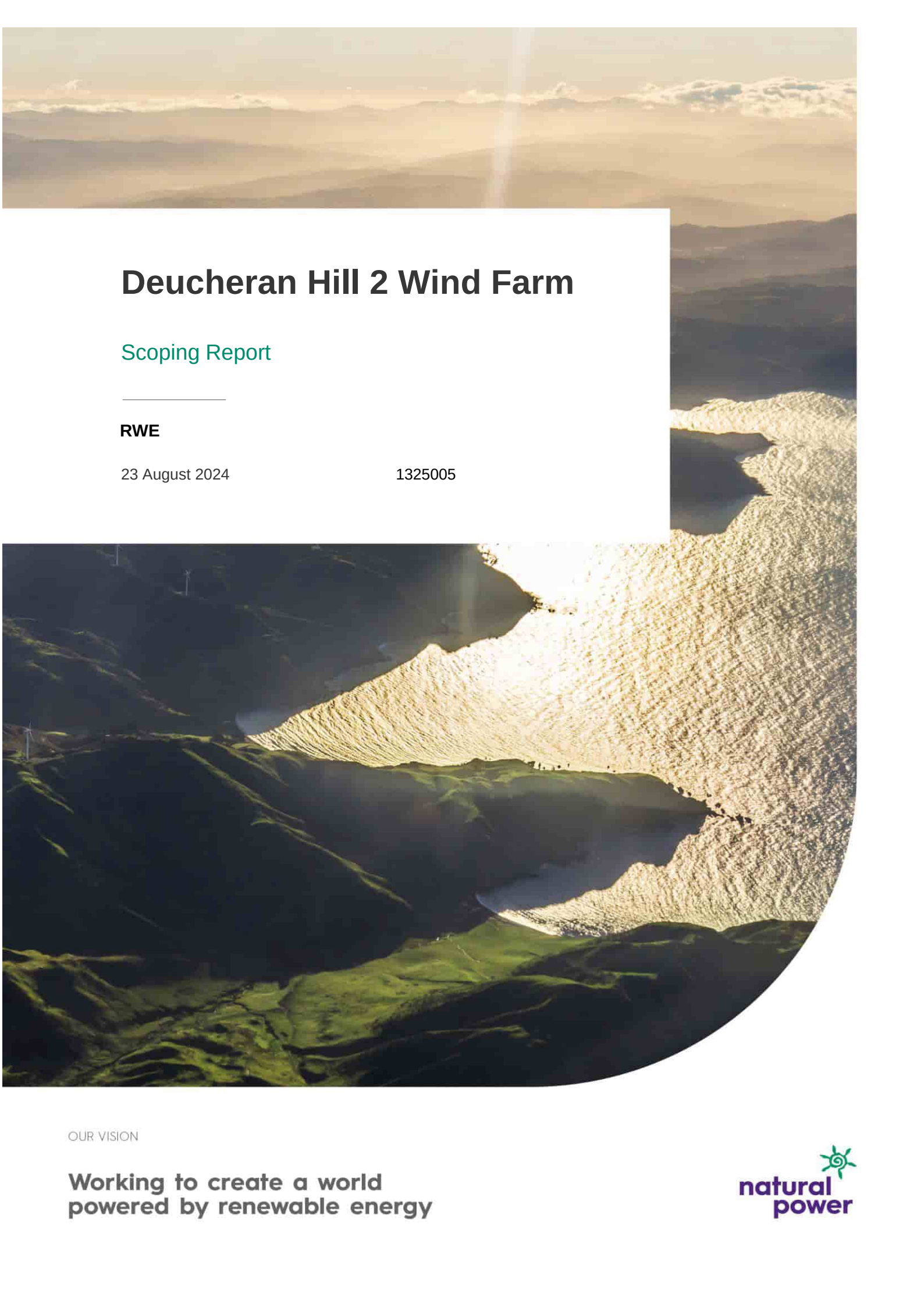


Appendix 2.1

Deucheran Hill 2 Wind Farm Scoping Report



Deucheran Hill 2 Wind Farm

Scoping Report

RWE

23 August 2024

1325005

OUR VISION

**Working to create a world
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Document history

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Glossary

Term	Definition
The Applicant	The Applicant is “RWE Renewables UK Ltd” and should be referred to as “the Applicant”.
Natural Power	The lead consultant EIA co-ordinator is: Natural Power Consultants Limited and can be shortened to “Natural Power” following first full introduction of the term. Do not abbreviate to NP/NPC.
Proposed Development	The site name is “Deucheran Hill 2 Wind Farm” and should be referred to as the “Proposed Development” throughout the text.
Site Boundary	The area including both the ‘Turbine Development Area’ and areas for potential habitat management/improvement and/or grid connection routes.
Turbine Development Area	The proposed turbine and infrastructure boundary.
Site	The project development area within the site boundary should be referred to as the Site.

List of Abbreviations

Abbreviation	Description
AA	Appropriate Assessment
ABC	Argyll and Bute Council
AEP	Annual Exceedance Probability
AIL	Abnormal Indivisible Load
AIP	Aeronautical Information Publications
AM	Amplitude Modulation
AOD	Above Ordnance Datum
ATC	Air Traffic Control
BGS	British Geological Survey
BoCC	Birds of Conservation Concern
BBS	Breeding Bird Survey
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAR	Controlled Activities Regulations
CEH	Centre for Ecology and Hydrology
CEMP	Construction Environmental Management Plan
CIA	Cumulative Impact Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management
ClfA	Chartered Institute for Archaeologists
CRM	Collision Risk Modelling
CRZ	Collision Risk Zone
CO ₂	carbon dioxide
CoPA 1974	Control of Pollution Act 1974

Abbreviation	Description
CNS	Communications, Navigation and Surveillance
CRTN	Calculation of Road Traffic Noise
CSL	Construction Site Licence
DAS	Design and Access Statement
DECC	Department for Energy and Climate Change
DfT	Department for Transport
DIO	Defence Infrastructure Organisation
DTM	Digital Terrain Model
DWPA	Drinking Water Protected Areas
EC	European Commission
EclA	Ecological Impact Assessment
ECOW	Environmental Clerk of Works
ECU	Energy Consents Unit
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIA Regulations	Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
EU	European Union
GET	Golden Eagle Topography
GDL	Garden and Designed Landscape
GPA	Glasgow Prestwick Airport
GPG	Good Practice Guide
GPS	Global Positioning System
GW	Gigawatts
GWDTE	Groundwater Dependent Terrestrial Ecosystems
GLVIA3	Guidelines for Landscape and Visual Impact Assessment: Third Edition
HB	Height Band
HES	Historic Environment Scotland
HGVs	Heavy Goods Vehicles
HAL	Highlands and Islands Airports Ltd
HLA	Historic Land-use Assessment
HLAMap	Historic Land-Use Assessment Data for Scotland
IEF	Important Ecological Feature
IEMA	Institute for Environmental Management and Assessment
IFP	Instrument Flight Procedure
IoA GPG	Institute of Acoustics' Good Practice Guide
IOF	Important Ornithological Feature
JNCC	Joint Nature Conservation Committee
km	Kilometres
kV	Kilovolts

Abbreviation	Description
KW	Kilowatts
LCT	Landscape Character Area Type
LDP	Local Development Plan
LGV	Light Good Vehicles
LI	Landscape Institute
LLA	Local Landscape Areas
LNCS	Local Nature Conservation Site
LSE	Likely Significant Effect
LTFP	Long Term Forest Plan
LUPS	Land Use Planning System Guidance
LVIA	Landscape and Visual Impact Assessment
m	metres
MIL AIP	Military Aeronautical Information Publication
MMS	Marine Scotland Science
MoD	Ministry of Defence
MW	Megawatts
Natural Power	Natural Power Consultants Limited
NCAP	National Collection of Aerial Photography
NERL	National Air Traffic Services En Route Ltd
NGR	National Grid Reference
NHZ	Natural Heritage Zones
NLS	National Library of Scotland
NPF	National Planning Framework
NPF4	National Planning Framework 4
NRFA	National River Flow Archive
NRHE	National Record for the Historic Environment
NRTF	National Road Traffic Forecast
NSR	Non-Statutory Records
NTS	Non-Technical Summary
OAM	Other Amplitude Modulation
OCEMP	Outline Construction Environmental Management Plan
OS	Ordnance Survey
PAC	Pre-Application Consultation
PAN	Planning Advice Note
PCH	Potential Collision Height
PIRP	Pollution incident Response Procedure
PLHRA	Peat Landslide Hazard Risk Assessment
PMP	Peat Management Plan
PPP	Pollution Prevention Plan

Abbreviation	Description
PSR	Primary Surveillance Radar
PWS	Private Water Supplies
RARFA	Regional Archaeological Research Framework for Argyll
RBMP	The River Basin Management Plan
RCP	Representative Concentration Pathway
RLOS	Radar line of sight
RMS	root mean square
RPM	revolutions per minute
RSPB	Royal Society for the Protection of Birds
RTC	Road Traffic Collision
RWE	RWE Renewables UK Ltd
SAS	Specific Advice Sheets
SBL	Scottish Biodiversity List
ScARF	Scottish Archaeological Research Framework
SEPA	Scottish Environment Protection Agency
SF	Scottish Forestry
SLA	Special Landscape Areas
SMC	Scheduled Monument Consent
SNH	Scottish National Heritage
SPA	Special Protection Area
SPAD	Scottish Palaeoecological Archive Database
SPI	Standardised Preference Index
SPP	Species Protection Plan
SRTM	Shuttle Radar Topography Mission
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage Systems
SWBSG	Scottish Windfarm Bird Steering Group
TMA	Terminal Manoeuvring Area
TMP	Traffic Management Plan
UKCP18	UK Climate Projections 2018
VP	Vantage Point
WCA	The Wildlife and Countryside Act 1981 (as amended)
WFAS Ltd	Wind Farm Aviation Safeguarding Limited
WFD	Water Framework Directive
WHO	World Health Organisation
WHS	World Heritage Sites
WM	Water Management Plan
WoSAS	West of Scotland Archaeology Service
WWS	Winter Walkover Surveys

Abbreviation	Description
Zol	Zone of Influence
ZTV	Zone of Theoretical Visibility

1. Introduction

1.1. Background and Context

This Scoping Report has been prepared by Natural Power Consultants Limited (Natural Power) on behalf of RWE Renewables UK Ltd (RWE) in anticipation of an application under Section 36 of the Electricity Act 1989 for Deucheran Hill 2 Wind Farm (herein referred to as the Proposed Development), a wind farm development located on an area of land on the Kintyre Peninsula in Argyll and Bute, 7 Kilometres (km) northwest of Carradale.

Under the statutory procedures set out in the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations), it is proposed that any such application is accompanied by an Environmental Impact Assessment Report (EIAR). Under regulation 12 of the EIA Regulations, a formal opinion of the information to be included within the scope of the EIAR is sought from the Scottish Ministers.

The purpose of this Scoping Report is to provide information to the Scottish Ministers and statutory consultees for determining the scope of the Environmental Impact Assessment (EIA) and EIAR. Where RWE (herein referred to as the Applicant) is proposing to 'scope out' particular elements from the EIAR, sufficient information and justification has been provided within this Scoping Report. The intention is to ensure the focus within the EIAR is on any receptors impacted by the Proposed Development that may experience significant effects.

Consultees will note that the Scoping Report contains a number of questions, for which it would be useful to receive feedback on. Not all questions will be relevant to all consultees, therefore we request that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently feedback is welcome on any issue considered relevant to the Proposed Development. If consultees elect not to respond, the Applicant will assume that consultees are satisfied with the approach adopted or proposed. Further consultation will take place with relevant stakeholders throughout the EIA and application process, including with local communities.

The current design of the Proposed Development is a result of maximising the potential wind resource on site whilst recognising site-specific and broader constraints, as they are understood at the date of submitting this Scoping Report. The layout of the Proposed Development presented in the Scoping Report is expected to be further refined during the EIA process and through further consultation with consultees and stakeholders. Should any changes occur that are likely to result in a significant or unknown effect on an important feature or impact previously scoped out, then this will be scoped back into the EIA process and the appropriate scope agreed with the ECU and relevant statutory consultees.

1.2. Purpose of this Scoping Report

This Scoping Report is submitted with a formal request to the Scottish Ministers to adopt a Scoping Opinion and is submitted in accordance with the EIA Regulations.

For this application it is proposed to begin stakeholder consultation at the scoping stage in order to provide information on the baseline conditions of the Site and the possible impacts from the Proposed Development. Therefore, this Scoping Report utilises the existing information in respect of the Site and data gathered to date in relation to the operational Deucheran Hill Wind Farm, to focus on key areas and likely significant effects in agreement with consultees. Potential minor and non-significant issues are proposed to be scoped out.

From the use of existing data available for the Site, this Scoping Report provides an in-depth understanding of the baseline and provides evidence to enable key consultees to focus on key areas, likely significant effects and to the 'scoping out' of minor and not significant issues.

Whilst this Scoping Report will inevitably require more engagement from key consultees at an early stage, the eventual EIAR submitted should be more streamlined and focus on only likely significant effects.

This approach is supported by the EIA Regulations and by the Energy Consents Unit (ECU). The Applicant will ensure that regular and continued liaisons with key stakeholders (including the community) are carried out and documented to agree the assessment baseline, methodology and therefore ensuring the EIA process and final EIAR documents will be more efficient and streamlined.

1.3. Scoping Question to Consultees

The following question is directed to consultees:

- **Question 1:** Do consultees agree with the proposed approach to scoping and the purpose of the Scoping Report?

2. The Applicant

RWE is a leading global energy producer and provides around 15% of the UK's electricity. RWE generates enough power for over 14 million homes through a diverse portfolio of onshore and offshore wind, hydro, biomass and gas across England, Scotland and Wales. To date RWE has approximately 10 Gigawatts (GW) of renewable capacity installed globally and are one of the largest operators of renewables.

In Scotland, RWE owns and/or operates around 475 Megawatts (MW) of installed renewable capacity across 27 hydro, biomass and onshore wind sites, as well as Scotland's first commercial-scale offshore wind farm: Robin Rigg in the Solway Firth.

RWE currently operates ten onshore wind farms in Scotland with a capacity of almost 225 MW and has been instrumental in the development, construction and operation of many more of Scotland's onshore wind farms. Within Argyll and Bute RWE operates two onshore windfarms including An Suidhe and Deucheran Hill.

3. The Proposed Development

3.1. Site Description

The Proposed Development site lies approximately 7 km northwest of Carradale, on the Kintyre Peninsula in Argyll and Bute within the administrative boundary of Argyll and Bute Council (ABC). The main land use within the site is commercial forestry.

The Proposed Development site comprises of the existing Deucheran Hill Wind Farm. The original Deucheran Hill Wind Farm, consented on the 8th June 2001 and operational in December 2001, comprises of 9 turbines with a range of 76 metres (m) to 93 m tip heights, 66 m rotor and an installed capacity of 15.75 MW. It was consented under the Town and Country Planning (Scotland) Act 1972 and in accordance with the statutory procedures set out in The Environmental Assessment (Scotland) Regulations 1988. In addition to the application, a separate application was submitted to the Secretary of State for Scotland under Section 37 of the Electricity Act 1989 for an overhead 33 kV line and associated works connecting the wind farm to the Scottish Hydro-Electric local electricity supply network. Deucheran Hill Wind Farm is due to be decommissioned in 2026.

The Proposed Development boundary has been drawn to accommodate the proposed turbines as well as proposed habitat management and biodiversity enhancement. It is expected that the turbine layout will change post scoping as a result of design iterations. However, it is not expected that the Turbine development area will change.

Figure 3.1 shows the location of the Proposed Development. Figure 3.2 illustrates the current proposed layout for the repowering of the wind farm, including turbine positions. Figure 3.3 shows the regional context of the Proposed Development.

3.2. The Proposed Development

The Proposed Development has been through a number of design iterations but will continue to evolve as the EIA progresses.

At time of writing, the Proposed Development comprises:

- Up to 23 wind turbines up to 220 m to tip height (current candidate turbine model specifications have hub heights of 135 m and rotor diameters of 170 m);
- Turbine foundations and hardstandings;
- External transformer housing;
- Crane pads;
- Access tracks;
- Underground electricity cables;
- Battery storage;
- Permanent anemometry mast;
- Temporary borrow pits;
- Temporary construction and storage compounds and ancillary infrastructure;
- Site signage;
- Onsite substation and control building;
- Office and welfare facilities;
- Habitat Management Area;
- Temporary construction gatehouse; and
- Waste water and drainage attenuation measures (as required).

It is expected that Deucheran Hill 2 Wind Farm will be accessed from the A83 at Killean. On-site it is anticipated that existing access tracks will be utilised and upgraded where possible. A detailed turbine track layout will be considered in due course.

The Proposed Development location has a good wind resource and consequently a project located here will significantly contribute to the UK and Scottish Government's renewable energy targets. Wind farm design with turbines up to 220 m tip height is considered reflective of Scottish Government aspirations for demonstrably better energy yields from sites optimised with higher tip heights. With upgrading of existing tracks where possible, the potential effects on the local environment will be further minimised.

Table 3.1: Proposed Turbine Coordinates

Turbine	Eastings	Northings
1	177562	646965
2	178240	646656
3	177069	646405
4	177681	645971
5	178430	645931
6	175774	645548
7	176679	645504
8	177360	645197
9	174384	645036
10	175095	645246
11	176193	644941
12	176407	644227
13	177112	644493
14	174956	644514
15	175628	644200
16	176011	643558
17	177299	643764
18	175271	643537
19	175691	642875
20	176719	643287
21	174933	642873
22	175888	642154
23	176397	641608

Source: Natural Power

The lifespan of the Proposed Development is proposed to be 40 years, following which decommissioning of this project would be undertaken. It is anticipated that the Proposed Development will have a combined total installed capacity of above 50 MW with additional battery storage.

3.3. Project Design

During the review process for the Proposed Development area, further assessments have been carried out on the wind resource at the site and the key landscape and visual constraints. Key considerations to the scheme are as follows:

- Available development in terms of energy yield;
- Relationship to the surrounding landscape; and
- Technical and environmental constraints.

Numerous iterations of the design have been considered, consisting of a range of turbine heights. The layout presented for scoping is considered, at this point, to be the most optimal following an iterative design process which

has taken all known constraints (at the time of preparing the Scoping Report) and wind yield analysis into consideration, see Figure 3.2. The layout design will continue to evolve throughout the EIA process.

A micro siting allowance of 100 m is proposed which would allow maximum flexibility to deploy the most efficient layout possible.

3.4. Scoping Question to Consultees

The following questions is directed to consultees:

- **Question 2:** Do consultees agree a micro-siting allowance of 100 m to allow flexibility within the project design?

3.5. Wind Turbines, Foundations, Transformers and Crane Pads

The specific turbine model has not yet been selected but will be a horizontal axis machine with three rotor blades. Current models have approximately 6.6 MW generating capacity and by the time the project is constructed, such wind turbine models may be capable of generating more. Any turbines selected may have external transformers placed adjacent to each turbine. A relevant candidate turbine model will be selected for assessment.

The turbines will be fixed to reinforced concrete foundations. The foundations will be formed in excavations approximately 3.5 m deep, depending upon ground conditions. Detailed design specifications for each foundation would depend on ground conditions, the specific turbine used and various other engineering considerations.

Crane pads would be left in-situ following erection of turbines to allow for maintenance and replacement of parts as necessary during the lifetime of the project.

3.6. Battery Energy Storage System

The BESS will store excess renewable electricity generated by the Proposed Development and discharge to the grid when required, and potentially store imported electricity from the grid depending on future commercial circumstances. The exact size and layout of the compound has not been decided but is likely to incorporate container units, inverters, ancillary equipment, security fencing and CCTV. The current units are similar in sizing to 20 x 8 x 8 ft containers, situated on a hardstanding area with small concrete foundations. Cabling will then be routed from each BESS container to a transformer which will then be routed to the substation compound.

The system would be expected to utilise a modern lithium-ion cell chemistry. There is very low risk of fires starting or spreading through what is called 'thermal runaway' with the latest generation of lithium-ion battery energy storage systems, which benefit from a layered protection strategy. To mitigate any potential risk of uncontrolled fire spreading, a minimal external buffer of 10 m from the very edge of the battery storage hardstanding area will be applied to any trees. The system would likely include fire monitoring and suppression systems.

3.7. Access Tracks

As a repowering of an existing wind farm site, it is anticipated that the requirement for new site tracks may be reduced. Upgrades of any existing site tracks may be required to transport the new larger turbines to the site.

The routes for the tracks will be chosen to minimise potential impacts on the environment, while taking account of other site-specific constraints. The EIAR will include a rationale for their final location.

The construction of the site tracks falls under two main categories, as follows:

- 'Cut' track – superficial layers are removed, along with soft subsoils until reaching a competent bearing layer, which can be used as a formation level using methods including blasting of rock.

- 'Floating' track – superficial layers and subsoils are left in-situ with the track built off the existing ground level, utilising geotextiles and geogrids to reinforce the track materials. This technique is generally used where there are deep soft underlying materials e.g. peat or soft clays.

Watercourse crossings will be minimised as far as possible and where these cannot be avoided then suitable water crossings will be identified within the EIAR and assessed.

3.8. Substation, External Transformers & Grid Connection

The wind turbines would produce electricity at 660 – 1,000 Volts. The electricity would then be transformed to 33,000 Volts (33 Kilovolts (kV)) via a transformer. The transformers would be linked to an onsite substation via high voltage underground cables placed in trenches which would generally follow the route of the onsite tracks (dimensions to be determined by the ground conditions but typically 0.5 m x 1 m deep). Where trenching alongside onsite tracks is not feasible, the transformers would connect to the substation via underground cables across open ground with electrical marker posts used to identify their locations.

The exact location of the transformer may differ depending on the final turbine model used.

The underground 33 kV cables routed from the turbines would be brought together via a substation at a location still to be determined. The detailed construction methods, layout of cables and contents of the onsite substation compound would be provided within the Outline Construction Environmental Management Plan (OCEMP) which would form part of the EIAR.

Connection of the Proposed Development to the national grid will be subject to a separate application.

3.9. Borrow Pits

The Proposed Development would require crushed stone to construct the new tracks, crane hardstandings and turbine foundations as well as upgrade the existing tracks as necessary. It is the intention that suitable stone and aggregate would be sourced from onsite borrow pits. Borrow pits on site may be used to reduce the potential effects on the environment and transport network, associated with transporting stone to the site. Borrow pit areas of search will be identified within the EIAR. These will be temporary in nature and restored following use.

3.10. Temporary Construction and Storage Compounds, and Ancillary Infrastructure

To provide a secure area for site office facilities and storage of materials and components, temporary compounds may be required and would be located strategically across the site, likely adjacent to the site access track. They would be secured by a temporary fence, removed at the end of the construction phase. The hardcore base will be retained but allowed to re-vegetate.

Infrastructure ancillary to the construction and operation of the Proposed Development will be required. These would be constructed in accordance with best practice and relevant guidelines, to minimise environmental impact.

3.11. Outline Construction Environmental Management Plan

An OCEMP would be prepared as part of the EIAR. It is expected that a suspensive condition would be attached to the consent requiring the submission of a final CEMP and that this would be agreed with the Local Planning Authority (ABC), prior to construction commencing. The OCEMP would set out the method statements for constructing site infrastructure, measures that would be undertaken by contractors to ensure good site practice with regards to construction practices and environmental management. Such measures would include for example, the transport and storage of potentially polluting substances such as oils and lubricants as well as waste management.

