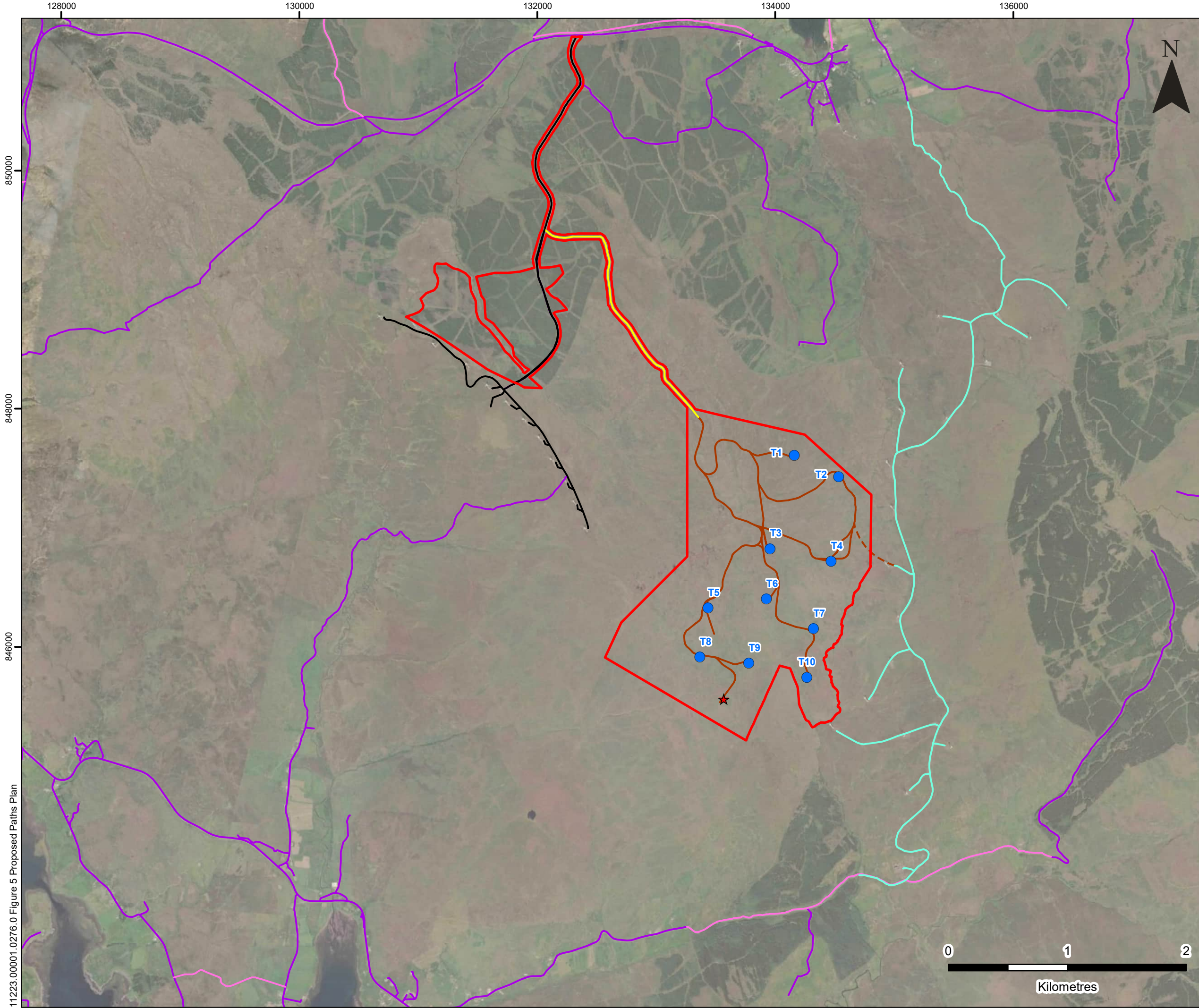
T: +44 (0)131 335 6830
www.slrconsulting.com

BALMEANACH WIND FARM DESIGN AND ACCESS STATEMENT PREDICTED VISIBILITY OF SUBSTATION COMPOUND (5M MAX HEIGHT) FROM BALMEANACH AND EDINBANE

FIGURE 4

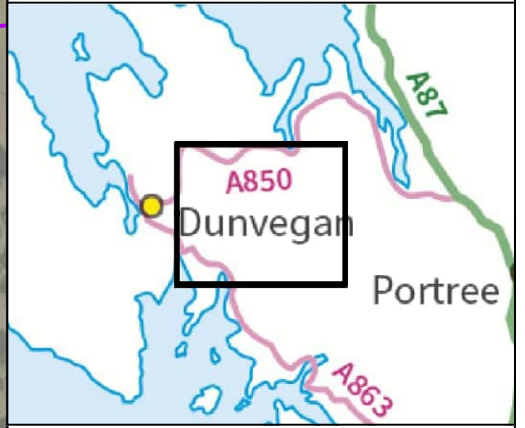
Scale 1:10,000 @ A3	Date JULY 2023
------------------------	-------------------

11223.00001.0269.0 Figure 4 Predicted Visibility of the Site from Balmeanach and Edinbane



LEGEND

- Application Site Boundary
- Proposed Turbine Location
- ★ Proposed Permanent Met Mast
- Ben Aketil Access Track
- Ben Sca Access Track
- Edinbane Access Track
- Proposed Development Access Track
- Proposed Link Path
- Core Path
- Informal Recreation Route



**BALMEANACH
WIND FARM LIMITED**

SLR
4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH
T: +44 (0)131 335 6830
www.slrconsulting.com

**BALMEANACH WIND FARM
DESIGN AND ACCESS STATEMENT
PROPOSED PATHS PLAN
FIGURE 5**

Scale 1:30,000 @ A3 Date JULY 2023



11223.00001.0276.0 Figure 5 Proposed Paths Plan

EUROPEAN OFFICES

AYLESBURY

T: +44 (0)1844 337380

BELFAST

belfast@slrconsulting.com

BIRMINGHAM

T: +44 (0)121 2895610

BONN

T: +49 (0)176 60374618

BRADFORD-ON-AVON

T: +44 (0)1225 309400

BRISTOL

T: +44 (0)117 9064280

CARDIFF

T: +44 (0)2920 491010

CHELMSFORD

T: +44 (0)1245 801630

CORK

T: +(021) 240 9000

DUBLIN

T: +353 (0)1 296 4667

EDINBURGH

T: +44 (0)131 335 6830

EXETER

T: +44 (0)1392 490152

FRANKFURT

frankfurt@slrconsulting.com

GLASGOW

glasgow@slrconsulting.com

GRENOBLE

T: +33 (0)6 23 37 14 14

KILKENNY

kilkenny@slrconsulting.com

LEEDS

T: +44 (0)113 5120293

LONDON

T: +44 (0)203 8056418

MAIDSTONE

T: +44 (0)1622 609242

MANCHESTER

T: +44 (0)161 8727564

NETHERLANDS\

T: +31 6 28 02 18 80

NEWCASTLE UPON TYNE

T: +44 (0)1844 337380

NOTTINGHAM

T: +44 (0)115 9647280

SHEFFIELD

T: +44 (0)114 2455153

SHREWSBURY

T: +44 (0)1743 239250

SPAIN

T: +34 6 82 04 83 01

STIRLING

T: +44 (0)1786 239900

WORCESTER

T: +44 (0)1905 751310