It is expected that no development would commence until the role, responsibilities, and operations to be overseen by an appropriately competent Environmental Clerk of Works (ECoW) have been submitted to, and approved in writing by, the Local Planning Authority. The appointed person shall undertake all activities, and works shall be carried out, in accordance with the approved management plans. The ECoW will ensure that during construction impacts to ecological features are minimised through best practice, including ensuring water quality is maintained and the potential for disturbance or risk of injury/death is minimised for protected species which may be using the site on an occasional basis.

4. Approach to EIA

The EIA is a statutory procedure which draws together, in a systematic way, an assessment of the likely significant environmental effects arising from a Proposed Development.

As the process has numerous steps, as set out below, it allows for the opportunity to 'design out' or avoid significant adverse environmental effects through the design evolution of the Proposed Development.

An iterative design approach is already being undertaken for the Proposed Development and will continue to be adopted throughout the EIA process. The iterative design approach will allow for a design that works well for both the local environment and environmental resources within the area, as well as being an economically viable scheme, with the ability to deliver on Scottish, UK and international renewable energy targets.

Previous data collected from the existing Deucheran Hill Wind Farm and data collected for the new development will be used to form baseline data for the Proposed Development. The Applicant has a comprehensive understanding of the Site and the local vicinity. This has allowed for the design identified within the Scoping Report to have 'designed out' some impacts to the environment already.

Consultees are requested to respond where possible to scope in those features and topics that are likely to experience a significant impact and allowing others to be scoped out. In doing so the impact assessment will be focussed on those effects that will influence the determination.

The impact assessment will determine what the effect, either directly or indirectly, will be from the Proposed Development by comparing the baseline conditions with the conditions that would prevail should the Proposed Development be constructed, operated and subsequently decommissioned. The environmental effects of the Proposed Development will be predicted in relation to environmental receptors (e.g. people, built resources and natural resources).

A distinction will be made in the assessments between impacts and effects, where:

- Impacts are defined as the predicted change to the baseline environment attributable to the scheme; and
- Effects are the consequence of impacts on environmental resources or receptors.

4.1. What Will the EIA Assess?

The EIA will address the construction phase of the windfarm, the operational phase which would last approximately 40 years, including site construction and the decommissioning phase. The geographical coverage of the EIA will take account of the following:

- The physical extent of the proposed works;
- The nature of the baseline environment and the manner in which effects are propagated; and
- National and Local planning and policy context for the Proposed Development.

4.2. Gathering Baseline Information

Collection of baseline data for this Proposed Development is ongoing, and the assessment team will ensure that sufficient data is obtained to enable a robust assessment, appropriate to the nature and scale of the proposed Development. The extent of the baseline assessment will be determined using both professional judgement and industry best practice. The EIA will also identify areas where the baseline may change, prior to the construction and operational phases of the Proposed Development from current conditions (for example, maturation of landscaping).

The baseline data consists of desk study assessments (including the use of data gathered for the previous developments in the area), consultation, field survey and monitoring which will be clearly reported in the subsequent sections, and within the EIAR (should there be an expected significant impact from the development). In line with the regulations, the EIAR will also indicate any difficulties encountered in compiling environmental baseline conditions, such as not being granted permission to access areas where surveys were required.

4.3. Prediction of Impacts and Evaluation of Effects

The prediction of impacts examines the change to the baseline environment that could result from the construction and operation of the Proposed Development. To guide the evaluation of effects, the effects will be classified into one or more of the following:

- Positive effects that have a beneficial influence, negative effects that have an adverse influence;
- Temporary effects that persist for a limited period only, due for example to particular construction activities;
- Permanent effects that result from an irreversible change to the baseline environment or which persist for the foreseeable future;
- Direct effects that arise from activities that form an integral part of the Proposed Development;
- Indirect effects that arise from activities not explicitly forming part of the Proposed Development;
- Secondary effects that arise as a result of an initial effect of the scheme; and
- Cumulative effects that arise from the combination of different impacts at a specific location, the recurrence of impacts of the same type at different locations, the interaction of different impacts over time, or the interaction of impacts arising from the scheme in conjunction with other development projects.

There is no statutory definition of what constitutes a significant effect, although each EIA discipline aims to provide its own guidance. A significant effect may be broadly defined as an effect which, either in isolation or combination with others, should be taken into account in the decision-making process. This general definition will be used as the basis against which the significance criteria for environmental disciplines will be developed. The threshold of significance of effects tends to vary between the environmental topics. The assessment team will ensure that the approach taken for each discipline is clearly explained.

4.4. Mitigation of Environmental Effects

Mitigation measures will be considered for each significantly adverse effect. The EIAR will include a description of the measures envisaged to prevent, reduce and where possible remedy any significant adverse effects. In line with the regulations, when identifying mitigation measures, the Proposed Development will take into account the practicability and cost effectiveness of the proposals and their efficiency in reducing environmental impacts.

Where practical, the implementation of mitigation measures will be set out as commitments. Where the effects of the impact are found to be significant, and where there is uncertainty in the mitigation proposed, monitoring may be proposed to ensure that the mitigation is both required and effective. Monitoring will allow for adaptation of the mitigation measures to ensure that they are fit for purpose. Monitoring will be proportionate to the level of significance experienced.

Once the final design has been adopted and account has been taken of any mitigation measures, residual effects will be listed. The significance of a residual effect will be determined by correlating the magnitude of the change (or impact) arising from the scheme with the sensitivity of the particular attribute under consideration. The magnitude of change will be evaluated in accordance with the following table, Table 4.1, unless a specific magnitude of change table is presented for that discipline in this Scoping Report.

Table 4.1: Magnitude of change table

Magnitude	Description
High	Total loss or major alteration to key elements/features of the baseline conditions.
Medium	Partial loss or alteration to one or more key elements/features of the baseline conditions.
Low	Minor shift away from the baseline conditions.
Negligible	Barely discernible change from baseline conditions.

Source: Natural Power

Where applicable in carrying out individual assessments, a scale of increasing sensitivity of the resource or receptor will be defined. This may be defined in terms of quality, value, rarity or importance and can be classed as 'Low', 'Medium' or 'High'. For certain assessment areas, guidance will be taken from the value attributed to elements through designation or protection under law. Where assessment of this nature takes place the correlation of magnitude against sensitivity will determine a qualitative expression for the significance of the residual effect. This is demonstrated in the matrix below in Table 4.2.

Table 4.2 Significance of Effect

Sensitivity of resource/ receptor	Low	Medium	High
Magnitude of Impact			
High	Moderate	Moderate / Major	Major
Medium	Low / Moderate	Moderate	Moderate / Major
Low	Low	Low / Moderate	Moderate
Negligible	Negligible / Low	Low	Low / Moderate

Source: Natural Power

Those residual adverse effects indicated as Major and Moderate/Major will be regarded as being significant effects in terms of the relevant legislation. However, other factors may have to be considered including the duration and the reversibility of the effect, which will be discussed within each topic chapter. Positive effects will also be discussed.

We intend to focus the EIAR on significant effects and will therefore seek agreement that non-significant effects can be scoped out.

4.5. Securing Commitments and Mitigation Through Planning Conditions

Commitments to deliver mitigation proposed within the EIAR will be secured if the proposal receives consent through appropriate planning conditions to be attached to the deemed) application under Section 36 of the Electricity Act 1989.

4.6. Scoping Question to Consultees

The following questions are directed to consultees:

- **Question 3:** Could consultees respond, where possible, which features and/or topics they feel are likely to experience a significant impact and should be scoped in?
- **Question 4:** Do consultees agree with the approach to the EIA and the associated mitigation and monitoring?

5. Consultation

5.1. Community Consultation

Natural Power and the Applicant consider consultation with the community to be a crucial part of the development process and will engage with the local community throughout the application process. As this is a Section 36 application, there is no formal requirement to follow the procedures for major developments under the Planning etc. (Scotland) Act 2006, however this application will follow best practice guidelines. A Pre-Application Consultation Report (PAC Report) will be submitted with the application.

As part of the iterative design process and best practice, the Applicant is keen to engage with local communities close to the Proposed Development to gather their views, so these can, where possible, inform the design process and information required for any forthcoming application.

The views of local communities will be continually sought throughout the EIA process and there will be other opportunities for key stakeholders and community members to share their views on the Proposed Development as it progresses throughout the EIA and consenting process.

5.2. Other Stakeholders Consultation

Natural Power and the Applicant consider consultation with statutory and non-statutory consultees (e.g. NatureScot, Historic Environment Scotland (HES), Scottish Environment Protection Agency (SEPA), ABC, Community Councils, etc.) as an integral part of the iterative EIA process and recognises the benefits in carrying out early consultation with all relevant parties. The consultation will progress with the circulation of this Scoping Report and will continue for the duration of the EIA process.

5.3. Scoping Question to Consultees

The following questions is directed to consultees:

- **Question 5:** Do consultees agree with the approach set out for community consultation?

6. Responding to this Scoping Report

Consultee responses to this report should be directed to the ECU, who will then form a Scoping Opinion. The ECU can be contacted via email:

Econsents_Admin@gov.scot

The Applicant will welcome copies of responses to inform the scope of EIA to be undertaken for the Proposed Development. Further direct consultation will be undertaken with each consultee as the EIA progresses.

7. Environmental Impact Assessment Report (EIAR)

The EIA process will result in the production of an EIAR. The EIAR will identify the features/receptors that have been agreed with the competent authority and their advisers as features that are likely to be affected by a significant effect from the Proposed Development.

It will focus on each of the broad topics identified within this Scoping Report, the Scoping Opinion, plus any others that develop throughout the remainder of the EIA process, until submission.

Where features are considered, the assessment methodology, results, effects, impacts and mitigation proposed (if any) will be included.

The EIAR will include a Non-Technical Summary (NTS) and Technical Appendices.

The EIAR is likely to follow the structure in Table 7.1 below.

Table 7.1: EIA Structure

Volume	Heading
1	Chapter 1: Introduction
	Chapter 2: Approach to EIA
	Chapter 3: Site Selection and Design Evolution
	Chapter 4: Project Description
	Chapter 5: Legal and Planning Policy
	Chapter 6: Landscape and Visual
	Chapter 7: Ecology
	Chapter 8: Ornithology
	Chapter 9: Archaeology and Cultural Heritage
	Chapter 10: Hydrogeology, Hydrology, Geology and Peat
	Chapter 11: Noise
	Chapter 12: Traffic and Movement
	Chapter 13: Socio-economics & Tourism
	Chapter 14: Aviation
	Chapter 15: Other Issues
	Chapter 16: Synergistic Effects & Summary of Mitigation and Residual Effects
2	EIA Figures
3	Technical Appendix
4	Non-Technical Summary

Source: Natural Power

The EIAR will be produced both in a hard copy print and electronically. For the majority of consultees, unless otherwise requested, the EIAR will be provided electronically. Upon submission of the application, these documents will be made available for public inspection at appropriate locations to be agreed with ABC and the ECU and will be distributed to the relevant consultees. An NTS will be submitted alongside the EIAR, which will provide a summary of the main findings and will be written in a non-technical language to help enable clear understanding and overview of the assessments.

A PAC Report, Planning and Renewable Energy Policy Statement and a Design and Access Statement (DAS) will be submitted along with the EIAR as part of the Section 36 application.

7.1. Scoping Question to Consultees

The following question is directed to consultees:

- **Question 6:** Do consultees agree with the proposed chapters to be included in the EIAR?

8. Embedded Mitigation and Further Layout Iterations

The design of the Proposed Development to date has been an iterative process, and the layout of which has avoided environmental and physical constraints as far as possible (embedded mitigation). These will be refined as the EIA progresses.

The layout and design of the development will continue to evolve, until the design will be 'frozen' to allow final assessment. As stated previously the layout and design provided at scoping are considered to be the optimum from an energy generation perspective, and with consideration to known constraints.

In the following sections the subject areas to be covered in the Scoping Report and EIAR are provided. Where it is considered that certain subjects or particular aspects within subjects can be scoped out of the EIAR, evidence and a rationale is provided.

9. Climate Change, Energy & Planning Policy Framework

9.1. Introduction

This section presents a summary of relevant policy and guidance documents that will be taken into consideration to help inform the design of the Proposed Development.

The EIA Report will set out the relevant policies that have been considered as part of the assessments undertaken throughout the EIA. A separate Planning Statement will provide a detailed appraisal of the Proposed Development against the relevant Development Plan policies, national planning and energy policy and other material considerations.

The EIA Report will also concisely reference climate change policy and the contribution of Proposed Development to the UK and Scottish Government's climate change goals and policy targets.

9.2. Climate Change & Energy Policy: Summary

The burning of fossil fuels to produce electricity is a major contributor to climate change through the release of atmospheric carbon dioxide and other harmful gases known collectively as greenhouse gases.

The Proposed Development relates to the generation of electricity from renewable energy sources and comes as a direct response to national planning and energy policy objectives. The clear objectives of the UK and Scottish Governments will be summarised, in relation to encouraging increased deployment and application of renewable energy technologies, consistent with sustainable development policy principles and national and international obligations on climate change.

In recent years UK and Scottish Government policies have focussed increasingly on concerns about climate change. Each tier of Government has developed targets, policies and actions to achieve targets to deal with the climate crisis and to generate more renewable energy and electricity.

The UK Government retains responsibility for the overall direction of energy policy, although some elements are devolved to the Scottish Government. The UK Government has published a series of policy documents setting out how targets can be achieved. Onshore wind generation, located in Scotland, is identified as an important technology to achieve these various goals.

The Scottish Government has published a number of policy documents and has set its own targets. The most relevant policy, legislative documents and more recent policy statements published by the Scottish Government include:

- The Scottish Energy Strategy (December 2017);
- The Scottish Government's declaration of a Climate Emergency (April 2019);
- The Scottish Climate Change Plan Update (2020);
- The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and the legally binding net zero target for 2045 and interim target for 2040;
- The Scottish Government's 'Programme for Government' (2023);
- The Onshore Wind Policy Statement (December 2022); and
- The Draft Energy Strategy and Just Transition Plan (January 2023).

Further deployment of renewable energy generating technology will be required throughout the 2020s in order to meet targets. As a mature technology onshore wind has a continuing and important role to play, as confirmed by national planning and energy policy and most recently in national planning policy and in the new Onshore Wind Policy Statement.

Scotland's overarching statutory target is to achieve a 100% reduction in greenhouse gas emissions to net-zero by 2045, with interim target of 90% by 2040, now provided for in the Climate Change (Scotland) Act 2009 as amended by the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019.

A large increase in the deployment of this renewable energy technology is supported through a number of UK level policy documents including the latest UK Energy White Paper (2020) and Net Zero Strategy (2021). Scottish Government policy commitments are also clear – most recently expressed in the Onshore Wind Policy Statement which will be material to the energy and national planning policy positions to be considered for the determination of the application.

9.3. National Planning Framework 4

National Planning Framework 4 (NPF4) forms part of the statutory Development Plan. Section 13 of the Planning (Scotland) Act 2019 amends Section 24 of the Town and Country Planning (Scotland) Act 1997 (the '1997 Act') regarding the meaning of the 'development plan' such that for the purposes of the 1997 Act, the development plan for an area is taken as consisting of the provisions of:

- The National Planning Framework; and
- Any Local Development Plan (LDP).

NPF4 introduces centralised development management policies which are to be applied Scotland wide, and also provides guidance to Planning Authorities with regard to the content and preparation of LDPs.

The Proposed Development would have national development status as per the policy provisions of NPF4.

In terms of development management and the application of national level policies, NPF4 states that:

"The policy sections are for use in the determination of planning applications. The policies should be read as a whole. Planning decisions must be made in accordance with the development plan, unless material considerations indicate otherwise. It is for the decision maker to determine what weight to attach to policies on a case-by-case

basis. Where a policy states that development will be supported, it is in principle, and it is for the decision maker to take into account all other relevant policies".

The most relevant policies in NPF4 will include the following:

- Policy 1: Tackling the Climate and Nature Crisis;
- Policy 3: Biodiversity;
- Policy 4: Natural Places;
- Policy 5: Soils;
- Policy 6: Forestry, Woodland and Trees;
- Policy 7: Historic Assets and Places;
- Policy 11: Energy;
- Policy 22: Flood Risk and Water Management; and
- Policy 33: Minerals.

9.4. The Local Development Plan

The Local Development Plan (LDP) covering the application site is the Argyll and Bute LDP (adopted 28 February 2024). The new LDP replaces the Argyll and Bute LDP of 2015 and its Supplementary Guidance (March 2016) and Supplementary Guidance 2 (December 2016).

Relevant LDP policies include the following include the following:

- Policy 02 – Outwith Settlement Areas;
- Policy 04 – Sustainable Development;
- Policy 08 – Sustainable Siting;
- Policy 10 – Design: All Development;
- Policy 15 – Supporting the Protection, Conservation and Enhancement of Our Historic Built Environment;
- Policy 16 – Listed Buildings;
- Policy 19 – Scheduled Monuments;
- Policy 21 – Sites of Archaeological Importance;
- Policy 59 – Water Quality and the Environment;
- Policy 61 – Sustainable Drainage Systems (SuDS);
- Policy 70 – Development Impact on National Scenic Areas (NSAs);
- Policy 71 – Development Impact on Local Landscape Areas (LLA);
- Policy 73- Development Impact on Habitats, Species and Biodiversity;
- Policy 74 – Development Impact on sites of international importance;
- Policy 75 – Development Impact on Sites of Special Scientific Interest (SSSI) and National Nature Reserves;
- Policy 76 – Development Impact on Local Nature Conservation Sites (LNCS);
- Policy 77 – Forestry, Woodland and Trees;
- Policy 79 – Protection of Soil and Peat Resources; and
- Policy 80 – Geodiversity.

9.5. Conclusions

The Proposed Development would make a contribution to the attainment of renewable energy and electricity targets and emissions reduction at both the Scottish and UK levels and the quantification of this contribution would be described in the EIA Report.

The EIA Report will summarise the renewable energy policy framework, but the detail will be provided in a supporting Planning Statement to accompany the section 36 application which will also make reference to key policy documents such as the Onshore Wind Policy Statement (2022) which confirms the onshore wind target of an additional 12 GW of additional onshore wind capacity to be delivered by 2030.

10. Landscape and Visual

10.1. Introduction

The Landscape and Visual Impact Assessment (LVIA) will consider direct and indirect effects on landscape resources, landscape character and designated landscapes. It will examine the nature and extent of effects on existing views and visual amenity. The effects of the Proposed Development, as well as the ancillary infrastructure (access track, masts, transformers etc.), will be assessed during the construction and operational phases. The LVIA will also consider cumulative effects i.e., the incremental effects of the Proposed Development in combination with other renewable energy developments.

The LVIA will inform modifications and refinements to the layout design and will be undertaken following the approach set out in Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3). The assessment will also draw upon current good practice guidance published by NatureScot.

10.2. Legislation, Policy and Guidance

An overview of national and local planning policy is provided within Section 3 of this report. The LVIA will include a review of policies of relevance to the LVIA and will be informed by current guidance including:

- Landscape Institute (LI) and the Institute for Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA 3);
- Landscape Institute (2019) Technical Guidance Note 6/19 Visual Representation of Development Proposals;
- Natural England (2014) An Approach to Landscape Character Assessment;
- Natural England (2019) An Approach to Landscape Sensitivity Assessment;
- NatureScot (2022) Landscape Sensitivity Assessment;
- NatureScot (2022) General pre-application and scoping advice for onshore wind farms;
- Landscape Institute (2019) Technical Guidance Note 2/19 Residential Visual Amenity Assessment;
- Landscape Institute (2021) Technical Guidance Note 02/21 Assessing landscape value outside national designations;
- NatureScot (2020) General pre-application and scoping advice for onshore wind farms;
- Scottish Natural Heritage (2017) Visual Representation of Wind Farms (Version 2.2);
- NatureScot (2021) Assessing the Cumulative Impact of Onshore Wind turbine developments;
- Scottish Natural Heritage (2015) Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations;
- Scottish Natural Heritage (2017) Siting and Designing Wind Farms in the Landscape (Version 3);
- Landscape character studies and local planning policy and guidance documents including:

- Argyll and Bute Council (February 2024) Local Development Plan 2;
- Argyll and Bute Council (November 2019) Strategic Environmental Assessment: Environmental Report; and
- Argyll and Bute Council (August 2017) Landscape Wind Energy Capacity Study.

10.3. Baseline

10.3.1. Study Area

With reference to Visual Representation of Wind Farms, Version 2.2 (SNH, 2017), based on the preliminary turbine height of up to 220 m to blade tip, an initial study area of up to 45 km should be considered for the purposes of establishing a preliminary evaluation of the likely receptors. The preliminary Zone of Theoretical Visibility (ZTV) studies (Figures 10.1 to 10.4) which accompany this Scoping Report illustrate that visibility would be limited at distances greater than 20 km and unlikely to give rise to significant effects (in part due to proximity of operational and consented wind farms). A 20 km detailed study area is proposed. This is considered sufficient to identify all potentially significant landscape and visual effects that may result from the Proposed Development.

10.3.2. Site Location and Context

The Site location is described in detail in Chapter 3. The Proposed Development site lies in an area of sloping forestry in which the operational Deucheran Hill wind farm is located, approximately 7 km northwest of Carradale, in the plateau interior of the Kintyre Peninsula in Argyll and Bute. The operational Deucheran Hill Wind Farm comprises of nine turbines with tip heights between 76 to 93 metres, arranged in a tight cluster surrounded by forestry. The Site is situated within undulating moorland forest mosaic, approximately 4 km from the eastern coast and 5.5 km from the western coast of the Kintyre Peninsula. The surrounding area is sparsely settled, with little access away from the coast. The largest nearby settlement is Carradale at 7 km southeast, with further settlements including Blackwaterfoot located 19 km southeast on the Isle of Arran, Campbeltown, located approximately 21 km south and Tarbert, located approximately 23 km north, both on Kintyre. Smaller isolated villages and hamlets found dispersed along the east and west coasts of Kintyre and on nearby islands. More distant large settlements are located on nearby islands, including Brodick, Lamlash and Whiting bay on the east and southeast of the Isle of Arran between 24 – 32 km from the Site.

The wider landscape on Kintyre is characterised by low, rolling hills with large areas of patchwork forestry, open moorland and few small, incised glens which carry watercourses from upland lochs to the rocky coastline. The Kintyre Peninsula is bound to the east by the Kilbrannan Sound. The Isle of Arran is 9 km east of the Proposed Development site and rises to distinct rugged peaks with the Firth of Clyde to the east and the coast North Ayrshire on the mainland beyond. Islands and peninsulas populate outer extents of the study area to the northwest, with Cowal and the Isle of Bute rising between Loch Fyne, the Kyles of Bute and adjoining Clyde sea lochs, with landform on Cowal becoming mountainous above forested lower slopes.

The pattern of complex waterbodies and peninsulas extend into the north of the study area, with Knapdale directly north of Kintyre across West Loch Tarbert, joined by a narrow stretch of land at the head of Kintyre. Complex, rocky coastline and mosaic forestry sloping moorland extends north out of the study area, bounded by Loch Fyne to the east and the Sound of Jura to the west. In the west of the study area the Isle of Gigha at is 8 km west of the Proposed Development site and is characterised by low undulating moorland with more defined low plateau at the north surrounded by rocky coastline. Further west and northwest are the islands of Islay and Jura, which are larger land masses with largely rocky and open interiors and distinct peaks including Beinn an Oir and the Paps of Jura.

Operational wind farms are a common feature of the area of Kintyre in which the site is located. Figure 10.5 shows the distribution of cumulative wind farm development with the closest being Cour wind farm at 0.7 km north of the Proposed Development site and a number of wind farms between 10-20 km south of the Proposed Development

site. Turbine development further afield is less common, with isolated developments at 30 km to the north on Knapdale and over 45 km northeast on Cowal, with further operational turbines at 45 km east and beyond in North Ayrshire.

10.3.3. Zone of Theoretical Visibility

Zone of Theoretical Visibility (ZTV) studies have been undertaken for the preliminary scoping layout of the Proposed Development. Figure 10.1 illustrates theoretical visibility based on a 'bare earth' model and illustrates the maximum potential visibility of the turbines 220 m to tip, while Figure 10.2 displays potential visibility to turbine nacelles at 150 m, and Figures 10.3 and 10.4 incorporate above ground screening features (including woodlands, forestry and buildings) and provides a more realistic impression of likely visibility.

The ZTVs illustrate intermittent visibility in open interior areas on the Kintyre peninsula up to 20 km north of the Proposed Development and up to 15 km south, with some small patches of more distant visibility from 25 km south and beyond on the Mull of Kintyre. Coastal visibility on Kintyre is sparse, though patches of intermittent visibility are indicated between 5 – 10 km west and southwest on the west coast, and within 4 – 7 km east and southeast on the east coast. Visibility is indicated from coastal areas surrounding Claonaig and Skipness between 10 – 17 km northeast. Coastal visibility is also indicated from the southern extents of Knapdale between 12 – 18 km, with further intermittent inland visibility indicated across Knapdale between 20 – 35 km to the north of the site.

Potential visibility is widespread in coastal areas with open aspects facing the site, including the east coast of the Isle of Gigha between 9 – 13 km to the west, and between 8 km east and 23 km southeast along the west coast of the Isla of Arran, with further visibility indicated from elevated areas in central and west of Arran. More distant visibility is noted in the west and northwest of the study area from the east coast and east facing landforms on the isles of Islay and Jura between 27 – 35 km west and up to 50 km northwest.

Further distant visibility is indicated from the South Cowal coast and the west coast of the Isle of Bute between 25 – 30 km northeast of the site, with patches of elevated visibility indicated up to 45 km northwest on Cowal. Distant visibility is also indicated on facing west facing coastal hills of the mainland in North Ayrshire at over 44 km east of the site.

10.3.4. Landscape Character

The Site coincides with NatureScot Landscape Character Area Type (LCT) 39: Plateau Moor and Forest - Kintyre. The area is described as an "extensive area of upland plateau with rounded ridges, craggy outcrops and irregular slopes". The area tends to be divided by large scale forestry with open areas of moorland and upland lochs between and occasional narrow winding glens. The area is sparsely settled with few buildings, no field boundaries and limited interior access.

Adjacent character areas include LCT 53: Rocky Coastline – Argyll, occupying low, linear sections of coast on the Kintyre and Knapdale peninsulas which intersect the host LCT and LCT 36: Coastal Glens which is located 0.8 km to the east of the Proposed Development and characterised by small scale glens which connect the upland mosaic to the coast. In addition to these, LCT 52 Coastal Plain – Argyll coincides with a small flat area of coastland approximately 5 km west of the Proposed Development; LCT 59: Raised Beach Coast and Cliffs and LCT 83: Rugged Uplands – Ayrshire coincides with the northern extends of the Isle of Arran from 9 km to the east of the Proposed Development; and LCT 55: Coastal Parallel ridges coincides with land on the Isle of Gigha from 9 km west of the Proposed Development.

Existing wind farms are a key influence on character within 20 km of the Site.

10.3.5. Visual Amenity

The site is located on forested plateau which has a general eastern aspect, sloping from the interior plateau of the Kintyre Peninsula to the coast of the Kilbrannan Sound. As well as visual effects on nearby settlements, roads and recreational routes on the Kintyre Peninsula, effects on adjacent islands are a key consideration.

Nearby settlements on Kintyre include Carradale to the southeast, Muasdale to the southwest, Tayinloan to the west and Clachan to the north. As indicated on Figures 10.1 to 10.4, there would be no visibility from most of these settlements with the exception of Carradale, where the ZTV indicates intermittent patches of visibility of the Proposed Development. Beyond Kintyre, several settlements within 15 km are indicated to have potential visibility to the Proposed Development including Pirnmill and Catacol and associated dispersed settlement to the east on the Isle of Arran, and Ardminish to the west on the Isle of Gigha.

A number of roads pass within 10 km of the site, including the A83 which connects Campbeltown to Tarbert via the west Kintyre coastline before extending north toward Loch Fyne, the B842 which connects Campbeltown to Claonaig via the east Kintyre coast, the B8001 which connects the A83 at Kennacraig to Skipness via Claonaig, local routes on the west coast of Arran and on Gigha and other local routes connecting major routes to more remote areas of the landscape. The Kintyre 66 tourist route is a circuit around the Kintyre peninsula, following the A83, B842 and B8001.

There are several ferry routes within the study area which are indicated to have potential visibility as shown on figure 10.1. These include the Gigha ferry between Tayinloan and Ardminish, Islay ferry between Kennacraig and Port Askaig, Arran ferry between Claonaig and Lochranza (summer only), Jura ferry between Tavvallich and Craighouse (summer only), Campbeltown to Brodick Ferry (summer only) and the Arran ferry from Tarbert to Lochranza (winter only).

The Kintyre Way passes through the site, between the east and west coast of Kintyre, and extends north to Tarbert and South to the Mull of Kintyre. Other long distance routes within the study area include the Arran Coastal Way, which is a circuit of the Isle of Arran, passing as close as 8.7 km to the Proposed Development and the more distant Cowal Way at over 27 km northeast and the Westland Way on the Isle of Bute at over 32 km from the Proposed Development.

The nearest core paths to the site consist of a network of routes branching off the Kintyre Way, with further nearby core paths at Narachan Hill adjacent to the site to the north.

10.3.6. Landscape Designations

The North Arran NSA is the closest Nationally designated landscape at 6.7 km east of the Proposed Development. Other Nationally designated landscape in and near to the study area include the:

- Knapdale NSA at 22.5 km north;
- Jura NSA at 27.3 km northwest;
- Kyles of Bute NSA at 32.4 km northeast; and
- Loch Lomond and the Trossachs National Park at 48.3 km northeast and outwith the LVIA study area.

Locally designated landscapes found coinciding within the proposed 20 km detailed study area include the following Argyll and Bute Council Local Landscape Areas (LLA) and North Ayrshire Council Special Landscape Areas (SLA):

- West Kintyre Coast LLA at 3.8 km west;
- East Kintyre Coast LLA at 5.2 km east;
- North Arran SLA at 8.7 km east; and
- Knapdale/Melfort LLA at 11.5 km north.

There are several designated Garden and Designed Landscape (GDL) within the study area, including Achamore House at 10.1 km west, Brodick Castle located 23.5 km east, Stonefield Castle Hotel, at 25 km north, Mount Stuart at 33.5 km northeast, Castle Toward at 39 km northeast and Kelburn Castle at 43 km northeast. As illustrated by Figure 10.1 there is potential visibility from Achmore House, though no potential visibility from any other the GDLs. GDLs are designated for their cultural heritage importance rather than just their scenic quality. In respect of the LVIA these areas will be considered as indicators of increased landscape value while effects on the setting and cultural heritage value of these may be considered within the Cultural Heritage chapter of the EIAR.

10.4. Assessment of Environmental Impacts and their Significance

10.4.1. Assessment Methodology

The LVIA will inform modifications and refinements to the layout design and will be undertaken following the approach set out in GLVIA3.

The significance of any identified landscape or visual effect will be assessed as major, major/moderate, moderate, moderate/minor, minor or negligible. Where the effect is classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. Where 'Moderate' effects are predicted, professional judgement will be applied to ensure that the potential for significant effects arising has been thoroughly considered. A summary of the primary judgements is provided below.

10.4.2. Sensitivity

Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor as illustrated by Tables 10.1 and 10.2 below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted. A slightly greater weight is given to susceptibility in judging sensitivity of visual receptors as indicated below:

Table 10.1: Landscape Sensitivity

LANDSCAPE RECEPTORS		Susceptibility		
		High	Medium	Low
Value	National	High	High/Medium	Medium
	Regional	High/Medium	Medium	Medium/Low
	Community	Medium	Medium/Low	Low

Table 10.2: Visual Sensitivity

VISUAL RECEPTORS		Susceptibility		
		High	Medium	Low
Value	National	High	High/Medium	Medium
	Regional	High/Medium	High/Medium	Medium/Low
	Community	Medium	Medium/Low	Low

10.4.3. Magnitude

Scale of effect is the primary factor in determining magnitude; which may be higher if the effect is particularly widespread and/or long lasting, or lower if it is constrained in geographic extent and/or timescale. The table below illustrates how this judgement is considered as a two-step process.

Table 10.3: Magnitude of Change

Scale / extent	Large	Medium	Small	Negligible
Wide	Substantial			
Intermediate		Moderate		
Localised			Slight	
Limited				Negligible

Stage 1 Result / Duration	Substantial	Moderate	Slight	Negligible
Permanent	Substantial			
Long-term		Moderate		
Medium-term			Slight	
Short-term				Negligible

Where magnitude is judged to lie between levels, an intermediate assessment will be adopted.

10.4.4. Significance of Effects

The significance of any identified landscape or visual effect is assessed as major, moderate, minor or negligible. These categories are based on the consideration of sensitivity with the predicted magnitude of change. The table below is not used as a prescriptive tool and illustrates the typical outcomes, allowing for the exercise of professional judgement. In some instances, a particular parameter may be considered as having a determining effect on the analysis.

Table 10.4: Significance

		Magnitude of Change			
		Substantial	Moderate	Slight	Negligible
Receptor Sensitivity	High	Major	Major/ Moderate	Moderate	Minor
	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor/ Negligible
	Low	Moderate	Moderate/ Minor	Minor	Negligible

Where the effect has been classified as Major or Major/Moderate this is considered to be equivalent to likely significant effects referred to in the EIA Regulations. The conclusion that some effects are 'significant' should not be taken to imply that they should warrant refusal in any decision making process.

10.4.5. Beneficial/Adverse

Landscape and visual effects can be beneficial or adverse and, in some instances, may be considered neutral. Neutral effects are those which overall are neither adverse nor positive but may incorporate a combination of both.

Taking a precautionary stance, changes to rural landscapes involving construction of man-made objects of a large scale are generally considered to be adverse.

10.4.6. Landscape Character Assessment

Given the varied information sources available it is proposed that the character areas included within the Scottish Natural Heritage (2019): National Landscape Character Assessment are treated as the landscape character receptors, supplemented with information from survey observations.

In line with national policy, as discussed at 'Baseline conditions' above, it is proposed that the scope of assessment focuses only on those effects likely to be significant. Clear and transparent justification will be provided for those receptors scoped out i.e. non-significant effects.

10.4.7. Visual Assessment

The assessment will be a receptor group-based assessment. The assessment will include potential effects on settlement areas and routes, including roads, ferries, railway lines, walking and cycle routes within the detailed study area where potential visibility is indicated by the ZTV (see Figure 10.3).

The assessment will focus on those receptors where there may be the potential for significant effects, which is likely to be those within the detailed study area, though outlying receptors may be selected due to their importance.

10.4.8. Viewpoints

The assessment will be supported by a number of representative viewpoints. The list of viewpoint locations proposed to be included are detailed in Table 10.5 below and illustrated on Figures 10.1 to 10.3. Viewpoints have not been 'ground truthed' at this stage, so grid references are approximate, and locations may be micro sited to obtain the most representative view or greatest extent of views.

In addition to the viewpoints proposed in Table 10.5, we also propose to include assessments from key ferry routes in the area. Due to the fast moving nature of the ferries, we are unable to produce visualisations to the NatureScot standards and therefore proposed a single frame photomontage to be included on the routes to Gigha, Islay and Arran.

Table 10.5: Proposed Assessment Viewpoints

VP Number	VP Name	Grid reference	Distance & Direction
1	Kintyre Way	173348 E, 643850 N	1.5 km SW
2	B842, Kintyre Way	179537 E, 641357 N	3.1 km E
3	Deer Hill (Cnoc nan Gabhar)	180287 E, 639627 N	4.3 km SE
4	Carradale Bay, East Kintyre Coast LLA	180381 E, 637297 N	5.9 km SE
5	Kintyre Way, West Kintyre Coast LLA	168987 E, 649368 N	6.9 km WNW
6	Pirnmill, Arran Coastal Way, North Arran NSA, North Arran SLA	187265 E, 644356 N	8.9 km E
7	Glenbarr	167093 E, 636677 N	10 km SW
8	Ardminish, Gigha	164876 E, 648723 N	10.2 km W
9	B842 north of Clachan	177930 E, 657570 N	10.6 km N
10	Local road, Gigha	165589 E, 652469 N	11.5 km W
11	Mullach Buidhe, North Arran NSA, North Arran SLA	190193 E, 642775 N	12.2 km E
12	Claonaig Ferry terminal	187555 E, 656092 N	13.2 km NE
13	Newton Point, North Arran NSA	193134 E, 651543 N	15.6 km NE
14	B8024, Knapdale/Melfort LLA	171453 E, 661696 N	15.9 km N
15	Drumadoon Point, Arran Coastal Way, North Arran SLA	188318 E, 629079 N	17.2 km NE
16	Goatfell, North Arran NSA, North Arran SLA	199137 E, 641551 N	20.8 km E
17	Kintyre Way south of Machrihanish	161798 E, 617779 N	27.9 km S
18	A846, Jura, Jura NSA	152862 E, 667855 N	31.4 km NW
19	B875, Westland Way, Bute SLA	203805 E, 666612 N	32.4 km NE

10.4.9. Visualisations

The assessment will be supported by a series of photomontages and wireframes from agreed viewpoint locations. Visualisations from each viewpoint will be prepared in accordance with NatureScot guidance Visual Representation of Windfarms: Version 2.2 (2017).

Photomontages will be prepared for viewpoints mainly within a 30 km radius or further if it is necessary to include a notable recognised viewpoint. Ancillary elements such as tracks, sub-station, BESS and control buildings will only be shown from close viewpoints where these will be discernible and have a bearing on the assessment of effects. From more distant viewpoints ancillary elements are likely to be visible as minor elements.

10.4.10. Cumulative Assessment

In line with the EIA regulations and NatureScot guidance Assessing the Cumulative Impact of Onshore Wind Energy Developments (2021) the assessment will consider other wind farms within the detailed LVIA study area including those which are operational, consented and those for which a planning application has been submitted but which are yet to be determined. Schemes that have submitted an EIA Scoping report will not generally be considered in detail within the assessment due to often limited details available at scoping stage.

An initial cumulative search will be undertaken for 45 km study area and all other wind farm developments within this area identified, as shown on Figure 10.4. Turbines under 50 m in height will only be included where they lie within 5 km of the proposed turbines. The proposed scope of the cumulative assessment will focus on likely significant effects which may influence the outcome of the consenting process. It is therefore likely that the cumulative assessment will focus on sites within 20 km of the Proposed Development as these will either have more influence on design and potentially may give rise to significant cumulative effects.

Operational and consented sites will form part of the baseline and future baseline respectively for the assessment. Sites in planning will be considered as separate potential cumulative scenarios.

10.4.11. Night-time Assessment

Turbines of 150 m or greater tip height would require visible aviation lighting. An agreed Lighting Strategy will form the basis of the assessment and visual material presented. An assessment of night-time impacts on landscape and visual receptors will be carried out and included in the LVIA. The proposed study area for night-time effects is 15 km from the turbines. The assessment will be supported by a ZTV study illustrating the extent of visibility of the lights and the number of lights visible. The consideration of night time effects on any landscape or visual receptors will be informed by 'in the field' assessment and any qualities or characteristics that may be susceptible to lighting. Visualisations will consist of wireline diagrams for all viewpoints indicating the number of lights likely to be visible. As indicated by NatureScot, 2-3 night-time viewpoints with photomontages will be selected to represent receptor groups most likely to be affected. These are considered to be areas where people are likely be active during hours of darkness (typically around settlements) and any nearby Dark Sky Parks or Dark Sky Discovery Sites and represent a range of receptors potentially affected. Proposed Night-time viewpoints include:

- VP6: Pirnmill; and
- VP8 Ardmish.

Night-time photomontages will be based on photography taken approximately 30 minutes after sunset, which is the point at which any existing aviation lighting is required to switch on.

Residential Visual Amenity Assessment

There are no residential properties within 2 km of the Proposed Development and therefore a separate residential visual amenity is not proposed.

10.5. Potential Effects

10.5.1. Construction

Potential construction impacts would be limited to the site and immediate surrounding area for the duration of the construction phase. Effects may spread slightly as construction nears completion where larger installation equipment would be required.

10.5.2. Decommissioning

Effects during decommissioning would be similar to that of the construction phase.

10.5.3. Operation

Operational Effects will form the basis of the LVIA. Initial studies, analysis and receptor selection is undertaken in line with the operational phase of the Proposed Development.

Desk based studies have been undertaken including a preliminary ZTV to enable the identification and selection of proposed representative viewpoints which assist in assessing effects on receptor groups for the LVIA.

The proposed representative viewpoints are listed in Table 10.5 and shown on Figures 10.1 to 10.4.

Following scoping and agreement with consultees regarding the final selection of viewpoints, further surveys will be undertaken within the detailed study area and any locations in the wider search area where significant landscape and visual effects may occur.

Viewpoint photography will be undertaken to record the baseline landscape and views towards the Site. A 360 degree sweep of photography will be taken at each viewpoint location.

Table 10.6: Receptors Scoped In

Receptor/Element	Phase	Justification
Landscape Character Types within 15 km radius	Construction and Operation	Potential for significant effects on landscape character. Significant effects on landscape character beyond 15 km are unlikely. Assessment on landscape character will be undertaken in a proportionate manner.
North Arran NSA	Construction and Operation	Potential for significant effects on the characteristics of the Special Landscape Area
Carradale	Construction and Operation	Potential for significant effects on visual amenity of road users, pedestrians, and residents in the surrounding area
Pirnmill & associated settlement, Arran	Construction and Operation	Potential for significant effects on visual amenity of road users, pedestrians, and residents in the surrounding area
Ardminish, Gigha	Construction and Operation	Potential for significant effects on visual amenity of road users, pedestrians, and residents in the surrounding area
Catacol & associated settlement, Arran	Construction and Operation	Potential for significant effects on visual amenity of road users, pedestrians, and residents in the surrounding area
Tormore – north of VP15. And associated settlement, Arran	Construction and Operation	Potential for significant effects on visual amenity of road users, pedestrians, and residents in the surrounding area
B842 between Carradale and Claonaig and north to Skipness	Construction and Operation	Potential for significant effects on visual amenity of road users on this section of the route
Tayinloan to Ardminish ferry route	Construction and Operation	Potential for significant effects on visual amenity of road users on this section of the route
Claonaig to Lochranza ferry route	Construction and Operation	Potential for significant effects on visual amenity of road users on this section of the route
Kennacraig to Port Askaig, ferry route	Construction and Operation	Potential for significant effects on visual amenity of road users on this section of the route

Receptor/Element	Phase	Justification
Kintyre Way	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
Arran Coastal Way	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
Core Paths local to the Kintyre way within 5 km radius	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape
Hillwalkers on Arran	Construction and Operation	Potential for significant effects on visual amenity of users of recreational resources in the surrounding landscape

On the basis of the work undertaken to date, the national policy context, the professional judgement of the assessment team and experience from similar projects and consultation responses, it is proposed that the following receptors can be scoped out.

Table 10.7: Matters Scoped Out

Receptor/Element	Phase	Justification
Knapdale NSA	Construction and Operation	As shown on Figures 10.1 and 10.2 theoretical visibility from NSA is very limited at distance of over 27 km from the Proposed Development. At this range, significant effects on Special Qualities are unlikely therefore a detailed assessment is not required.
Jura NSA	Construction and Operation	As shown on Figures 10.1 and 10.2 theoretical visibility from NSA is at distance of over 28 km from the Proposed Development. At this range, significant effects on Special Qualities are unlikely therefore a detailed assessment is not required.
Kyles of Bute	Construction and Operation	As shown on Figures 10.1 and 10.2 theoretical visibility from NSA is very limited at distance of over 35 km from the Proposed Development. At this range, significant effects on Special Qualities are unlikely therefore a detailed assessment is not required.
Wild Land Areas	Construction and Operation	As illustrated in Figures 10.1 and 10.2 there are two Wild Land Areas within the initial 45 km study area. The Proposed Development is not located in any of the WLA. NPF4 advises that the effects of development outside Wild Land Areas is not a significant consideration. A Wild Land assessment is therefore not proposed for any of the seven WLA.
West Kintyre Coast LLA	Construction and Operation	Due to the very limited extent of potential visibility, as illustrated in Figures 10.1 to 10.4, the potential for significant effects on the

Receptor/Element	Phase	Justification
		characteristics of the Special Landscape Area is considered unlikely.
East Kintyre Coast LLA	Construction and Operation	Due to the very limited extent of potential visibility, as illustrated in Figures 10.1 to 10.4, the potential for significant effects is considered unlikely.
Knapdale/Melfort LLA	Construction and Operation	Potential for significant effects on the characteristics of the Special Landscape Area is considered unlikely due to the extent of tree cover and forestry and intervening distance.
SLA Local Landscape Designations over 20 km from the site	Construction and Operation	Due to limited visibility and intervening distance, the following Special Landscape Areas are scoped out: Mull of Kintyre LLA, South & East Islay LLA, South Cowal SLA, Bute SLA, Holy Island SLA, Great Cumbrae SLA, Little Cumbrae SLA, Jura LLA, East Loch Fyne LLA, West Loch Fyne LLA and North Ayrshire Mainland SLA
Settlements on the A83	Construction and Operation	As illustrated in Figures 10.1 to 10.4 there would be no visibility from Clachan, Tayinloan or Muasdale.
Lochranza	Construction and Operation	As illustrated in Figure 10.1 there would be no visibility from the Settlement
Campbeltown & nearby settlements	Construction and Operation	As illustrated in Figures 10.1 to 10.4 there would be no visibility from Campbeltown or nearby settlements including Stewarton, Drumlemble, Kilchenzie Peninver and Machrihanish
NCN 73 between Brodick and Lochranza	Construction and Operation	As illustrated in Figures 10.1 to 10.4 there would be no visibility from this section of the route.
Cumulative – small developments	Operation	Turbines below 50 m are scoped out of the assessment.
Cumulative – small developments	Operation	Single turbines of any size beyond 10 km of the Proposed Development are scoped out of the assessment.

10.6. Scoping Question to Consultees

The following question is directed to consultees:

- **Question 7:** Do consultees agree with the proposed proportionate approach to the LVIA using a 45 km initial study area and focussing on a 20 km detailed study area?
- **Question 8:** Do consultees agree with the proposed assessment viewpoints that will be used in the LVIA?
- **Question 9:** Do consultees agree with the proposed approach to day-time and night-time photography and visualisations?
- **Question 10:** Do consultees agree with the proposed scope of the cumulative assessment including a 45 km initial search area and inclusion of turbines under 50 m in height only within 5 km of the Proposed Development?
- **Question 11:** Do consultees agree with the proposed approach to night-time assessment and the proposed night-time viewpoints?
- **Question 12:** Do consultees agree with the matters proposed to be scoped out of the LVIA?

11. Ecology

11.1. Introduction

This section of the scoping report sets out the proposed approach to the assessment of potential effects on important ecological features (IEFs). IEFs are habitats and species (except birds) that are protected by legislation, which are of high conservation importance or are particularly sensitive to impacts. This will allow for an Environmental Impact Assessment Report (EIAR) that focuses on features which could be significantly affected, or for which the predicted effects are currently unknown. Important ornithological features (IOFs) are discussed separately in Section 12 Ornithology.

This report provides details on the baseline ecology surveys, which were undertaken at the proposed Deucheran Hill 2 Wind Farm (the “Proposed Development”). Ecological surveys which have been undertaken to date include a Phase 1 habitat survey, National Vegetation Classification survey (NVC), protected species surveys and static bat detector surveys. Results of these surveys have been used to inform scoping within the proposed Environmental Impact Assessment (EIA) and assessment methods. Additional surveys for fish will be undertaken prior to submission of the EIAR.

This section also provides information on statutory sites of international importance, upon which the Proposed Development may have a ‘Likely Significant Effect’ (LSE). A screening process will be undertaken alongside the EIA to determine whether the predicted impacts of the Proposed Development will result in an LSE. The screening process will allow the competent authority to determine whether an Appropriate Assessment (AA) will be required.

11.2. Site Description

As highlighted in Section 3.1 the Proposed Development site lies approximately 7 km northwest of Carradale, on an area of land on the Kintyre Peninsula in Argyll and Bute.

The Proposed Development site comprises of the existing nine turbine Deucheran Hill Wind Farm which has been operational since December 2001. The Proposed Development is for a repowering and extension of the site which will involve the removal of the existing nine turbines and installation of up to 23 new, bigger, turbines. Further ecological works including a local records centre search and environmental DNA (eDNA) surveys are to be undertaken prior to submission of the EIAR.

The Proposed Development site is principally dominated by woodland including commercial conifer plantation, recently felled conifer areas and semi-natural broadleaved woodland, though areas of heathland, blanket bog and unimproved grasslands are also present. The “Scoping Site Boundary” includes areas for proposed habitat management and biodiversity enhancements as well as the “Turbine Development Area” where the area of proposed turbines will be sited within the higher ground, as shown in Figure 3.2.

11.3. Legislation and Guidance

The proposed ecological baseline surveys and preliminary assessment presented in this report will be carried out with reference to a number of national and international policy documents. Legislative and guidance documents with relevance to ecology are listed below:

11.3.1. Legislation

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EC Habitats Directive)¹;
- Environmental Impact Assessment Directive 85/337/EEC (the EIA Directive)²;
- The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations)³, which transposes the Habitats Directive into UK law;
- The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007⁴;
- The Conservation of Habitats and Species (Amendment) Regulations 2012⁵, relating to reserved matters in Scotland;
- Wildlife and Countryside Act (WCA) 1981 (as amended)⁶;
- The Nature Conservation (Scotland) Act 2004⁷;
- The Wildlife and Natural Environment (Scotland) Act 2011⁸;
- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017⁹, which transpose the EIA Directive into the Scottish planning system; and
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017¹⁰.

¹ Legislation.gov.uk. (2011). *Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora*: Available from - <https://www.legislation.gov.uk/eudr/1992/43/contents> . [Accessed 19/08/2024]

² Europa.eu. (2014). *Environmental Impact Assessment - EIA - Environment - European Commission*: Available from - <https://ec.europa.eu/environment/eia/eia-legalcontext.htm> . [Accessed 19/08/2024]

³ Legislation.gov.uk. (2017). *The Conservation of Habitats and Species Regulations 2017*: Available from - <https://www.legislation.gov.uk/ukSI/2017/1012/contents/made> . [Accessed 19/08/2024]

⁴ Legislation.gov.uk. (2022). *The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007*: Available from - <https://www.legislation.gov.uk/ukSI/2007/1843/contents> [Accessed 19/08/2024]

⁵ Legislation.gov.uk. (2012). *The Conservation of Habitats and Species (Amendment) Regulations 2012*: Available from - <https://www.legislation.gov.uk/ukSI/2012/1927/contents/made> [Accessed 19/08/2024]

⁶ Legislation.gov.uk. (2011). *Wildlife and Countryside Act 1981*: Available from - <https://www.legislation.gov.uk/ukpga/1981/69> . [Accessed 19/08/2024]

⁷ Legislation.gov.uk. (2019). *Nature Conservation (Scotland) Act 2004*: Available from - <https://www.legislation.gov.uk/asp/2004/6/contents> . [Accessed 19/08/2024]

⁸ Legislation.gov.uk. (2022). *Wildlife and Natural Environment (Scotland) Act 2011*: Available from - <https://www.legislation.gov.uk/asp/2011/6/contents/enacted> . [Accessed 19/08/2024]

⁹ Scottish Government. (2017). *Environmental assessment: Environmental Impact Assessment (EIA) - gov.scot*: Available from - <https://www.gov.scot/policies/environmental-assessment/environmental-impact-assessment-eia/> . [Accessed 19/08/2024]

¹⁰ Legislation.gov.uk. (2017). *The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017*: Available from - <https://www.legislation.gov.uk/ssi/2017/101/contents/made> . [Accessed 19/08/2024]

11.3.2. National policy guidance

- National Planning Framework 4 (NPF4) (adopted February 2023)¹¹
- Planning Advice Note (PAN) 51: Planning, Environmental Protection and Regulation¹²;
- PAN 60: Planning for Natural Heritage¹³;
- PAN 1/2013 – Environmental Impact Assessment¹⁴;
- Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives: Scottish Executive Circular 6/1995 as amended¹⁵; and
- Scottish Planning Policy¹⁶.

11.3.3. Other guidance

Particular attention has also been given to the guidance documents listed below, that are applicable to assessing the effects of wind farm developments on ecology. Reference has also been made to guidance documents through the report where relevant:

- European Protected Species, Development Sites and the Planning System: Interim guidance for local authorities on licensing arrangements¹⁷;
- Guidelines for Ecological Impact Assessment in the UK and Ireland¹⁸;
- Land Use Planning System Scottish Environment Protection Agency (SEPA) Guidance Note 4: Planning Guidance on Windfarm Developments¹⁹;
- Land Use Planning System SEPA Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems²⁰;
- Good Practice during Wind Farm Construction²¹;
- General pre-application and scoping advice for onshore wind farms²²;
- Bats and Onshore Wind Turbines (January 2019)²³ and (August 2021)²⁴;

¹¹ Scottish Government (2023) National Planning Framework 4 – Available from - <https://www.gov.scot/publications/national-planning-framework-4/> [Accessed 19/08/2024]

¹² Scottish Government. (2006). *PAN 51: Planning, Environmental Protection and Regulation*. Scottish Government, Edinburgh.

¹³ Scottish Government. (2000 (updated 2008)). *PAN 60: Planning for Natural Heritage*. Scottish Government, Edinburgh.

¹⁴ Scottish Government. (2013 (updated 2017)). *PAN 1/2013 – Environmental Impact Assessment*. Scottish Government, Edinburgh.

¹⁵ Scottish Executive. (1995 (updated 2000)). *Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives*. Scottish Executive, Rural Affairs Department, Edinburgh.

¹⁶ Scottish Government. (2014). *Scottish Planning Policy (SPP)*. Scottish Government, Edinburgh.

¹⁷ Scottish Executive. (2001 (updated 2006)). *European protected species, development sites and the planning system: Interim guidance for local authorities on licensing arrangements*. Scottish Executive, Edinburgh.

¹⁸ CIEEM. (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

¹⁹ SEPA. (2017a). *Land Use Planning System Guidance Note 4: Planning guidance on windfarm developments*. Appendix 2. Issue 9: 11 September 2017.

²⁰ SEPA. (2017b). *Land Use Planning System Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems*. Version 3: 11 September 2017.

²¹ Scottish Renewables, SNH, SEPA, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science, AEECoW. (2019). *Good practice during windfarm construction*. Version 4.

²² NatureScot (August 2022) *General pre-application and scoping advice for onshore wind farms*: <https://www.nature.scot/doc/general-pre-application-and-scoping-advice-onshore-wind-farms>.

²³ SNH (2019) *Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation*.

²⁴ NatureScot (August 2021)- *Bats and onshore wind turbines - survey, assessment and mitigation*: <https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation>.

- Argyll and Bute Planning Service, Biodiversity Technical Note for Planners and Developers, February 2017; and
- Scottish Biodiversity List²⁵ (SBL)²⁶.

11.4. Consultation

No consultation in relation to ecology has been undertaken, to date, on behalf of the Proposed Development.

11.5. Baseline Description

11.5.1. Methods

11.5.1.1. Desk-based review

Designated sites

A desk study was undertaken using online search tools^{27,28} in order to assess any connectivity between ecological features recorded at the Proposed Development with populations protected on designated sites. As shown in Figure 11.1, this included all sites with an international designation for ecological interests within a 10 km radius and nationally designated sites within 5 km of the Proposed Development:

- Special Areas of Conservation (SACs);
- Sites of Special Scientific Interest (SSSIs); and
- National Nature Reserves (NNR).

Species of Note

No records have yet been requested from the local environmental records centre (Argyll Biological Records Centre); however, prior to preparation of the full EIAR the following records will be requested for within 2 km of the Proposed Development, extended to 10 km for bats:

- Locally designated sites;
- Habitats listed in Annex I and species listed in Annex II under the Habitats Regulations⁵;
- Species listed under Schedules 5, 8 and 9 of the WCA⁷; and
- Species and habitats as listed under the SBL²⁵.

11.5.1.2. Relevant Contextual Data

A review of all wind farm applications with survey data from 2014 to 2024 from within a 10 km radius of the Proposed Development, will be undertaken to inform the EIAR as part of the Cumulative Impact Assessment (CIA). These applications will be identified using the local planning application portal²⁹ and all relevant ecological EIAR Chapters will be reviewed.

²⁵ NatureScot. (n.d.). *Scottish Biodiversity List*: Available from - <https://www.nature.scot/doc/scottish-biodiversity-list> . [Accessed 19/08/2024]

²⁶ The SBL forms a list of species and habitats of importance for biodiversity conservation in Scotland, produced by the Scottish Government.

²⁷ DEFRA (2019). *Magic Map Application* Defra.gov.uk: Available from - <https://magic.defra.gov.uk/MagicMap.aspx> . [Accessed 19/08/2024]

²⁸ Sitelink -NatureScot.: Available from - <https://sitelink.nature.scot/home>. [Accessed 19/08/2024]

²⁹ Available from - <https://publicaccess.argyll-bute.gov.uk/online-applications/search.do?action=simple&searchType=Application> [Accessed 19/08/2024]

11.5.1.3. Baseline Surveys

Phase 1 and National Vegetation Classification Survey

An extended Phase 1 habitat survey and NVC survey was undertaken in June – September 2023 within the Site Boundary in accordance with standard methodology^{30,31}.

The extended Phase 1 survey characterised the habitats present on site and identified any habitats of significant conservation value and/or protected plant species, and suitability for protected species in order to inform the requirement for further species-specific survey work. Target notes were taken on protected species signs, habitat and sightings as appropriate. Any non-native invasive species such as Japanese knotweed or giant hogweed were also recorded as target notes.

NVC surveys define the vegetation of selected areas more precisely and identify key sensitive areas such as potential Ground Water Dependant Terrestrial Ecosystems (GWDTE). NVC surveys classify plant communities and sub-communities present on site according to a system developed by Rodwell (1991a; 1991b; 1992; 1995 and 2000)^{32,33,34,35,36}. A standard NVC field survey typically consists of vegetation mapping, with representative quadrats taken in communities of particular interest or where classification is challenging³⁷.

Protected mammals

Protected mammal surveys were undertaken between June and September 2023 to determine the presence of mammal species for which there is legal protection within the Site Boundary. There is potential for badger, otter, water vole, red squirrel and pine marten to be present, and surveys followed standard methods for each species,^{38,39,40,41,42,43} with surveys undertaken at suitable times of the year by an experienced ecologist.

Occupied and unoccupied buildings or ruins, structures such as bridges, quarries and forested areas with mature or dead trees all have the potential to provide suitable locations for roosting or hibernating bats. Any such features within the Site Boundary were surveyed, and their suitability to support roosting bats determined, along with any evidence of occupation. Surveyors also searched for any other potential roost structures, e.g. mine shafts or bridges, which may have been present.

³⁰ JNCC. 2010. Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit. Joint Nature Conservation Committee, Peterborough

³¹ Rodwell, J.S. (2006) NVC Users' Handbook, JNCC, Peterborough, ISBN 978 1 86107 574 1.

³² Rodwell, J.S. (ed.) 1991. British Plant Communities. Volume 1. Woodlands and scrub. Cambridge University Press

³³ Rodwell, J.S. (ed.) 1991. British Plant Communities. Volume 2. Mires and heath. Cambridge University Press

³⁴ Rodwell, J. S. (ed.) 1992. British Plant Communities. Volume 3. Grassland and montane communities. Cambridge University Press.

³⁵ Rodwell, J.S. (ed.) 1995. British Plant Communities. Volume 4. Aquatic communities, swamps and tall-herb fens. Cambridge University Press.

³⁶ Rodwell, J.S. (ed.) 2000. British plant communities. Volume 5. Maritime communities and vegetation of open habitats. Cambridge University Press.

³⁷ Rodwell, J.S. (ed.) 2006. National Vegetation Classification: Users' handbook (JNCC National Vegetation Classification Field Guide Series)

³⁸ Chanin, P. (2003). *Monitoring the Otter Lutra. Conserving Natura 2000 Rivers: Monitoring Series No. 10*. English Nature, Peterborough.

³⁹ Sargent, G. & Morris, P. 2003. How to Find & Identify Mammals. The Mammal Society, London

⁴⁰ Strachan, R., Moorhouse, T. & Gelling, M., 2011. The Water Vole Conservation Handbook. Third Edition, Wildlife Conservation Research Unit, University of Oxford, Abingdon

⁴¹ Bang, P. & Dahlstrøm, P. 2001. Animal Tracks and Signs. Oxford University Press, Oxford.

⁴² Sargent, G., Morris, P. and Troughton, G. 2003. How to Find and Identify Mammals, 3rd Edition. The Mammal Society, Southampton.

⁴³ Cresswell, W. J., Birks, J. D. S., Dean, M., Pacheco, M., Trehwella, W. J., Wells, D. & Wray, S. (eds) (2012) UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation. Mammal Society, Southampton.

Static Bat Detector Surveys

As 23 turbines are proposed, 14 full spectrum Anabat Swift static detectors were deployed in 2023, in line with NatureScot guidance²⁴. Where possible, detectors were placed within 200 m of proposed turbines; however as the turbine locations are still being refined locations were chosen to best represent habitats present within the Turbine Development Area, as shown in Figure 11.2. Distances from the static bat detectors to the current proposed turbines are included in Table 11.1 below.

Table 11.1: Bat detector deployment location habitat details and distances from current proposed turbines

Location	Habitat Type	Habitat	Nearest proposed turbine*	Approx. distance from nearest proposed turbine (m)*
1	Open	Woodland and shrub	T21	310
2	Open	Woodland and shrub; Grassland	T18	175
3	Open	Woodland and shrub; Grassland	T16	58
4	Open	Woodland and shrub; Grassland	T12	180
5	Cluttered	Woodland and shrub	T17	85
6	Open	Woodland and shrub; Tall herb and fern	T8	306
7	Open	Woodland and shrub; Grassland; Tall herb and fern	T7	198
8	Cluttered	Woodland and shrub; Grassland	T22	35
9	Cluttered	Woodland and shrub; Rock exposure	T20	170
10	Cluttered	Woodland and shrub	T3	365
11	Cluttered	Woodland and shrub; Swamp	T2	309
12	Open	Woodland and shrub	T5	274
13	Open	Woodland and shrub; Heathland; Grassland	T14	131
14	Open	Woodland and shrub	T11	566

Source: Natural Power, *based on current turbine locations

Static detectors were deployed for a minimum of ten consecutive nights per deployment, during spring (April-May), summer (June - August) and autumn (September – October). To aid interpretation of all bat activity data, robust site-specific weather data were recorded for each period through the deployment of a weather station.

Analysis was undertaken at species level (excepting *Myotis* sp.) using Kaleidoscope automatic identification software. *Myotis* sp. and in some cases *Pipistrellus* sp. were not identified further than genus due to the overlap in call-frequency between species. Signal parameters used to identify potential bat calls and filter out noise calls within the Kaleidoscope software were set to all recordings between 16-120 kHz, 2-500 ms, 500 ms maximum inter-syllable gap and with a minimum of two pulses.

The Kaleidoscope software provides automatic identification to species which were assumed to be correct for common pipistrelles and soprano pipistrelles, these were not investigated further, however a random sample of 20% of noise files were manually checked. Automatic identification of other bat species records is considered less reliable and manual quality checks were therefore performed on all other acoustic records. The assessment of the bat survey data was undertaken following standard guidance⁴⁴.

The Bat Activity Index (BAI) was calculated as the median of bat passes per night, based on the number of calls per night of a given species and on the number of hours between sunset and sunrise⁴⁴.

11.6. Survey Limitations

Land outwith the Site Boundary was not surveyed and buffers of the Site Boundary have not yet been produced however the Site Boundary includes the Turbine Development Area as well as the areas for potential biodiversity enhancements.

The baseline surveys undertaken to date have not included the access track and the full NVC survey was not undertaken of all the potential GWDTE or priority habitats within the full Site Boundary. These surveys will be completed prior to submission of the EIAR.

During static bat detector surveys the detector installed at location 7 failed in spring while the detector at location 3 failed in autumn. A minimum of 10 nights effort was recorded for all other detectors during all three deployments. The failure of one detector in spring and one in autumn is not considered a significant limitation as the remaining 13 detectors recorded for these survey months and no one location experienced multiple failures. As such there is considered to be sufficient data from across the Proposed Development area for each season.

11.7. Results

11.7.1. Desk-based review

Designated sites

No SACs designated for ecological features are within 10 km of the Proposed Development. However as shown in Figure 11.1, three SSSIs designated for ecological features are within the 10 km buffer of the Turbine Development Area:

- Rhunahaorine Point SSSI- designation includes the shingle habitats - approximately 2.08 km west of the Turbine Development Area;
- Torrisdale Cliff SSSI – designated for upland mixed ash woodland – approximately 7.04 km south of the Turbine Development Area; and
- Arran Northern Mountains SSSI – designation includes invertebrate assemblage, vascular plant assemblage, upland birch woodland and other upland habitats– approximately 9.41 km east across Kilbrannan Sound from the Turbine Development Area.

In addition, as shown in Figure 11.1, there are four Local Nature Conservation Sites (LNCSs) within 5 km of the Turbine Development Area:

- Loch a'Chuirn LNCS is within the Turbine Development Area;
- Carradale (Inland) LNCS – 2.34 km to the south of the Turbine Development Area and partially within the Site Boundary;
- Narachan Burn LNCS – 2.84 km to the northwest; and

⁴⁴ Lintott, P.R., Mathews, F. 2018. Basic mathematical errors may make ecological assessments unreliable. *Biodivers Conserv* **27**, 265–267. Available from - <https://doi.org/10.1007/s10531-017-1418-5> . [Accessed 19/08/2024]

- Cour LNCS – 3.27 km to the northeast.

Further details on the LNCSs will be included within the EIAR.

Species of note

The Argyll and Bute Planning Service technical note⁴⁵ highlights the presence and distribution of the species protected under WCA (1981) as amended or European Protected Species (EPS), within the region. This is set out within Table 11.2 below.

Table 11.2: Protected or notable species included in the Argyll and Bute technical note as present in the region

Notable Species	Distribution in Argyll and Bute
Bats	Limited distribution information - Pipistrelle, Brown Long-eared and Daubenton's and Natterer's bats have been found in Argyll and Bute.
Water vole	Localised
Otter	Found in nearly all watercourses in Argyll and Bute, otters are also widespread in coastal areas.
Pine marten	Very widespread
Red squirrel	Found on the mainland only
Badger	Localised
Wildcat	Wildcat could occur across most of Argyll away from population centres, particularly in areas of mixed farmland, woodland and heath. Hard evidence of their presence is scarce and difficult to establish. Hybrid wildcats are present on the Kintyre peninsula ⁴⁶ .
Slow worm	Widespread
Adder	Widespread
Great Crested Newt	Found in ponds and wetlands in lowland areas.
Allis shad	Localised
Twaite shad	Localised
Freshwater pearl mussel	Known locations – restricted information
Fan mussel	Found in 4 x marine 10km ² on the West Coast
Bluebell	Very widespread
Killarney Fern	Found in Atlantic woodlands
Slender Naiad	Localised - found in Loch a'chclair, Loch Gorm & Loch nan Gad.
Floating water-plantain	In 1 x 10 km ² at the head of Loch Etive
Yellow Marsh saxifrage	Unknown – found in Eilean na Muice Duibhe, Glac na Criche and Feur Lochain.
Green shield moss	Localised
Petalwort	Unknown

Source: The Argyll and Bute Planning Service technical note⁴⁵

⁴⁵ Argyll and Bute Planning Service, Biodiversity Technical Note for Planners and Developers, February 2017

⁴⁶ Campbell R. D., Gaywood M.J., & Kitchener A.C. (Eds.) 2023. Scottish Wildcat Action: Final Summary Report. NatureScot, Inverness.

11.7.2. Baseline surveys

Phase 1 and National Vegetation Classification Survey

Habitats found during Phase 1 survey at the Proposed Development are included in Table 11.3 below which includes the conservation status of the habitats recorded on within the Site Boundary. Table 11.3 includes the proportion of each habitat recorded within the Phase 1 survey as within the Site Boundary, including the Turbine Development Area. This is to identify habitats with high potential for impacts, and so requiring additional mitigation or avoidance measures, while also highlighting habitats where direct impacts will be avoided and are therefore potentially suitable for enhancements. The results of the Phase 1 survey are shown in Figure 11.3.

Table 11.3: Phase 1 habitat types present within the Turbine Development Area comparative to the entire Site Boundary.

Phase 1 habitat code	Phase 1 habitat type	Conservation status	km ² in Scoping Boundary	km ² in Turbine Development Area	% within Turbine Development Area compared to the Scoping Boundary
A1.1.1	Semi-natural broadleaved woodland	Annex 1, SBL	1.92	1.14	59.32%
A1.1.2	Plantation broadleaved woodland	-	0.03	0.00	0.00%
A1.2.2	Coniferous plantation woodland	-	25.62	10.25	40.02%
A1.3.2	Mixed plantation woodland	-	0.06	0.00	0.00%
A2.1	Dense/continuous scrub	-	0.86	0.04	4.55%
A4.2	Recently felled coniferous woodland	-	1.82	0.93	50.94%
B1.1	Unimproved acid grassland (upland)	SBL, Potential GWDTE	0.01	0.00	0.00%
B2.1	Unimproved neutral grassland	SBL, Potential GWDTE	<0.01	0.00	0.00%
B2.2	Semi-improved neutral grassland	Potential GWDTE	0.03	0.00	0.00%
B5	Marsh/marshy grassland	SBL, Potential GWDTE	0.46	0.09	20.25%
C1.1	Continuous bracken	-	0.71	0.35	49.61%
C3.1	Tall ruderal	-	<0.01	0.00	0.00%
C3.2	Other-non ruderal	-	<0.01	<0.01	100.00%
D1.1	Dry dwarf shrub heath - acid	Annex 1, SBL	0.53	0.23	42.75%
D2	Wet dwarf shrub heath	Annex 1, SBL, Potential GWDTE	0.10	0.09	98.48%
E1.6.1	Blanket bog	Annex 1, SBL	0.06	0.00	0.00%
E1.7	Wet modified bog	Annex 1, SBL	0.75	0.73	96.61%
E1.8	Dry modified bog	-	0.15	0.10	67.03%
E2.1	Acid/neutral flush	Annex 1, SBL	0.31	0.29	93.67%
E3.1	Valley mire	Annex 1	0.05	0.02	32.46%
F1	Swamp	Annex 1, SBL	0.02	0.01	49.14%
G1	Standing water	Annex 1, SBL	0.03	0.03	99.02%

Phase 1 habitat code	Phase 1 habitat type	Conservation status	km ² in Scoping Boundary	km ² in Turbine Development Area	% within Turbine Development Area compared to the Scoping Boundary
G1.3	Standing water - Oligotrophic	Annex 1, SBL	0.01	<0.01	14.62%
G2	Running water	Annex 1, SBL	0.03	0.03	99.86%
I2.1	Acid/neutral scree (natural)	-	<0.01	0.00	0.00%
J1.3	Ephemeral/short perennial	-	<0.01	0.00	0.00%
J4	Introduced scrub	-	0.01	<0.01	18.39%
Total area			33.58	14.33	42.67%

Source: Natural Power. GWDTE – Ground water dependent terrestrial ecosystem; Annex 1 – Listed on Annex 1 of EU Habitats Directive; SBL – Listed on Scottish Biodiversity List and UK Biodiversity Action Plan.

Though the Proposed Development is in early stage of design with the layout to be refined following the responses to this scoping report, some habitats identified within the Phase 1 survey, such as the blanket bog, are completely outwith the Turbine Development Area. The blanket bog, an Annex 1 and SBL priority habitat, is in the southernmost portion of the Site Boundary.

The valley mires present within the Proposed Development included areas of NVC M6c, M6d and M4 mosaic communities, and so are likely to comprise poor fens and soft-water spring mires rather than Annex 1 priority habitats. The full details of the NVC survey and habitats will be included within the EIAR.

Further habitat surveys of the proposed access track and additional targeted NVC surveys of potential GWDTE habitats will be undertaken prior to submission of the EIAR.

Protected mammals

All evidence of protected mammals recorded during the surveys are shown on Confidential Figure 11.4.

Otter spraints of varying ages, some including jelly, were recorded at 13 locations, despite the abundance of spraints no other features were identified, and no holts were recorded.

Active water vole burrows with droppings were recorded in one location, while possible burrows and disused burrows were noted elsewhere within the Proposed Development. These possible signs are all over 100 m from the current proposed turbine locations.

A single potential pine marten den site was recorded within the Turbine Development Area but outwith 100 m of all current proposed turbine locations. In addition, the location of 24 pine marten scats was recorded across the Site Boundary including areas within the Turbine Development Area.

Squirrel feeding signs were recorded in 21 locations and two possible caches were recorded, all within areas of conifer plantation but spread across the Site Boundary including within the Turbine Development Area but outwith 50 m of all current proposed turbine locations, the closest feeding sign was 56 m from the indicative location of turbine 23, as shown on Confidential Figure 11.4. The Scottish Squirrels project⁴⁷ was consulted for sightings of red squirrels nearby – and revealed a sighting of a red squirrel within 1 km of the Site Boundary from 10 July 2023. Red squirrels are considered present within the Turbine Development Area.

No badger setts or evidence of foraging badgers, or any other protected mammals, were identified within the Site Boundary.

Two of the eight potential roost features identified within the Site Boundary are within the Turbine Development Area, however all are over 500 m from any of the current proposed turbines. No further surveys to confirm the potential bat roosts have been undertaken to date. If works are to be undertaken within 50 m of these areas, further surveys may be required on these features once the access track location is confirmed.

Static Bat Detector Surveys

The static bat detector surveys recorded a total of 8,145 bat passes by common pipistrelle, soprano pipistrelle, *Myotis sp.*, Leisler's, *Pipistrellus sp.*, brown long-eared and Nathusius pipistrelle passes. Overall, 66.78% of the recorded bat passes were by common pipistrelle, followed by 27.24% by soprano pipistrelle.

Despite a failure of the detector during the full autumn deployment, detector 3 recorded 40.05% of the total bat passes; this was followed by detector 13, which recorded for the full number of nights and recorded 21.10% of total bat passes. Detector 10, which failed for part of the summer deployment, recorded the lowest total number of bat passes, accounting for 0.69% of the recorded passes. Table 11.4 includes the total passes, compared to nights effort and BAI of each detector.

⁴⁷ Scottish Squirrels. Available from: <https://scottishsquirrels.org.uk/squirrel-sightings/> [Accessed 19/08/2024]

Common pipistrelle passes were recorded within 30 minutes of sunset/sunrise during every season, this was highest at location 3 with 539 common pipistrelle passes (17.82% of common pipistrelle passes recorded at location 3) recorded within 30 minutes of sunset/sunrise across the surveyed season. All bat detectors were over 500 m from the potential bat roosts identified during the protected mammals surveys. As shown in Table 11.1 location 3 was within an area of conifer plantation approximately 58 m from the closet proposed turbine (turbine 23). All detectors were deployed within the Turbine Development Area, in habitats representative of the Turbine Development Area.

The detectors at locations 3 and 4 were 615 m apart within the existing turbine area, both near to the existing tracks and operational turbines. Location 4 was in a small open area within the conifer plantation near an area of wet modified bog while location 3 was at the edge of the existing keyholed turbine area. As shown in Table 11.4 the detector at location 4 recorded for 20 days more than the detector at location 3 but had a significantly lower BAI. Location 3 was the only detector within an area already keyholed for the existing operational turbines.

The detector at location 8, with the second highest maximum BAI, was area of wet dwarf shrub heath and adjacent a track within the conifer plantation which may have been used by commuting bats. The detector at location 1, where 10 of the 17 *Nathusius pipistrelle* passes and the highest number of *Leisler's* passes were recorded, was within an area of felled plantation and dry dwarf shrub heath. Location 13, where the highest number of soprano pipistrelle passes was at a woodland edge, an area of dry dwarf shrub heath and an acidic flush.

Table 11.4: Total bat passes by species by detector

Detector reference	<i>Myotis</i> sp.	Leisler's	<i>Nathusius</i> pipistrelle	Common pipistrelle	Soprano pipistrelle	<i>Pipistrellus</i> sp.	Brown long-eared	Total by detector	Total night's effort	Median BAI	Maximum BAI
1	63	33	10	406	109	17	8	646	41	3.5	98
2	1			124	4			129	41	0	23
3	15	30	4	3024	183	6		3262	22	52	502
4	9	6		42	236		3	296	42	1	106
5		3		96	49		1	149	42	1	32
6	5	3		54	83	1	5	151	42	2	17
7	5	5		13	34	2	4	63	29	0	13
8	4	10		208	491		2	715	33	5	251
9	1	2	1	258	234	6		502	33	10	53
10	5	2	1	17	23		8	56	33	1	9
11	30	3	1	48	98		5	185	33	3	38
12	9			71	55	2	1	138	35	2	18
13	51	3		1060	600	3	2	1719	41	13	205
14	94	1		18	20		1	134	41	0.5	20
Total by species	292	101	17	5439	2219	37	40	8145	508	-	-

Source: Natural Power

Other species

The Proposed Development is dominated by woodland habitats (82.28%) which have limited potential to support significant numbers of reptiles due to the lack of basking opportunities. The open areas, however, have potential to support both species of reptiles which are known to be present in the area: slow worms and adders. It is assumed likely that reptiles are widespread within the Turbine Development Area and Site Boundary.

Great crested newts are known to be present in the lowlands of Argyll including on the Kintyre peninsula. With seven areas of standing water, including five heads of streams (three of which are loch's: Loch a'Chomain, Loch Eireannaich and Loch Barr) and two small ponds. The closest waterbody to a proposed turbine is Loch nan Eun which is 65 m from the nearest currently proposed turbine location (turbine 19). Given potential suitability for great crested newts, environmental DNA (eDNA) surveys were undertaken in June 2024. These surveys involved collecting samples from all areas of standing water in accordance with the guidance⁴⁸, excepting at Loch a'Chomain which was sampled from the outlet burn (at NR 75203 45486) to avoid disturbing breeding divers on the loch. All samples returned negative results for great crested newts. As such great crested newts are considered likely absent from the proposed development area.

Further surveys

There is a variety of watercourses within the Site Boundary, both within the Turbine Development Area and within the biodiversity enhancement areas. To date a detailed data search of the Proposed Development and nearby area has not been undertaken and the potential for fish or freshwater pearl mussels has not been assessed. Following a review of existing data and consultation, the need for targeted species-specific surveys will be confirmed depending upon the Proposed Development layout. Where suitable buffers can be maintained around the watercourses and best practice mitigation measures adhered to, the need for further surveys will be avoided.

11.7.3. Proposed Assessment Methodology

The approach to the Ecological Impacts Assessment (EcIA) will follow the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines¹⁸. It should be noted that these criteria are intended as a guide and are not definitive; professional judgement will also be applied in determining value level for IEFs. IEFs have been scoped in or out of further assessment based on these guidelines and with consideration of effects that are potentially significant as set out under the EIA Directive.

The guidelines set out the EcIA process through the following stages:

- Identification of IEFs through ecological field survey and /or research;
- Determination of the geographical importance of each identified IEF;
- Assessment of impacts affecting those IEFs and / or resources, using a defined importance threshold with reference to ecological processes and functions as deemed appropriate;
- Determining the extent, magnitude, duration, timing and frequency of the impacts;
- Assessing the potential for impact reversibility;
- Determining the level of confidence in the above impact predictions;
- Identification of likely significant impacts in the absence of mitigation; and
- The identification of residual impacts following implementation of mitigation.

⁴⁸ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

11.7.4. Embedded mitigation

To ensure compliance with legislation, and to follow good practice guidance and consultation recommendations, a number of standard measures will be implemented should the application be consented. The standard measures which are relevant to avoiding and reducing impacts on IEFs include:

- A maximum of eight months prior to commencement of works, pre-construction ecology walkover surveys will be carried out, including surveys for protected species. This will enable any refinements to be made, if necessary, to mitigation, micro-siting and/or the construction programme to take account of any updated distribution or presence of protected species, with a suitable mitigation plan adopted on a case-by-case basis;
- No development shall take place (including demolition, ground works, vegetation clearance) until a Construction Environmental Management Plan (CEMP), incorporating a Construction Method Statement (CMS), has been submitted to and approved in writing by the local planning authority. The CEMP shall include the following:
 - Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements), including a Pollution Prevention Plan outlining measures to control pollution and a Drainage Management Plan outlining measures for management of surface and groundwater;
 - The location and timing of sensitive works to avoid harm to ecological features;
 - The times during construction when specialist ecologists need to be present on site to oversee works;
 - Species Protection Plans outlining specific measures to avoid and reduce impacts on protected species;
 - Responsible persons and lines of communication; and
 - The role and responsibilities on the Proposed Development of an Environmental Clerk of Works (ECoW) or similarly competent person.
- No development shall commence until the role and responsibilities and operations to be overseen by an appropriately competent ECoW have been submitted to and approved in writing by the local planning authority. The appointed person shall undertake all activities, and works shall be carried out, in accordance with the approved details. The ECoW will monitor and advise on potential effects on ecological features during construction in order that impacts are avoided or minimised through best practice. This includes maintaining water quality and minimising the potential for disturbance or risk of injury/death for protected species which may be using the Turbine Development Area.

The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the local planning authority.

11.7.5. Potential Impacts

In the absence of mitigation, protected species, where present, could suffer displacement or disturbance impacts if their habitat is disturbed during the wind farm construction. In addition, bat species may suffer damage to their roost sites during the wind farm development and are vulnerable to collisions during the wind farm operational period. Should the impact assessment identify the likelihood of significant impacts on protected species, mitigation measures will be proposed in the EIAR.

In the absence of suitable buffers and best practice mitigation, fish and other freshwater species may suffer displacement or disturbance impacts or habitat damage due to pollution events during the wind farm construction and long-term impacts associated with increased number of water courses crossings. Watercourse crossings will be minimised as far as possible and where these cannot be avoided then suitable water crossings will be identified within the EIAR and assessed. Should impact assessment identify the likelihood of significant impacts to protected fish and freshwater species, mitigation measures will be proposed in the EIAR.

Potential impacts will be assessed on the basis that the standard good practice mitigation outlined in section 11.7.4 will be implemented.

Designated sites

Statutory Sites will be scoped out of the EIAR.

There are no internationally designated sites, for reasons of terrestrial ecology, within 10 km of the Proposed Development. As such there will be no impacts on internationally designated sites.

Within 10 km of the Turbine Development Area there are three nationally designated SSSIs; Rhunahaorine Point SSSI (2.08 km west), Torrisdale Cliff SSSI (7.04 km south), and Arran Northern Mountains SSSI (9.41 km east across the Kilbrannan Sound). None of the SSSIs are functionally linked to the Turbine Development Area, and the Turbine Development Area does not include habitats which are the same as those within the SSSIs. The semi-natural woodland within the Proposed Development is dominated by willow or downy birch, rather than the mixed ash wood at Torrisdale Cliff SSSI. No likely significant impacts are anticipated on the nationally designated sites owing to lack of connectivity and the distance between the Proposed Development and the SSSIs, as such these are scoped out of the EIAR.

Locally designated sites will be scoped into the EIAR.

Loch a'Chuirn LNCS is within the Turbine Development Area and Carradale (inland) LNCS is with the Site Boundary. Both locally designated sites are therefore within the zone of influence and could be impacted by the Proposed Development. A search for other locally designated sites will be undertaken and impacts, as well as any potential mitigation, included within the EIAR.

Habitats

Habitats will be scoped into the EIAR.

The results of the Phase 1 and NVC surveys have provided an overview of the habitats likely to be encountered during the Proposed Development. Full results from this survey will be presented in the EIAR.

The habitat survey work has identified several habitat types that are likely to have potential to support GWDTEs, as well as several Annex I and SBL habitats. A Habitat Management Plan (HMP) will be prepared to ensure long term biodiversity net benefit is achieved within the Proposed Development in accordance with National Planning Framework 4. Any impacts on Annex I and SBL habitats will be discussed in the EIAR.

Bat species

Bat species will be scoped into the EIAR.

Static acoustic surveys identified that the Turbine Development Area is used by seven different species/species groups to varying levels, including species known to be high collision risk. The Proposed Development is large and given the species/roost features present it is anticipated that an assessment of the mitigation is required to inform a robust assessment of impacts.

There are nine potential roost features located within the Site Boundary. All identified potential roost features are over 500 m from the current proposed turbine locations. Following consultation, the final layout and turbine design will be compiled. At which point any potential roost features within the standard buffer (200 m plus the blade length of the chosen turbines) should also be subject to further survey to inform the assessment of impacts.

Provided Ecobat is back online at the time of assessment, the Ecobat assessment will be undertaken in line with Guidance⁴⁶. If Ecobat remains offline, publicly available information from other wind developments within the area will be used to compare the bat activity levels within the Proposed Development. The necessary further mitigation will depend upon the final layout of the turbines.

Otter

Otter will be scoped out of the EIAR.

Otter are a European protected species and are included on the SBL. Multiple otter spraints were recorded across the Proposed Development although no otter holts were recorded, and where present otter may be negatively impacted if there is disturbance to banks and waterways they are using during construction. However, as described in Section 11.7.4, embedded mitigation in the form of pre-felling and/or pre-construction checks for otter signs and holts/resting areas will be undertaken within the construction corridor and 250 m buffer of all proposed infrastructure. Provided continued lack of resting places and adherence to standard best practice measures, including during the design of any watercourse crossings, no significant impacts on otters are anticipated.

Water vole

Water vole will be scoped out of the EIAR.

In Scotland, water vole habitat (rather than water voles themselves) is protected under the WCA 1981 (as amended). Water vole is also included on the SBL. Water vole may be negatively impacted if there is disturbance to banks and waterways they are using during construction. Water vole burrows were recorded within the Site Boundary, including within the Turbine Development Area, all over 100 m from the current proposed turbines however the detail infrastructure proposals will be designed following consultation.

As described in Section 11.7.4, mitigation in the form of pre-felling and/or pre-construction checks for water vole signs will be undertaken within a 250 m buffer of the construction corridor, while also surveying the habitat for otter signs.

Disturbance to water voles will be minimised throughout the project design, with a standard 50 m buffer incorporated around watercourses and the number of watercourse crossings minimised in so far as possible. Best practice measures such as the adherence to a Pollution Prevention Plan and CEMP will be undertaken throughout the construction phase. Suitable buffers around watercourses/waterbodies will also be included within the design and construction phase where practicable.

Provided adherence to best practice mitigation for the protection of watercourses and the maintenance of burrows, no likely significant effects are anticipated.

Badger

Badger will be scoped out of the EIAR.

In Scotland badger is protected under the WCA 1981 (as amended) and the Protection of Badgers Act 1992 (as amended). No setts or other badger activity was recorded during the protected mammals survey; however there is suitable habitat within the Turbine Development Area and badgers are able to excavate new setts rapidly. Badgers may be negatively impacted if there is disturbance to setts during construction, however as described in Section 11.7.4, mitigation in the form of pre-felling and/or pre-construction checks for further badger setts will be undertaken within the construction corridor and 250 m buffer.

Pine marten

Pine marten will be scoped out of the EIAR.

Pine marten is included on the SBL and is protected under Schedule 5 of the WCA 1981 (as amended). Pine marten may be negatively impacted if there is disturbance to dens and habitat during construction.

Pine marten exist within the Turbine Development Area, including a potential den site which is over 300 m from the current proposed turbine locations. However, provided standard mitigation can be incorporated around the den (and any others identified) including buffers of 30 m around non-breeding dens and 100 m from dens suspected of being

used for breeding, no significant effects are anticipated. Based on the current proposals and potential to avoid impacts through careful design of the infrastructure it is assumed that the best practice buffers can be maintained.

However, as described in Section 11.7.4, mitigation in the form of pre-felling and/or pre-construction checks for pine marten dens will be undertaken within the construction corridor and 250 m buffer, along with red squirrel surveys. Provided the continued absence of dens within the area of works and adherence to standard best practice measures, including incorporating suitable buffers, no significant impacts on pine martens are anticipated.

Red squirrel

Red squirrel will be scoped out of the EIAR.

Red squirrels are included on the SBL, and are protected under the WCA, Schedule 5, which includes protection against having their access to any structure or place which they use for shelter or protection being obstructed. Squirrel may be negatively impacted if there is disturbance to dreys and habitat during construction.

Red squirrel activity was recorded across the Site Boundary, with all evidence associated with the coniferous plantation which is to be removed as part of the Proposed Development. Portions of the conifer plantation have recently been felled as part of the commercial forestry within the landholding. Although additional areas will be removed to facilitate the Proposed Development, the areas to be removed are typical of the habitat. Furthermore, not all suitable red squirrel habitat within the Site Boundary will be affected; currently 60% of the conifer plantation is outwith the Turbine Development Area and therefore will be retained.

Despite the abundance of squirrel feeding signs and caches no dreys were recorded. As described in Section 11.7.4, mitigation in the form of pre-felling and/or pre-construction checks for red squirrels will be undertaken within the construction corridor and 250 m buffer, along with the pine marten surveys.

As such, given the retention of a significant portion of suitable habitat through keyholing of the turbines rather than clear-felling, and the avoidance of direct impacts, no likely significant effects are anticipated and red squirrels will be scoped out of the EIAR.

Reptiles

Reptiles will be scoped out of the EIAR.

The presence of adders and slow worms is assumed within the Proposed Development based on the habitats present. Both adders and slow worms are included on the SBL and best practice construction measures in relation to avoidance of harm will be undertaken as standard and are considered embedded. As such no likely significant impacts are anticipated on reptiles.

Great crested newts

Great crested newts will be scoped out of the EIAR.

Following the results of the eDNA survey, great crested newts are considered likely absent from the proposed development area and as such will not be at risk of likely significant impacts.

Fish and freshwater pearl mussel

Fish and freshwater pearl mussels will be scoped into the EIAR.

A variety of fish species and freshwater pearl mussels are included on the SBL, and a variety of watercourses are present within the Turbine Development Area. Following a review of existing data and consultation, the need for targeted species-specific surveys will be confirmed depending upon the Proposed Development layout. Where suitable buffers can be maintained around the water courses and best practice mitigation measures adhered to the need for further surveys will be avoided.

If present, fish and freshwater pearl mussels may be negatively impacted by habitat damage due to pollution events during the wind farm construction as well as long-term impacts associated with any increase in the number of watercourse crossings.

Disturbance to the waterways will be minimised throughout the project design, with the number of watercourse crossings minimised in so far as possible. Best practice measures such as the adherence to a Pollution Prevention Plan and CEMP will be undertaken throughout the construction phase. Suitable buffers around watercourses/waterbodies will also be included within the design and construction phase where practicable.

As the layout is not yet finalised and the distribution of fish and freshwater pearl mussels within the Turbine Development Area is unknown, the potential for likely significant impacts cannot be discounted, therefore both fish and freshwater pearl mussels are scoped into the EIAR.

11.8. Conclusions

11.8.1. Features Proposed for Assessment within the EcIA

In order to ensure that the EIAR is compliant with the EIA Directive, and to ensure that the EcIA is focussed on potentially significant effects only, we proposed that only those important ecological features and impacts shown in Table 11.5 are carried forward for EcIA within the ecology EIAR chapter.

Table 11.5: Features and Impacts to be assessed within the EIAR

Receptor	Scoped in/out	Development Phase	Impact	Assessment
Designated sites - statutory	Out			
Designated sites - local	In	Construction	Damage/degradation	EcIA
Habitats	In	Construction and operation	Habitat loss	EcIA
Bats	In	Construction and operation	Disturbance/ displacement Collision Roost damage/ disturbance	EcIA
Otter	Out			
Water vole	Out			
Badger	Out			
Pine marten	Out			
Red squirrel	Out			
Great crested newts	Out			
Fish and freshwater species	In	Construction	Disturbance/ displacement impacts Damage to habitat	EcIA

Source: Natural Power

11.9. Scoping Questions to Consultees

The questions below are for consultees regarding the information provided in this scoping chapter that it would be useful to receive feedback on. Not all questions will be relevant to all consultees; therefore, we request that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently consultees are welcome to provide feedback on any issue they consider relevant to the proposed development. If consultees elect not to respond, the Developer will assume that consultees are satisfied with the approach adopted/proposed.

- **Question 13:** Do consultees have any comments regarding the EcIA only concentrating on those receptors which may be subject to significant effects from the proposed development (either directly or indirectly)?
- **Question 14:** Table 11.5 above notes the receptors and potential impact proposed to be included within the EcIA. Do consultees have any comment regarding this sufficiently covering the potential impacts on features from the proposed development and what is proposed to be scoped out?
- **Question 15:** If Ecobat remains offline at the time of the EIAR, are consultees happy with the proposed method of assessment (a comparison with publicly available data from nearby proposals) for bat activity?

12. Ornithology

12.1. Introduction

This section of the scoping report sets out the proposed approach to the assessment of potential effects on important ornithological features (IOFs). IOFs are bird species that are protected by legislation, which are of high conservation importance or are particularly sensitive to impacts associated with wind farms. The approach proposed will allow for the production of an Environmental Impact Assessment Report (EIAR) for the Proposed Development that will focus on features which could be significantly affected, or for which the predicted effects are currently unknown. Important ecological features (IEFs) are discussed separately in Section 11 Ecology.

This report provides details on the baseline ornithology surveys, which were undertaken at the proposed Deucheran Hill 2 Wind Farm (the “Proposed Development”). Ornithological surveys have been undertaken between March 2021 and February 2023 and include Vantage Point surveys (VPs), breeding surveys for raptors, golden eagle and white-tailed eagle, black grouse, divers and upland waders, and winter walkovers. Results of these surveys have been used to inform this scoping and the proposed Environmental Impact Assessment (EIA) and assessment methods. Walkover surveys of the access track are ongoing but no other surveys are to take place prior to submission of the EIA.

This section also provides information on statutory sites of international importance for ornithology, upon which the Proposed Development may have a ‘Likely Significant Effect’ (LSE). If required, a screening process would be undertaken alongside the EIA to determine whether the predicted impacts of the Proposed Development would result in an LSE. A screening process allows the competent authority to determine whether an Appropriate Assessment (AA) will be required.

12.1.1. Site description

As highlighted in Section 3.1 the Proposed Development site lies approximately 7 km northwest of Carradale, on an area of land on the Kintyre Peninsula in Argyll and Bute.

The Proposed Development comprises of the existing nine turbine Deucheran Hill Wind Farm which has been operational since December 2001. The Proposed Development is for a repowering and extension of the existing wind farm which will involve the removal of the existing nine turbines and installation of 23 new and bigger turbines with a tip height of up to 220 m.

The Proposed Development is principally dominated by woodland including commercial conifer plantation, recently felled conifer areas and semi-natural broadleaved woodland, though areas of heathland, blanket bog and unimproved grasslands are also present. The Site Boundary also includes areas for proposed habitat management and biodiversity enhancements as well as the “Turbine Development Area” which includes the area of proposed turbines within the higher ground, as shown in Figure 3.2.

12.2. Legislation, policy and guidance

The ornithology baseline surveys and preliminary assessment presented in this report will be carried out with reference to a number of national and international policy documents. Legislative and guidance documents with relevance to ornithology are listed below:

12.2.1. Legislation

- European Union (EU) Exit: The Habitats Regulations in Scotland⁴⁹;
- Council Directive 2009/147/EC on the Conservation of Wild Birds (the Birds Directive)⁵⁰;
- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive)⁵¹;
- The Conservation of Habitats and Species Regulations 2017 (as amended), relating to reserved matters in Scotland including the granting of consent under section 36 of the Electricity Act (together, “the Habitats Regulations”)⁵²;
- The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations 2012⁵³;
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) (the Habitats Regulations), which transposes the Habitats Directive into UK law⁵⁴;
- Wildlife and Countryside Act 1981 (as amended)⁵⁵;
- The Nature Conservation (Scotland) Act 2004⁵⁶;
- The Wildlife and Natural Environment (Scotland) Act 2011⁵⁷;
- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017, which transpose the EIA Directive into the Scottish planning system⁵⁸; and

⁴⁹ UK. The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019). Available from - <https://www.legislation.gov.uk/ukdsi/2019/9780111176573/regulation/30> [Accessed 19/08/2024]

⁵⁰ UK. Directive 2009/147/EC of the European Parliament and of the Council (2009). Available from - <https://www.legislation.gov.uk/eudr/2009/147/contents> [Accessed 19/08/2024]

⁵¹ EUR-Lex, (2013). Available from - <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31992L0043> [Accessed 19/08/2024]

⁵² UK. The Conservation of Habitats and Species Regulations (2017). Available from - <https://www.legislation.gov.uk/uksi/2017/1012> [Accessed 19/08/2024]

⁵³ Scotland. The Conservation (Natural Habitats, &c.) Amendment (Scotland) Regulations (2012). Available from - <https://www.legislation.gov.uk/ssi/2012/228/contents/made> [Accessed 19/08/2024]

⁵⁴ UK. The Conservation (Natural Habitats, &c.) Regulations (1994). Available from - <https://www.legislation.gov.uk/uksi/1994/2716/contents/made> [Accessed 19/08/2024]

⁵⁵ UK. Wildlife and Countryside Act (1981). Available from - <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed: 19/08/2024]

⁵⁶ Scotland. Nature Conservation (Scotland) Act (2004). Available from - <https://www.legislation.gov.uk/asp/2004/6/contents> [Accessed 19/08/2024]

⁵⁷ Scotland. The Wildlife and Natural Environment (Scotland) Act (2011). Available from - <https://www.legislation.gov.uk/asp/2011/6/contents/enacted> [Accessed 19/08/2024]

⁵⁸ Scotland. The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations (2017). Available from - <https://www.legislation.gov.uk/ssi/2017/102/contents/made> [Accessed 19/08/2024]

- The Electricity Works, EIA Regulations⁵⁹.

12.2.2. National policy guidance

- National Planning Framework 4 (NPF4)⁶⁰;
- Planning Advice Note (PAN) 51: Planning, Environmental Protection and Regulation⁶¹;
- PAN 60: Planning for Natural Heritage⁶²;
- PAN 1/2013 – Environmental Impact Assessment⁶³; and
- Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives: Scottish Executive Circular 6/1995 as amended⁶⁴.

12.2.3. Other guidance

Particular attention has also been given to the guidance documents listed below, that are applicable to assessing the effects of wind farm developments on ornithology. Reference has also been made to guidance documents through the report where relevant:

- Guidelines for Ecological Impact Assessment in the UK and Ireland¹⁹
- Recommended bird survey methods to inform impact assessment of onshore wind farms⁶⁵
- Assessing connectivity with Special Protection Areas (SPAs)⁶⁶;
- Developing field and analytical methods to assess avian collision risk at wind farms⁶⁷;
- Windfarms and birds: calculating a theoretical collision risk assuming no avoidance action⁶⁸;
- Avoidance rates for the onshore Scottish Natural Heritage (SNH; now NatureScot) wind farm collision risk model⁶⁹;
- Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance⁷⁰;
- Good Practice during Wind Farm Construction⁷¹;

⁵⁹ Scotland. The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations (2017). Available from - <https://www.legislation.gov.uk/ssi/2017/101/contents/made> [Accessed 19/08/2024]

⁶⁰ Scottish Government. (2023). National Planning Framework 4. Scottish Government, Edinburgh.

⁶¹ Scottish Government. (2006). PAN 51: Planning, Environmental Protection and Regulation. Scottish Government, Edinburgh.

⁶² Scottish Government. (2000 (updated 2008)). *PAN 60: Planning for Natural Heritage*. Scottish Government, Edinburgh.

⁶³ Scottish Government. (2013 (updated 2017)). *PAN 1/2013 – Environmental Impact Assessment*. Scottish Government, Edinburgh.

⁶⁴ Scottish Executive. (1995 (updated 2000)). *Nature Conservation: Implementation in Scotland of the Habitats and Birds Directives*. Scottish Executive, Rural Affairs Department, Edinburgh.

⁶⁵ SNH (2017). *Recommended bird survey methods to inform impact assessment of onshore wind farms*. Scottish Natural Heritage (now NatureScot), Battleby.

⁶⁶ SNH (2016) *Assessing connectivity with Special Protection Areas (SPAs) (Guidance note: Version 3)*. Scottish Natural Heritage (now NatureScot), Edinburgh.

⁶⁷ Band, W., Madders, M., Whitfield, D. (2007). *Developing field and analytical methods to assess avian collision risk at wind farms*. Scottish Natural Heritage, Natural Research Ltd.

⁶⁸ SNH (2000). *Windfarms and birds: calculating a theoretical collision risk assuming no avoidance action*. Scottish Natural Heritage (now NatureScot), Edinburgh.

⁶⁹ SNH (2018) *Avoidance rates for the onshore SNH wind farm collision risk model*. Scottish Natural Heritage (now NatureScot), Battleby.

⁷⁰ NatureScot (2022). *Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance*. Available from - <https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance> [Accessed 19/08/2024]

⁷¹ Scottish Renewables, Scottish Natural Heritage, Scottish Environment Protection Agency, Forestry Commission Scotland and Historic Environment Scotland (2015). *Good practice during windfarm construction*.

- British Standard 42020:2013 Biodiversity – code of practice for planning and development⁷²;
- Natural Heritage Zone (NHZ) bird population estimates. Scottish Windfarm Bird Steering Group (SWBSG). Commissioned report number 1504⁷³;
- Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas⁷⁴;
- Monitoring the impacts of onshore wind farms on birds⁷⁵;
- Guidance on methods for monitoring bird populations at onshore wind farms⁷⁶;
- Birds of Conservation Concern (BoCC) 5: the population status of birds in the United Kingdom, Channel Islands and Isle of Man⁷⁷; and
- Scottish Biodiversity List (SBL)⁷⁸.

12.3. Method of assessment

This section outlines the approach that the EIA and the Cumulative Effects Assessment (CEA) will take when assessing ornithology in relation to the Proposed Development. It also lists the proposed embedded mitigation measures that will be incorporated into the project design and documentation as standard.

12.3.1. Approach to impact assessment

The main ways in which a wind farm may affect ornithological receptors are via:

- Habitat loss due to land-take: construction of turbine bases, access tracks and other structures will lead to direct habitat loss. The effects of habitat loss will depend upon the extent of land-take and the type of habitat affected. Embedded mitigation measures will be put in place to prevent any associated damage to, or destruction of, nests, as discussed below.
- Disturbance and/or displacement: The construction and decommissioning stages of wind farm developments can have potential impacts caused by associated noise and visual disturbance and if unmitigated could lead to the temporary displacement or disruption of breeding and foraging birds whilst the construction/decommissioning activities are taking place. The level of impact depends on the timing of potentially disturbing activities, the extent of displacement (both spatially and temporally), and the availability of suitable habitats in the surrounding area for displaced birds to occupy. Disturbance impacts during the operational phase are likely to be less than during the construction/decommissioning phases, as disturbance due to human activities will be considerably reduced, plus some species may become habituated to the activity. Displacement around turbines following construction and lasting throughout the operational phase may result for some ornithological features. The extent of this depends on the sensitivity of the species, the season (breeding or non-

⁷² The British Standards Institution (BSI) (2013). *Biodiversity – Code of practice for planning and development*. BSI Standards Limited, London.

⁷³ Wilson, M.W., Austin, G.E., Gillings, S. & Wernham, C.V. (2015). *Natural Heritage Zone bird population estimates*. SWBSG commissioned report number 1504. pp72.

⁷⁴ SNH (2018). *Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected areas*. Scottish Natural Heritage (now NatureScot), Inverness.

⁷⁵ SNH (2009). *Monitoring the impact of onshore wind farms on birds (Guidance note)*. Scottish Natural Heritage (now NatureScot), Edinburgh.

⁷⁶ SNH (2009). *Guidance on methods for monitoring bird populations at onshore wind farms*. Scottish Natural Heritage (now NatureScot), Edinburgh.

⁷⁷ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). *Birds of Conservation Concern 5: the population status of birds in the United Kingdom, Channel Islands and Isle of Man*. British Birds 114, 723–747.

⁷⁸ Scottish Government (2020). *Scottish Biodiversity List*. Available from - <https://www.nature.scot/doc/scottish-biodiversity-list>

breeding) as well as site-specific factors. In addition, during the operational phase turbines may act as a barrier to movement, where regularly having to fly around the wind farm could result in greater energy expenditure.

- Collision with turbines: collision of a bird with the turbine rotors or tower is likely to be fatal. The likelihood of collision depends on a number of factors, such as the ecology of the species (time spent flying, manoeuvrability, etc), the surrounding habitat, the layout of the turbines and weather conditions. Note that birds which avoid a wind farm due to disturbance, will clearly not also be subject to collision risk.

The approach to the Ecological Impact Assessment (EcIA) will follow the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines¹⁹. It should be noted that these criteria are intended as a guide and are not definitive; professional judgement will also be applied in determining value level for IOFs. IOFs have been scoped in or out of further assessment based on these guidelines and with consideration of effects that are potentially significant as set out under the EIA Directive. Baseline information will be used to identify IOFs that could sustain positive or negative impacts as a result of the Proposed Development. Where likely non-significant impacts are identified, Natural Power proposes that these are 'scoped out' of the EIA.

The guidelines set out the EcIA process through the following stages:

- Identification of IOFs through ecological field survey and /or research;
- Determination of the geographical importance of each identified IOF;
- Assessment of impacts affecting those IOFs and / or resources, using a defined importance threshold with reference to ecological processes and functions as deemed appropriate;
- Determining the extent, magnitude, duration, timing and frequency of the impacts;
- Assessing the potential for impact reversibility;
- Determining the level of confidence in the above impact predictions;
- Identification of likely significant impacts in the absence of mitigation; and
- The identification of residual impacts following implementation of mitigation.

12.3.2. Approach to potential cumulative effects

Following the completion of baseline surveys and the associated assessment, features will be identified within the EIAR as to whether they are IOFs that require full assessment and additional mitigation. Cumulative effects will only be assessed on features that are identified as IOFs, and effects will be assessed on a Zone of Influence (ZoI) around the Proposed Development. Whilst the distance of the ZoI is dependent on the IOF, it is unlikely to be more than 15 km.

The list of developments which are considered appropriate to be included in the cumulative effects assessment are: solar farm planning applications that are in planning or are consented or operational with a capacity of 1.5 megawatts (MW) or greater, wind turbines that are in planning or are consented or operational with a capacity of 500 kilowatts (kW) or greater and planning applications of more than 10 dwellings.

12.3.3. Embedded mitigation

To ensure compliance with legislation, and to follow good practice guidance and consultation recommendations, a number of standard measures will be implemented should the application be consented. The standard measures which are relevant to avoiding and reducing impacts on IOFs include:

- All relevant construction phase embedded mitigation measures, such as appointment of an Environmental Clerk of Works (ECOW), pollution control measures, water quality management and monitoring and protection for habitats and species, will be implemented through a Construction Environmental Management Plan (CEMP), which will be agreed with the local planning authority in consultation with NatureScot and Scottish Environment Protection Agency (SEPA).

- In line with good practice, an independent ECoW will be appointed prior to the commencement of construction and will be present on site during enabling works and throughout the construction period. They will be a suitably experienced individual, whose role will be to oversee that all works are carried out in accordance with environmental legislation and good practice, and with agreed construction phase management plans such as the CEMP. The ECoW will give regular Toolbox Talks to contractors regarding the ornithological sensitivities, including the status and locations of any breeding birds at the Proposed Development.
- Good practice via timing of works and pre-construction surveys will be necessary to reduce the possibility of illegal damage, destruction or disturbance to occupied bird nests during the construction phase. Adherence to this will be overseen by the ECoW. During the breeding season the ECoW and other appropriately qualified surveyors will carry out pre-construction survey checks in advance of any felling, vegetation stripping or excavation works to check for evidence of the presence of any breeding birds to allow protection (such as exclusion zones) to be implemented as appropriate on a case-by-case basis. Full details of the ECoW role and responsibilities will be provided in the CEMP and secured through an appropriate planning condition.

The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details, unless otherwise agreed in writing by the local planning authority.

12.4. Consultation

No consultation in relation to ornithology has been undertaken to date on behalf of the Proposed Development.

12.5. Baseline

12.5.1. Methods

12.5.1.1. Desk-based review

Designated sites

A web-based search was undertaken to identify and provide information on statutory designated sites of nature conservation with ornithological species as listed features. The search was carried out using the Multi-Agency Geographic Information for the Countryside (MAGIC) Map application tool⁷⁹ and the NatureScot SiteLink website⁸⁰. The search focussed on identifying the following sites:

- Special Protection Areas (SPAs)– within 10 km of the Proposed Development (within 25 km for sites designated for geese and gulls);
- Ramsar sites (Ramsar Convention on Wetlands of International Importance) where waterfowl or waterfowl habitat are described as ecological features – within 10 km of the Proposed Development (and 25 km for geese and gulls); and
- Sites of Special Scientific Interest (SSSIs) – within 5 km of the Proposed Development.

A search was also undertaken for any information on non-statutory sites such as Local Nature Conservation Sites (LNCSS), Royal Society for the Protection of Birds (RSPB) reserves and Local Wildlife Trust Reserves within 2 km of the Proposed Development.

Species of Note

No additional ornithological records have yet been requested; however, prior to preparation of the full EIAR a request will be made to the local environmental records centre (Argyll Biological Records Centre) and RSPB for all

⁷⁹ MAGIC. (2022). Available from - <https://magic.defra.gov.uk/MagicMap.aspx> [Accessed 19/08/2024]

⁸⁰ NatureScot SiteLink (n.d.) Available from - <https://sitelink.nature.scot/home> [Accessed 19/08/2024]

ornithological records held within the Proposed Development Area and a 5 km buffer for all Schedule 1, Annex I, UK BoCC Red List and Amber List⁷⁷, and SBL-listed species⁷⁸ in the last ten years. The data search will be extended to within 10 km of the Proposed Development Area for eagles and 25 km for geese and swans.

In addition, records of Schedule 1 and/or Annex I nesting and roosting raptors within 10 km of the Proposed Development Area in the last ten years will be requested from the Argyll Raptor Study Group.

12.5.1.2. Relevant contextual data

A review of all wind farm applications with relevant ornithological EIAR Chapters from 2014 to 2024 from within a 10 km radius of the Proposed Development will be undertaken. These applications will be identified using the local planning application portal⁸¹.

12.5.2. Surveys

12.5.2.3. Target species

NatureScot guidance⁶⁵ suggests that assessment of the effects of wind farms on birds should, in most circumstances, be limited to those protected species and other species of conservation concern that, as a result of their flight patterns or response behaviour, are likely to be affected by, or subject to, significant and adverse impacts from wind farms. The guidance states that there are three overarching lists describing protected species and species of conservation concern:

- Species listed in Annex I of the Council Directive 2009/147/EC on the Conservation of Wild Birds (Annex I species)⁵²;
- Species protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) (Schedule 1 species)⁵⁵; and
- Red listed species on BoCC⁷⁷.

Within these lists, NatureScot⁶⁵ recommends that the greatest attention should be paid to those species which as a result of their flight patterns or response behaviour, may be subject to impact from wind farms (such as raptors) and any species that are not particularly manoeuvrable in flight (e.g. geese and swans). Such species are termed 'target species' and are recorded in detail during flight activity surveys.

In accordance with NatureScot guidance⁶⁵, surveys focused on the following target species:

- All raptors and owls listed in Schedule 1 and 1A of the Wildlife and Countryside Act 1981 (as amended)⁵⁵;
- All species of wildfowl (with the exception of Canada goose and mallard);
- All wader species;
- All gull species; and
- Black grouse.

Secondary species are species which may also be sensitive to wind farm development, but which are of lesser conservation concern or lower sensitivity than target species. These species are recorded during flight activity surveys but in less detail than target species (for example their flights are not mapped and so collision risk modelling cannot be undertaken for secondary species). Secondary species which were surveyed are:

- All other raptor and owl species (including buzzard, sparrowhawk and tawny owl);
- All other waterfowl (e.g. grey heron and cormorant);

⁸¹ Available from - <https://publicaccess.argyll-bute.gov.uk/online-applications/search.do?action=simple&searchType=Application> [Accessed 19/08/2024]

- Raven;
- Red grouse;
- Schedule 1 passerines (e.g. crossbill); and
- Any large aggregations of UK BoCC Red-listed passerines⁷⁷.

Proposed wind farm sites may differ considerably in their ornithological sensitivity; NatureScot guidance therefore recommends that survey programmes and the level of survey effort should be tailored to an individual site's needs.

In order to inform the assessment of the Proposed Development, ornithology surveys were undertaken between the 29 March 2021 and 22 February 2023. Surveys undertaken are outlined in Table 12.1 below following standard guidance as referenced.

Table 12.1: Ornithology survey schedule

Survey type	Buffer surveyed	Survey months	Notes
Vantage Point (VP) surveys ⁶⁵	2 km viewshed	March 2021 – February 2023	Five VP locations 6 hours per VP per month
Breeding raptor surveys ^{85,82}	2 km	March – August 2021 and 2022	3 visits per month
Breeding eagle surveys ⁸²	6 km	March – August 2021 and 2022	3 visits March, April 2 visits May - August
Breeding black grouse surveys ^{85,83}	1.5 km	March – May 2021 and 2022	2 visits per month
Breeding diver surveys ⁸⁵	1 km	April – August 2021 and 2022	2 visits per month
Upland Breeding Bird surveys (BBS) ⁸⁴	500 m	April – July 2021 and 2022	2 visits per month
Winter walkover surveys (WWS) ⁸⁵	500 m	September 2021- February 2022 September 2022- February 2023	1 visit per month

Source: *Eagle-Eye Surveyors*

12.5.3. Analysis

12.5.3.4. Collision risk modelling

Collision Risk Modelling (CRM) uses data collected during VP surveys to predict the number of individuals per species that have the potential to collide with turbine rotors. CRM is undertaken when sufficient flight activity occurs within the collision risk zone (CRZ) (i.e. at collision risk height and within the turbine envelope = 500 m turbine buffer) at potential collision height (PCH) (i.e., the height at which rotor blades sweep), as per the Band *et al.* collision risk model recommended by NatureScot⁶⁵. When using the Band model, height bands are typically chosen such that all flights recorded within certain height bands can be considered to be at potential collision height (PCH), i.e. the height at which rotor blades sweep.

⁸² Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2013). *Raptors: a field guide to survey and monitoring*. 3rd Edition. The Stationery Office, Edinburgh.

⁸³ Etheridge, B. & Baines, D. (1995). *Instructions for the Black Grouse Survey 1995/6: a Joint RSPB/GCT/JNCC/SNH Project*. Unpublished.

⁸⁴ Brown, A. F. & Shepherd, K. B. (1993). A method for censusing upland breeding waders. *Bird Study*, 40: 189-195.

⁸⁵ Gilbert, G., Gibbons, D.W. & Evans, J. (1998). *Bird Monitoring Methods*. RSPB, Sandy.

At the Proposed Development, flight activity data were recorded into the following height bands (HB), based on the expected turbine specifications that were current at the time survey work commenced:

- 1 Less than 40 m;
- 2 40 -140 m;
- 3 140 – 250 m; and
- 4 More than 250 m.

The Proposed Development is for a repowering and extension of the existing wind farm which will involve the removal of the existing nine turbines and installation of 23 new, bigger turbines, all of which are proposed to be up to 220 m in height (to blade tip). The blade length and hub height are not defined at the point of writing this document. Currently a PCH between 40 - 220 m is proposed and, therefore, all flights in HBs 2 and 3 are considered to be within PCH, although this will be a precautionary approach as some flights at the lower and higher ends of the HBs will lie outside PCH. Flights recorded in HB 1 are below PCH and flights recorded in height band 4 are above PCH. Sufficient flight activity is defined as three or more flights or more than ten individuals at PCH. Thus, species that rarely pass through the Proposed Development Area and which are not considered to be at risk of significant effects, will not undergo CRM.

CRM has not been undertaken at this stage but is described here in order to confirm that this shall be an important part of the ornithology assessment. Full CRM will be undertaken for the EIAR, using the finalised dimensions of the proposed turbines and full determination of those flights that occurred at PCH within the CRZ.

12.5.3.5. Golden eagle topography modelling

As golden eagle are known to be present within Kintyre, modelling on any flights recorded will be undertaken using the Golden Eagle Topography (GET) model. This is a simple model that has been developed to predict golden eagle habitat usage within a site based on the topographical characteristics of that site⁸⁶. The model is based around the assumption that golden eagles will use ridges and rugged topography to exploit the vertical lift generated by such features. It was developed and validated using Global Positioning System (GPS) telemetry records from juvenile golden eagles in Scotland. Since its development the GET model has been tested with a large amount of new, independent data, including from range holding birds, and the model has performed very well (See Appendix A in Fielding et al., 2023)⁸⁷

The model is based on three underlying topographical variables: altitude, slope and distance to the nearest ridge, measured at a 50 m resolution. A Standardised Preference Index (SPI) is calculated for each variable for each 50 m grid cell based on criteria provided in Fielding *et al.*, 2020⁸⁶. These are then summed to give a predicted usage score between 1 and 10 for each grid cell, with 1 predicting lowest usage and 10, highest usage.

The model is run using the R software environment for statistical computing⁸⁸ using a script modified from that provided with Fielding *et al.*, 2020⁸⁶. Ordnance Survey Open Data Digital Terrain Model (DTM). Data at a 50 m resolution will be used for the altitude input, and the slope and distance to the nearest ridge data will be derived from that and used to calculate SPIs and the final preference index.

⁸⁶ Fielding, A.H., Haworth, P.F., Anderson, D., Benn, S., Dennis, R., Weston, E., & Whitfield, D.P. (2020). A simple topographical model to predict Golden Eagle *Aquila chrysaetos* space use during dispersal. *Ibis*, 162, 400-415.

⁸⁷ Fielding, A.H., Anderson, D., Benn, S. Taylor, J., Tingay, R., Weston, E.D. and Whitfield, D.P. (2023). *Responses of GPS-Tagged Territorial Golden Eagles Aquila chrysaetos to Wind Turbines in Scotland*. *Diversity*, 15, 917. Available from - <https://doi.org/10.3390/d15080917> [Accessed 19/08/2024]

⁸⁸ R Core Team (2020). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.

12.5.4. Survey limitations

Survey buffers for ornithology surveys are extensive, for example, eagle surveys require to be undertaken on all land within a 6 km buffer from the Proposed Development option areas. Due to the size of survey areas, access was not available to all of the land within buffers identified. Where access was not available, the land within the buffer was scanned with binoculars from areas where access was permitted or from publicly accessible roads.

12.6. Results

12.6.1. Desk-based review

Designated sites

There are two internationally designated sites located within 10 km of the Proposed Development Area (within 25 km for sites designated for geese and gulls): Kintyre Goose Roosts SPA and Ramsar, and the Sound of Gigha SPA. In addition, there are two SSSIs located within 5 km, Kintyre Goose Lochs SSSI and Rhunahaorine Point SSSI. Details are provided in Table 12.1 below and locations are shown on Figure 12.1.

Although there are additional SSSIs present within 5 km as outlined in Chapter 11: Ecology, none of these have ornithological interest features. There are no RSPB or local wildlife trust reserves located within 5 km, and should any ornithological details become available for the LNCSS identified in Chapter 11, relevant details will be included within the EIAR.

Table 12.2: Details of designated sites

Site name	Designation	Distance	Description
Kintyre Goose Roosts	SPA Ramsar	1.56 km west	Kintyre Goose Roosts qualifies under Article 4.1 of the EC 'Birds' Directive and under Ramsar Criterion 6 by regularly supporting 1% or more of Greenland white-fronted goose (1991/1992 to 1995/1996, winter peak mean of 2,300 individuals, 8% of the total biogeographic population).
Kintyre Goose Lochs	SSSI	1.56 km west	Non-breeding Greenland white-fronted goose (3.81% of the world population and over 6% of the British population)
Sound of Gigha	SPA	0.51 km west	The site qualifies under Article 4.1 by regularly supporting a wintering population of European importance of the following Annex 1 species: Great northern diver (for the years 2004/05 to 2007/08 a mean peak annual wintering population of 505 individuals (20.2% of the Great Britain population)) and Slavonian grebe (for the years 2008/09 to 2012/13 a mean peak annual wintering population of 37 individuals (3.4% of the Great Britain population)). The site further qualifies under Article 4.2 by regularly supporting populations of European importance of the following migratory species: common eider (for the years of 2004/05 to 2007/08 a mean peak annual wintering population of 1,295 individuals (2.2% of the Great Britain population)) and red-breasted merganser (for the years of 2004/05 to 2007/08 a mean peak annual wintering population of 117 individuals (1.4% of the Great Britain population)).
Rhunahaorine Point	SSSI	2.07 km west	Non-breeding Greenland white-fronted goose (3.81% of the world population and over 6% of the British population) and breeding little tern (between approximately 9 and 25 pairs, largest population on Kintyre).

Source: NatureScot

Species of Note

Ornithological species listed on the SBL are: tree pipit, lesser redpoll, twite, cuckoo, yellowhammer, red grouse, grasshopper warbler, house sparrow, marsh tit, hedge accentor, balearic shearwater, starling and Hebridean song thrush.

The Argyll and Bute Planning Service technical note⁸⁹ does not provide any quantitative information on ornithological species present, but does list a number of habitat and species priorities for Argyll and Bute. This is set out within Table 12.2 below. Within the EIAR an assessment will be provided in relation to suitable habitats present and any associated IOFs that they have the potential to support.

⁸⁹ Argyll and Bute Planning Service, Biodiversity Technical Note for Planners and Developers, February 2017

Table 12.3: Habitat and Species Priorities (ornithology only) for Argyll and Bute

Ecosystem	Habitat priority	Species
Upland	Upland flushes, fens and swamps	Black grouse, black-throated diver, red-throated diver, peregrine, hen harrier, Arctic skua, ring ouzel, golden eagle, merlin, cuckoo, short-eared owl, twite
Woodland	Upland mixed ash woods	Black grouse
	Native pinewood	Spotted flycatcher, pied flycatcher, redstart
Freshwater	Eutrophic standing waters	Red-throated diver

Source: Argyll and Bute Planning Service

12.6.2. Surveys

Baseline survey results are provided in Confidential Appendix B, with a brief summary included in this section. Full details of survey methodologies (including dates, timings and weather conditions) and the results will be provided within the EIAR.

To summarise;

- Very few target or non-target flight records were recorded within the array of the existing Deucheran Hill turbines;
- 11 target species were recorded during the two years of VP surveys. The total number of individuals, not flights, is provided in brackets for each species. Species recorded (in order of magnitude) were golden plover (106), hen harrier (73), golden eagle (69), whooper swan (56), greylag goose (53), red-throated diver (12), white-tailed eagle (11), goosander (5), osprey (2), honey buzzard (1), and curlew (1). Whooper swan, golden plover and greylag goose were recorded only during the non-breeding season, and red throated diver during the breeding season only. All other species were recorded in both seasons;
- Eight secondary species were recorded during the two years of VP surveys, three of which were raptors. The total number of individuals, not flights, is provided in brackets for each species. Species recorded (in order of magnitude) were raven (440), buzzard (328), cormorant (43), sparrowhawk (28), kestrel (18), greater black-backed gull (8), heron (6) and herring gull (4);
- Raptor surveys identified one breeding target raptor species, hen harrier, which were recorded as breeding in both 2021 and 2022. Whilst golden eagle are known to breed within 5 km, none of the known nest sites were successful in 2021 and 2022 and there were no records of new nest sites;
- Black grouse were recorded during surveys in small numbers within the survey area and boundary of the Proposed Development in 2021 and 2022;
- Red- throated diver were recorded breeding within the survey area and boundary of the Proposed Development in 2021 and 2022; and
- Sixteen target species were recorded over the two years during the breeding and wintering bird surveys. There were no records of upland breeding waders within the Proposed Development, which is as to be expected given the majority of habitats present are coniferous plantation / woodland.

12.7. Assessment of potential effects

In line with the principles of proportionate EIA, embedded mitigation will be considered from the outset for the Proposed Development as outlined in Section 12.4.3. Features are proposed only to be taken on for further impact assessment within the EIAR if no significant effect cannot be concluded following the implementation of embedded mitigation.

A description of the predicted impacts is provided in the following Sections, along with a justification for scoping each IOF in or out of the EIAR. A summary is provided in Table 12.3.

12.7.1.1. Designated Sites

Under the Conservation (Natural Habitats, & c.) Regulations, any development that may have a LSE on an SPA or Ramsar site, either alone or in combination with other projects, requires an AA to be carried out by the relevant competent authority, to determine whether or not the development would have an adverse effect on the integrity of the SPA or Ramsar site.

Before an AA is initiated, a screening process is undertaken to determine whether any of the predicted impacts of the development will result in a LSE. This screening assessment provides information to the competent authority to allow them to reach a decision on whether or not the development will have a LSE on any SPA or Ramsar site and therefore whether an AA is required.

There are two internationally designated sites that are located within 10 km of the Proposed Development Area or within 25 km if designated for geese and gulls. Kintyre Goose Roosts SPA, Ramsar which is designated for non-breeding Greenland white-fronted goose and the Sound of Gigha SPA which is designated for great northern diver, Slavonian grebe, common eider and red-breasted merganser.

In addition, there are two SSSIs located within 5 km, Kintyre Goose Lochs SSSI and Rhunahaorine Point SSSI, both of which are designated for non-breeding Greenland white-fronted goose, with Rhunahaorine Point SSSI also designated for breeding little tern.

Two years of baseline ornithology surveys were undertaken to support the Proposed Development, and during these none of the qualifying species were recorded during any of the baseline surveys, and therefore no significant effects are anticipated on any of these designated sites as a result.

As such, it is proposed that all sites are **scoped out of the EIAR and no further consideration is given to the need for an AA to be conducted.**

12.7.1.2. Ornithology species

Target Species

Two years of baseline ornithology surveys were undertaken to support the Proposed Development, during which a number of target species were recorded.

All target species that were recorded during baseline surveys will be scoped into the EIA Report.

Secondary raptor species

Buzzard (no species-specific conservation designations) was regularly recorded during the VP surveys with 328 flights. Smaller numbers of sparrowhawk (BoCC amber-list⁷⁷) and kestrel (BoCC amber-list⁷⁷) were recorded (28 and 18 respectively). Whilst there is potential nesting habitat present within the survey area, no evidence of breeding was recorded, and therefore no impacts are anticipated with habitat loss or displacement.

Turbine collision during operation is a potential risk for these species, particularly buzzard and kestrel which spend a considerable amount of time hunting over open ground. However, any such effects are considered unlikely to have any more than a local impact on these populations.

It is considered that embedded mitigation will be sufficient to reduce any potential disturbance effects on these widespread species to a negligible level. Mitigation includes dedicated nest checks prior to any felling or construction taking place in an area of forestry. If an active nest is found then a suitable buffer will be implemented around the nest in which felling and construction will not be undertaken until the nesting attempt has reached its conclusion.

Additionally, there is a relatively low predicted potential impact of collision effects. **It is therefore proposed to scope out secondary raptor species from the EIA Report.**

Other secondary species

Raven (no species-specific conservation designations) was the most frequently recorded secondary species with 440 flights, followed by cormorant (no species-specific conservation designations) with 43. Small numbers of flights (less than 5) were recorded of great black-backed gull (BoCC amber-list⁷⁷), herring gull (BoCC red-list⁷⁷) and heron (no species-specific conservation designations).

Should the Proposed Development receive consent, good practice mitigation measures (e.g. pre-construction nest checks, use of exclusion zones etc.) will be followed during the pre-construction and construction phases, to ensure compliance with the Wildlife and Countryside Act (1981). It is considered that this embedded mitigation will be sufficient to reduce any potential effects as a result of disturbance or displacement on these widespread species to a negligible level. Of the species identified, raven are a tree nesting species. Whilst there will be habitat loss of some coniferous woodland during the construction of the proposed development, there is considerable suitable nesting habitat in the wider area and as a result it is not considered that this would result in a significant effect.

Turbine collision is a potential risk for these species, particularly for raven and large gulls which spend more time flying at PCH than other non-raptor secondary species (i.e. scavenging over open ground). However, any such effects are considered unlikely to have any more than a local impact on these populations.

With the mitigation measures described in **Section 8.6** in place and given the relatively low predicted potential impact of collision effects, **it is proposed to scope out other secondary species from the EIA Report.**

Passerine species

No passerines of high conservation concern were recorded in large numbers during surveys. Passerines are not considered to be significantly affected by collision with turbines.

Should the Proposed Development receive consent, good practice mitigation measures (e.g. pre-construction nest checks, use of exclusion zones etc.) will be followed during the pre-construction and construction phases, to ensure compliance with the Wildlife and Countryside Act (1981). It is considered that this embedded mitigation will be sufficient to reduce any potential effects as a result of disturbance or displacement on these widespread species to a negligible level.

As such, it is expected that there will be no significant population level impact of disturbance/displacement and/or collisions on these species as a result of construction, operation and decommissioning of the Proposed Development.

Therefore, it is proposed to scope out passerine species from the EIA Report

12.8. Receptors and impacts scoped in or out of assessment

Table 12.4 provides a summary of the designated sites and ornithological features that Natural Power seek to 'scope in' (i.e. progress to EIA) and those features that can be expected to experience no significant effects of the Proposed Development ('scoped out'). Designated sites and ornithological features that are scoped in are shown in bold and grey.

Table 12.4: Features and impacts to be assessed within the EIA Report

Receptor	Scoped in / out	Development phase	Potential impact	Assessment
Designated sites				
Kintyre Goose Roosts SPA, Ramsar, SSSI	Out			
Sound of Gigha SPA	Out			
Ornithological feature				
Target species recorded during surveys	In	Construction / Decommissioning, Operation	Disturbance / displacement, Collision	EIA
Secondary raptor species	Out			
Other secondary species	Out			
Passerine species	Out			

12.9. Scoping Questions to Consultees

The questions below are for consultees regarding the information provided in this Scoping chapter, for which it would be useful to receive feedback. Not all questions will be relevant to all consultees, therefore we request that consultees provide feedback only on those questions appropriate to them. The questions should not be considered an exhaustive list, and consequently consultees are welcome to provide feedback on any issue they consider relevant to the Proposed Development. If consultees elect not to respond, the Applicant will assume that consultees are satisfied with the approach adopted/proposed.

- **Question 16:** Do consultees have any comments regarding the EIA only concentrating on those receptors which may be subject to significant effects from the Proposed Development (either directly or indirectly)?
- **Question 17:** Table 12.3 notes the receptors and potential impacts proposed to be included within the EIA. Do consultees agree with the list of receptors and impacts to be included within the EIAR?
- **Question 18:** Are consultees satisfied that ornithological survey effort completed to date is suitable in order to provide a robust assessment of effects?

13. Archaeology and Cultural Heritage

13.1. Introduction

This chapter of the EIA Scoping Report outlines the baseline archaeological and cultural heritage conditions within the site and proposed access track and outlines the methodology that will be utilised for the identification and assessment of potential effects on heritage assets within the EIA Report. This chapter also considers the potential for significant effects on heritage assets arising from the Proposed Development and highlights instances where mitigation measures may be required.

This chapter of the EIA Scoping Report has been produced by AOC Archaeology Group, a Registered Organisation of the Chartered Institute for Archaeologists (CIfA).

This chapter is supported by the following figures and appendix:

- Figure 13.1: Heritage Assets within the 1 km study area for the site and the 200 m study area for the access track;
- Figure 13.2: Designated Heritage Assets within the 10 km study area; and
- Appendix 13.1: Gazetteer of Heritage Assets and Events, see Appendix C.

13.2. Baseline Description

The following scoping baseline has been informed by:

- The National Record for the Historic Environment (NRHE) as held by HES and available via Canmore;
- The British Geological Survey (BGS);
- National Collection of Aerial Photography (NCAP), held by HES;
- National Library of Scotland for published historic and Ordnance Survey maps;
- The Regional Archaeological Research Framework for Argyll (RARFA); and
- HES' Historic Land-use Assessment (HLA) available online.

All heritage assets within the site, and proposed access track; all heritage assets within 1 km of the site and within 200 m of the proposed access track; all designated heritage assets between 1 km and 5 km from the site; and all nationally important designated heritage asset within 10 km of the site have been identified. These assets have been assigned an 'Asset Number' unique to this assessment, and the Gazetteer (Appendix 13.1) includes information regarding the NRHE/designation reference, type, period, grid reference, and other descriptive information as derived from the consulted sources. These assets are also depicted on Figure 13.1 Heritage Assets within the 1 km study area for the site and the 200 m study area for the access track and Figure 13.2 Designated Heritage Assets within the 10 km study area.

The time periods referred to below are as set out in the Regional Archaeological Research Framework for Argyll (RARFA)⁹⁰:

- Prehistoric, sub-divided into the following sub-periods where possible;
 - Early Prehistoric c. 10, 050 BC- 4050BC
 - Neolithic, Chalcolithic and Bronze Age c 4000BC – 800BC
 - Iron Age c. 800BC- AD500
- Early Medieval AD400-1100;

⁹⁰ Scottish Archaeological Research Framework (ScARF). (N.d) Regional Archaeological Research Framework for Argyll. Available from: <https://scarf.scot/regional/rarfa/> [Accessed 19/08/2024]

- Medieval AD1100-1600;
- Early Modern AD1600-1900;
- Modern AD1900-Present.

The HLA map locates the site largely within plantation forestry⁹¹. Based on a review of available historic mapping and aerial photography, the extant conifer plantation was largely present by 1988⁹². The extant Deucheran Hill Wind Farm, within the north-western area of the site is characterised as an area of “Power Generation”. The proposed access track extends through areas characterised as plantation forestry, rectilinear fields and farms and rough grazing land which reflects the changing land use on the lower lying ground to the west of the site.

The underlying bedrock geology is recorded as Beinn Bheula Schist Formation composed of gritty psammite and pelite, a metamorphic bedrock formed between 1000 and 541 million years ago between the Tonian and Ediacaran periods. Mapping of the extent of superficial geological deposits by the BGS is not always accurate due to the discontinuity in distribution of these deposits and difficulties in accessing below ground data. Superficial deposits recorded include Till, an ice age deposit and alluvium, composed of clays, silts, sands and gravels formed in the Quaternary period. Archaeological and paleoenvironmental remains can survive within and beneath alluvial deposits due to the sequential nature of deposition.

An initial assessment of the data held by the NRHE indicates that there are no designated heritage assets within the site.

Within the site the NRHE identifies 25 non-designated heritage assets (Assets 52-56; 58, 59, 63-65, 69, 72-82, 90, 103 & 104) and a review of the Ordnance Survey (OS) maps have identified a further six non-designated heritage assets (Assets 111-116) within the site. These assets can be largely characterised as prehistoric ritual, funerary and burial assets and early modern agricultural related assets. The centre point of a walkover survey and series of watching briefs undertaken in 2000 for the existing Deucheran Hill Wind Farm (Event 102) are recorded within the site.

Within 1 km of the site are seven designated heritage assets;

- Three Scheduled Monuments:
 - Carragh an Talaidh, Chambered Cairn, Brackley (Asset 6) located c. 0.11 km west and c. 330 m east of the site and c. 2.8 km south-east of the nearest turbine (T17);
 - Grogport Old Manse, Dun 180 m ENE of (Asset 7) located c. 0.56 km west of the site and c. 3.67 km south-east of the nearest turbine (T5);
 - Sunadale, Dun 275 m NE of (Asset 8) located 0.05 km west of the site and c. 3.12 km west of the nearest turbine (T5).
- Two Category B Listed Buildings;
 - Dippen Bridge, Carradale (Asset 45), located 0.16 km east of the site and c. 5.26 km south-east of the nearest turbine (T23);
 - Grogport Old Manse, Grogport (Asset 46) located c. 0.45 km east of the site and c. 3.76 km west of the nearest turbine (T17); and
- Two Category C Listed Building;
 - Saddell Parish Church, Dippen (Asset 44), located 0.06 km west of the site and c. 5.06 km south-east of the nearest turbine (T23);
 - Carradale, Carradale house (Asset 86), located 1.07 km east of the site and c. 5.76 km south-east of the nearest turbine (T23).

91 HES. (N.d.) HLAmap. [Online]. Available from: <https://map.hlamap.org.uk/> [(Accessed 19/08/2024)]

92 Sortie ASS/63488, Frame 0298 & 0299

The NRHE have recorded numerous prehistoric and medieval findspots, and early modern agricultural and extractive assets within 1 km of the site. These were largely recorded during previous archaeological works (Events 100, 101 & 108) and are typical of a relatively undeveloped, rural landscape prior to the planting of commercial conifer plantations.

A review of the pre- Ordnance Survey (OS) maps indicate that the site was located within the area known as Kintyre, which was in the ownership of Clan Campbell⁹³ in relatively undeveloped upland to the west of Glen Carradale and the east of Killeen^{94,95}. The OS maps published in 1868 (25 inch) and 1869-70 (6 inch) depict the site within a mainly upland environment with lochans and lochs annotated and rock outcropping and bog or wetlands illustrated. Six crofts or farmsteads (Assets 77, 78, 80-82 & 93) are annotated within areas of improved land along the Carrdale Water, earlier referred to as Glen Carradale, which is excluded from the site boundary. Within this area agricultural and small-scale industrial assets are also recorded. This area was likely preferred for settlement and agricultural activities due to the proximity of water courses.

The extant nine wind turbines on Deucheran Hill Wind Farm (Planning reference 99/00925/DET) within the centre western area of the site became fully operational in 2001⁹⁶. These turbines range in tip height from 76 m to 93 m. Whilst no significant remains were identified during a series of watching briefs undertaken for the extant Deucheran Hill Wind Farm (Event 102), it cannot be discounted that archaeological remains may survive beyond the footprint of the existing Wind Farm, within the footprint of the Proposed Development.

It must also be taken into account that the Proposed Development is located in mature, conifer plantation, and the planting and removal of woodland is known to have an adverse impact on buried archaeological remains. However, archaeological remains can survive under planted woodland, and it is often considered that root damage is less damaging to buried archaeological remains than cultivation activities⁹⁷.

Between 1 km and 5 km from the site, there are a further:

- Ten Scheduled Monuments (Assets 1-5, 22 & 33-36) inclusive of a medieval church and burial ground (Asset 1) and castle (Asset 36) and prehistoric ritual, defensive and settlement/agricultural assets (Assets 2-5, 22 & 33-35);
- Three early modern and modern Category A Listed Buildings (Assets 37, 43 & 48);
- Four 19th century Category B Listed Buildings (Assets 38, 41, 42 & 47); and
- Two 19th century Category C Listed Buildings (39 & 40).
- There are 35 nationally important designated heritage assets between 5 km and 10 km of the site, which includes:
 - Thirty-three Scheduled Monuments (Assets 12-21, 23-31, 50 & 125-134) inclusive of:
 - Prehistoric defensive and domestic, and ritual and funerary assets;
 - Medieval ecclesiastical remains and burial markers; and
 - Medieval and/or early modern pre-improvement agricultural assets.
 - Two Category A Listed Buildings (Assets 49 & 50).

93 Cowley, J. (1734) A map of such part of his Grace the Duke of Argyle's heritable dukedom, and justiciary territories, islands, superiorities & jurisdictions as lye contiguous upon the western Coast of North Britain, within the now united shires of Inverary and Tarbat,

94 Anon. (1770). An Exact Map of the Continent of Argyle Shire

95 Langlands, G. (1793). A map of the district of Kintyre in Argyllshire ... / by ... George Langlands & Son... Bell and Crichton sculp.

96 RWE. 2024. Onshore wind farm Deucheran Hill. Available from: <https://uk.rwe.com/locations/deucheran-hill-onshore-wind-farm/> [Accessed 19/08/2024]

97 Forest Research. 2023. WOODLAND AND ARCHAEOLOGY – OVERVIEW OF POTENTIAL ISSUES. Available from: <https://www.forestresearch.gov.uk/tools-and-resources/fthr/historic-environment-resources/woodland-and-archaeology/woodland-and-archaeology-overview-of-potential-issues/> [Accessed 19/08/2024]

The proposed access track is anticipated to use much of the existing access track to the existing Deucheran Hill Wind Farm and originates from the A83 at Killean. The NRHE records eight non-designated heritage assets (Assets 88, 89, 135, 137 & 141-144) within the extent of the proposed access track which include five undated extractive assets (Assets 88, 89 & 141 -144) recorded during the archaeological survey for the existing Deucheran Hill Wind Farm (Event 102), a cup and marked stone (Asset 135) and the location of a possible church (Asset 137).

Two Scheduled Monuments; St John's Church: Church, Burial Ground and Carved Stones, Killean (Asset 1); and Killean, Fort NE of (Asset 3) are located within 200 m of the proposed access track. The Category A listed The Doll's Houses, Killean (Asset 48) is located immediately south of the western terminal end proposed access track and there are an additional three Category B Listed Buildings (Assets 38, 41 & 47) in this area. The NRHE also records five further non-designated heritage assets (Assets 136, 138-140 & 145) within the 200 m study area.

13.3. Guidance and Legislation

Legislation and policy concerning the protection and conservation of cultural heritage assets includes:

- Ancient Monuments and Archaeological Areas Act 1979 (as amended)⁹⁸;
- Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997 (as amended)⁹⁹;
- Planning etc. (Scotland) Act 2006¹⁰⁰;
- Historic Environment (Amendment) (Scotland) Act 2011¹⁰¹;
- Historic Environment (Scotland) Act 2014¹⁰²;
- Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended)¹⁰³;
- Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017¹⁰⁴;
- National Planning Framework 4 (NPF4)¹⁰⁵;
- Historic Environment Policy for Scotland (HEPS)¹⁰⁶, including Designation Policy and Selection Guidance¹⁰⁷;
- Argyll and Bute Local Development Plan 3 (LDP3)¹⁰⁸

98 UK Government (1979). Ancient Monuments and Archaeological Areas Act 1979. Available from: http://www.legislation.gov.uk/ukpga/1979/46/pdfs/ukpga_19790046_en.pdf [Accessed 19/08/2024]

99 UK Government (1997). Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. Available from: https://www.legislation.gov.uk/ukpga/1997/9/pdfs/ukpga_19970009_en.pdf [Accessed 19/08/2024]

100 UK Government (2006). Planning etc. (Scotland) Act 2006. [Online]. Available at: <http://www.legislation.gov.uk/asp/2006/17/contents> [Accessed 19/08/2024]

101 UK Government (2011). Historic Environment (Amendment) (Scotland) Act 2011. Available from: http://www.legislation.gov.uk/asp/2011/3/pdfs/asp_20110003_en.pdf [Accessed 19/08/2024]

102 UK Government (2014). Historic Environment (Scotland) Act 2014. Available from: <http://www.legislation.gov.uk/asp/2014/19/contents/enacted> [Accessed 19/08/2024]

103 UK Government (2017). Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. Available from <https://www.legislation.gov.uk/ssi/2017/102/contents/made>. [Accessed 19/08/2024]

104 UK Government. (2017). The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (Scotland) Available from: <https://www.legislation.gov.uk/ssi/2017/101/contents/made> [Accessed 19/08/2024]

105 Scottish Government (2023). National Planning Framework 4. Available from: <https://www.gov.scot/publications/national-planning-framework-4/>. [Accessed 19/08/2024]

106 Historic Environment Scotland (HES) (2019). Historic Environment Policy for Scotland. Available from: <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/historic-environment-policy-for-scotland-heps>. [Accessed 19/08/2024]

107 HES (2020). Designation Policy and Selection Guidance. [Online]. Available from: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=8d8bbaeb-ce5a-46c1-a558-aa2500ff7d3b> [Accessed 19/08/2024]

108 Argyll and Bute Council (ABC). (2024). Argyll and Bute Local Development Plan 2 Adopted February 2024. Available from: <https://www.argyll-bute.gov.uk/planning-and-building/planning-policy/local-development-plan-2> [Accessed 19/08/2024]

- Policies 15, 16, 19 & 21.

The following guidance documents will be consulted during the assessment to assist in the determination of potential effects on heritage assets:

- Planning Advice Notes (PAN) for Scotland, in particular ‘PAN 2/2011: Planning and archaeology’¹⁰⁹;
- HES’s guidance on setting in ‘Managing Change in the Historic Environment: Setting’¹¹⁰;
- NatureScot and HES’s published guidance contained within ‘Environmental Impact Assessment Handbook v5’¹¹¹;
- HES’s Our Past, Our Future: The Strategy for Scotland’s Historic Environment¹¹²;
- The Chartered Institute for Archaeologists (CIfA) ‘Code of Conduct: Professional Ethics in Archaeology’¹¹³;
- CIfA’s Regulations on Professional Conduct¹¹⁴;
- CIfA’s ‘Standard and Guidance for Historic Environment Desk-Based Assessment’¹¹⁵; and
- CIfA’s ‘Standard and Guidance for Commissioning Work or Providing Advice on Archaeology and the Historic Environment’¹¹⁶.

13.4. Study Areas

In order to assess the potential for significant effects on cultural heritage assets resulting from the Proposed Development, the following study areas have been identified:

- A core study area which includes all land within the site and proposed access track which will be subject to assessment for potential direct effects. This site and proposed access track will be subject to detailed walkover survey which will be used to identify cultural heritage assets which may be directly affected by the Proposed Development;
- A 1 km study area around the site, and a 200 m study area around the proposed access track for the identification of all known heritage assets and known previous archaeological interventions in order to help predict whether any similar hitherto unknown archaeological remains are likely to survive and thus be impacted by the Proposed Development;
- A 5 km study area around the site for the assessment of potential effects on the settings of all designated heritage assets including World Heritage Sites (WHS), Scheduled Monuments, all Listed Buildings, Inventoried Battlefields, Inventoried Gardens and Designed Landscapes (GDL), and Conservation Areas; and

109 Scottish Government (2011). PAN2/2011 Planning and Archaeology. Available from: <https://www.gov.scot/publications/pan-2-2011-planning-archaeology/> [Accessed 19/08/2024]

110 HES (2020). Managing Change in the Historic Environment: Setting. Available from: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549>. [Accessed 19/08/2024]

111 Scottish Natural Heritage (SNH) & Historic Environment Scotland (HES) (2018). Environmental Impact Assessment Handbook v5. Available from: <https://www.nature.scot/sites/default/files/2018-05/Publication%202018%20-%20Environmental%20Impact%20Assessment%20Handbook%20V5.pdf> [Accessed 19/08/2024]

112 HES(2023). Our Past, Our Future. Available from: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=79204155-9eb2-4d29-ab14-aff200ec2801> [Accessed 19/08/2024]

113 Chartered Institute for Archaeologists (CIfA) (2019). Code of Conduct: Professional Ethics in Archaeology (updated 2023). Available from: <https://www.archaeologists.net/sites/default/files/Code%20of%20conduct%20revOct2022.pdf> . [Accessed 19/08/2024]

114 CIfA. (2019). Regulations for professional conduct- Updated 2021. Available from: <https://www.archaeologists.net/codes/cifa> [Accessed 19/08/2024]

115 CIfA (2014). Standard and guidance for historic environment desk-based assessment (updated 2017 & 2020). Available from: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf. [Accessed 05/03/2024]

116 CIfA (2014). Standard and Guidance for Commissioning Work or Providing Consultancy Advice on the Historic Environment (updated 2020). Available from: https://www.archaeologists.net/sites/default/files/CIfAS%26GCommissioning_2.pdf [Accessed 19/08/2024]

- A 10 km study area around the site for the assessment of potential effects on the settings of all nationally important designated heritage assets including WHS, Scheduled Monuments, Category A Listed Buildings, Inventoried Battlefields, and GDL's.

Note there are no WHS', Inventory Battlefields, GDL's or Conservation Areas within the 5 km or 10 km study areas.

Consideration has also been given to the potential for setting effects upon assets beyond 10 km. This has been done by reviewing the designated heritage assets beyond 10 km and taking their setting into consideration. This exercise has considered that the potential for significant effects beyond 10 km is highly unlikely and as such it is not intended to consider assets beyond 10 km as set out above. Further justification for this is given in Section 13.8.

Designated heritage assets identified by consultees beyond 10 km will be included for an assessment of potential effects on their settings.

13.5. Assessment Methodology

13.5.1. Data Gathering

The assessment will establish the historic baseline for the site, and proposed access track. Baseline data will be collated from the following sources:

- The National Record of the Historic Environment (NRHE) as held by HES;
- The ABC Historic Environment Record (HER) held by the West of Scotland Archaeology Service (WoSAS) inclusive of Non-Statutory Records (NSR) Code C and V assets as identified by WoSAS;
- National Library of Scotland (NLS) for published historic, Estate and Ordnance Survey maps;
- National Collection of Aerial Photography (NCAP) as held by HES for vertical and oblique aerial photographs;
- Published archival sources including the Old and New Statistical Accounts;
- Scottish Palaeoecological Archive Database (SPAD) for information regarding the palaeoecological and paleoenvironmental potential of the Site and surrounding landscape;
- Historic Land-Use Assessment Data for Scotland (HLAMap);
- The Regional Archaeological Research Framework for Argyll (RARFA)¹¹⁷; and
- Available client supplied data about the site.

Any relevant published works and grey literature reports, such as previous archaeological reports and assessments, will also be considered.

There is currently no LiDAR data or imagery for the site, or the surrounding area held on the Scottish Remote Sensing Portal.

Following the completion of desk-based research and data gathering, an archaeological walkover survey of the site and proposed access track will be undertaken with the aim of identifying any previously unknown remains and establishing the survival, extent, significance, and relationship of all known heritage assets within the site. Weather, ground cover and any other conditions affecting the visibility during the survey will also be recorded. All heritage assets encountered will be recorded and photographed. The site is currently located within conifer plantations, and as such the walkover survey will be limited to existing access tracks, and where accessible, forestry clearings and fire breaks. Detailed survey in areas of existing and felled forestry may not be possible due to health and safety restrictions; however, these limitations will be taken into consideration in proposing mitigation measures.

¹¹⁷ Scottish Archaeological Research Framework (ScARF). (N.d) Regional Archaeological Research Framework for Argyll. Available from: <https://scarf.scot/regional/rarfa/> [Accessed 19/08/2024]

The walkover survey will also identify areas within the site that may require further archaeological works in advance of any future development.

All designated heritage assets within the identified study areas will be identified as part of the assessment of the potential effects of the Proposed Development on their settings. A ZTV will be used to initially identify designated heritage assets which require detailed assessment. A review of designated heritage assets outwith the ZTV will also be undertaken prior to site visits to identify any designated heritage assets which may feature the Proposed Development within key views, whether the asset itself is within the ZTV or not. Any designated heritage assets considered to be particularly sensitive to changes in the wider landscape will also be subject to detailed setting assessment. Designated heritage assets outwith these criteria will be scoped out because they are unlikely to be significantly affected.

Identified designated heritage assets will be visited as part of the field survey, insofar as they are publicly accessible and access to them is safe, to establish their current settings and how this contributes to an understanding, appreciations and experience of the assets and their significance.

Visualisations, through wireframes and/or photomontages, will be provided to support the assessment of effects on assets as appropriate; the need for photomontage visualisations and appropriate viewpoints will be agreed with relevant consultees. Following a review of designated heritage assets within the study areas it is anticipated that visualisations may be required from the following designated heritage assets:

- Carragh an Talaidh, Chambered Cairn, Brackley (Asset 6) located c. 0.11 km west and c. 330 m east of the site and c. 2.8 km south-east of the nearest turbine (T17);
- A wireline from either Grogport Old Manse, Dun 180 m ENE of (Asset 7) or Sunadale, Dun 275 m NE of (Asset 8), two Scheduled dun's on the eastern coast of the Kintyre peninsula, within 4 km of the nearest proposed turbine (T5). Either visualisation would be representative of intervisibility with the Proposed Development from the east;
- A wireline from Killeen, Fort NE of (Asset 3) c. 4.17 km west of the nearest proposed turbine (T9);
- A wireline from Garvalt, Dun 500 m SW of (Asset 5) within 5 km of the site and c. 5.65 km south-west from the nearest proposed turbine (T23);
- A wireline including of Airds Castle, 235 m SE of Barncluith, Carradale (Asset 36) towards the Proposed Development. It is noted that a key view of the Castle was looking towards Kilbrannan Sound and Arran and thus the return view may have been of some importance. A wireline may be created from Arran or from Kilbrannan Sound towards the Proposed Development; and
- A wireline from either Auchengallon, cairn 150 m WSW of (Asset 132) or Standing stones, 170 m NW of Druid Barn (Asset 134) as a visual representation of what views from a group of prehistoric ritual and funerary and domestic designated heritage assets on the western coast of the Isle of Arran will have of the Proposed Development and other cumulative developments to understand the impact of both on their settings.

The final list of visualisations will be informed by ZTV analysis, consultation with relevant consultee's and if possible, site visits.

13.5.2. Impact Assessment

The assessment will distinguish between the term 'impact' and 'effect'. An impact is defined as a physical change to a heritage asset or its setting, whereas an effect refers to the significance of this impact. The first stage of the assessment will involve establishing the importance of the heritage asset and assessing the sensitivity of the asset to change (impact). Using the proposed design for the Proposed Development, an assessment of the impact magnitude will be made and a judgement regarding the level and significance of effect will be arrived at.

The existing Deucheran Hill Wind Farm is due to be decommissioned in 2026. The predicted impact of the Proposed Development on heritage assets will consider:

1. The magnitude of change with no turbines (as the extant wind farm will have reached the end of its operational stage);
2. The magnitude of change with the existing turbines (i.e the magnitude of additional change beyond what has previously been consented); and

13.5.2.1. Direct Impacts

Direct physical impacts to assets occur when the fabric of known or undiscovered assets are removed or damaged as a result of Proposed Development. This will be permanent and generally occurs during the construction phase.

Indirect physical effects occur as an indirect consequence of the development such as increased/decreased erosion or damage from vibration of piling, such impacts are likely to be permanent.

The EIA Report chapter will fully describe the baseline historic environment conditions and will assess the potential for direct impacts upon known heritage assets within the site, and proposed access track and will outline the potential for hitherto unknown buried remains to survive and thus potentially be impacted upon.

13.5.2.2. Settings Effects

The assessment will also consider the identified heritage assets in the surrounding study areas which could be subject to potential impacts upon setting, including the potential for cumulative impacts. The EIA Report chapter will be supported by a detailed ZTV which will be used to identify assets intervisible with the Proposed Development and/or where the Proposed Development would appear in key views to and from assets. It is envisaged that visualisations (either wireframes or photomontages) will be produced for some assets to aid in assessment of settings impacts. The viewpoints required will be agreed in consultation with HES, WoSAS, as archaeological advisors to ABC, and the project's LVIA consultants.

The setting assessment will be undertaken with reference to HES' Managing Change Guidance on setting¹¹⁸ and will aim to establish the current setting of the identified heritage assets, how that setting contributes to the understanding, appreciation and experience of those assets and how the Proposed Development could impact upon this.

13.5.2.3. Cumulative Effects

Cumulative effects will also be considered. The assessment of cumulative effects on heritage assets will be based upon consideration of the effects of the Proposed Development on the settings of heritage assets, in addition to the likely effects of other operational/under construction, consented and proposed (at the application stage) wind farm schemes.

The assessment will take into account the relative scale (i.e. size and number of turbines) of the identified developments, their distance from the affected assets, and the potential degree of visibility of the various developments from the assets. Cumulative wirelines from those assets most likely to experience significant cumulative impacts on their settings will be provided, if appropriate.

The schemes to be included in the cumulative impact assessment will be those agreed with the planning authority via consultation and will be undertaken according to the guidance in NatureScot's Assessing the Cumulative Impact

¹¹⁸ HES (2020). Managing Change in the Historic Environment: Setting. Available from: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=80b7c0a0-584b-4625-b1fd-a60b009c2549> [Accessed 19/08/2024]

of Onshore Wind Energy Developments¹¹⁹ and Historic Environment Scotland's Environmental Impact Assessment Handbook¹²⁰.

13.5.2.4. Integrity of Setting

NPF4 indicates that development proposals affecting Scheduled Monuments will only be supported where 'significant adverse impacts on the integrity of setting of a scheduled monument are avoided'¹²¹. Significant adverse impacts on integrity of setting are judged here to relate to whether a change would adversely affect the asset's key attributes or elements of setting which contribute to an asset's significance. It is considered that a significant impact upon the integrity of the setting of an asset will only occur where the degree of change that will be represented by the Proposed Development would adversely alter those factors of the monument's setting that contribute to cultural significance such that the understanding, appreciation and experience of an asset are not adequately retained.

In terms of effects upon the setting of heritage assets, it is considered that only those effects identified as 'significant' in EIA terms will have the potential to significantly adversely impact upon integrity of setting. Where no EIA significant effect is found it is considered that there would be no significant impact upon the integrity of an asset's setting. This is because for many assets, setting may make a limited contribution to their significance and as such changes would not significantly impact the integrity of their settings.

Where EIA significant effects are found, a detailed assessment of adverse impacts upon integrity of setting will be made. Whilst non-significant effects are unlikely to significantly impact integrity of setting, the reverse is not always true. That is, the assessment of an effect as being 'significant' in EIA terms does not necessarily mean that the adverse effect to the asset's setting will significantly impact its integrity. The assessment of adverse impact upon the integrity of an asset's setting, where required, is a qualitative one, and largely depends upon whether the impact predicted would result in a major impediment to the ability to understand or appreciate the heritage asset.

13.6. Proposed Mitigation

National planning policies and planning guidance as well as the local planning policies require that account is taken of potential effects upon heritage assets by proposed developments and that where possible such effects are avoided. Where avoidance is not possible these policies require that any significant effects are minimised or offset.

The Proposed Development will be designed, wherever possible, to avoid direct impacts upon known heritage assets, including those identified by the NRHE and HER and those identified during desk-based assessment and the walkover survey.

The Scheduled Killean, Fort NE of (Asset 3) is located within 50 m of the proposed access track. Any works within the Scheduled Monument would require Scheduled Monument Consent (SMC) prior to works commencing. The Scheduled Monument extent will be avoided by design. The location of the Scheduled fort should be highlighted to the construction team during construction works. This may take the form of the asset being fenced off with a suitable buffer prior to construction works commencing and/or signage locating the Scheduled Monument to the construction team. This would identify the Scheduled Monument and prevent any accidental incursion.

Given the presence of known heritage assets on the site a programme of non-invasive and invasive archaeological works may be required. The exact scope of any such mitigation would be dependent upon the predicted impacts and archaeological potential identified in the EIA Report and will be set out in a Written Scheme of Investigation

119 NatureScot. (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments. Available from: [Guidance - Assessing the cumulative landscape and visual impact of onshore wind energy developments | NatureScot](#) [Accessed 19/08/2024]

120 Scottish Natural Heritage (SNH) & Historic Environment Scotland (HES) (2018). Environmental Impact Assessment Handbook v5. Available from: [Environmental Impact Assessment Handbook | Hist Env Scotland \(historicenvironment.scot\)](#) [Accessed 19/08/2024]

121 Scottish Government (2023). NPF4, 7(ii). Available from: <https://www.gov.scot/publications/national-planning-framework-4> [Accessed 19/08/2024]

(WSI) agreed with WoSAS, archaeological advisors to ABC and the Applicant prior to being implemented. Any programme of archaeological works should be undertaken in line with the agenda, questions and recommendations included in RARFA¹²².

The Procurement Reform (Scotland) Act 2014¹²³ requires contractors and their supply chains to consider not only cost when commissioning or procuring services but also how they can make a positive economic, social and / or environmental impact and suppliers are required to set out their proposals for delivering social value that results in positive benefits to communities through a development. The implication of this is stated in NPF4 Policy 7(o)¹²⁴ where impacts to heritage assets cannot be avoided it is stated that “*excavation, recording, analysis, archiving, publication and activities to provide public benefit may be required through the use of conditions or legal/planning obligations.*”

HEPS policies 1-5¹²⁵ also indicate how the historic environment can be make a positive economic, social and/or environmental impact, through information dissemination, the promotion of information, the exchange of ideas, programmes of enhancement and enabling communities to engage with the heritage environment.

The Proposed Development turbine layout will be designed where possible, to minimise impacts on the settings of designated heritage assets. If significant effects are still predicted despite minimisation through design, appropriate additional compensatory mitigation may be proposed.

13.7. Potential Impacts

13.7.1. Direct Impacts

This assessment has identified 32 non-designated heritage assets within the site. None of the identified heritage asset are located within 100 m of the proposed turbine locations. However, the exact location of infrastructure and habitat areas associated with the Proposed Development is unknown as present and as such there is the potential for direct impacts on known heritage assets.

The Proposed Development would have the potential to result in direct impacts on hitherto unknown heritage assets within the site during the construction phase of the Proposed Development.

13.7.2. Settings Impacts

The Proposed Development would have the potential to result in impacts (including cumulative impacts) on the settings of heritage assets in the wider landscape. Designated heritage assets within 10 km of the site will be identified and assessed in the EIA Report.

There are no designated heritage assets recorded within the site.

Within the 1 km study area there are seven designated heritage assets (Assets 4-8, 44-46 & 86). There are ten Scheduled Monuments, three Category A Listed Buildings; four Category B Listed Buildings and two Category C Listed Buildings within 5 km of the site. There are 35 nationally important designated heritage assets; 33 Scheduled Monuments and two Category A Listed Buildings) recorded between 5 km and 10 km from the site. The Proposed

122 Scottish Archaeological Research Framework (ScARF). (N.d) Regional Archaeological Research Framework for Argyll. Available from: <https://scarf.scot/regional/rarfa/> [Accessed 19/08/2024]

123 UK Government (2014). Procurement Reform (Scotland) Act 2014. Available from: <https://www.legislation.gov.uk/asp/2014/12/contents> [Accessed 19/08/2024]

124 Scottish Government (2023). National Planning Framework 4. Available from: <https://www.gov.scot/publications/national-planning-framework-4/> [Accessed 19/08/2024]

125 Historic Environment Scotland (HES) (2019). Historic Environment Policy for Scotland. Available from: <https://www.historicenvironment.scot/advice-and-support/planning-and-guidance/historic-environment-policy-for-scotland-heps> [Accessed 19/08/2024]

Development has the potential to result in impacts (including cumulative impacts) on the settings of heritage assets. A full assessment of the impact upon the setting of these designated heritage assets will be informed by ZTV analysis as well as by a detailed site visit, and visualisations, if needed. The magnitude of impact and level of effect will be dependent upon the final design.

The assessment will also identify all NSR Code C (“Almost certainly of national importance”) and V (“Probably of national importance”) assets as well as any other assets WoSAS deem to be of national importance added to the HER following the one-off NSR review. The impact of the Proposed Development on the settings of these assets will be assessed in the EIA Chapter, where appropriate. A full assessment of the impact of the setting of these assets will be informed by ZTV analysis as well as by a detailed site visit, and visualisations, if needed. The magnitude of impact and level of effect will be dependent upon the final design.

13.8. Receptors and Impacts Scoped In and Out of Assessment

Based on baseline conditions, it is proposed that the following elements are scoped into the assessment:

- Direct impacts upon:
 - Known designated and non-designated assets within the site;
 - Potential unrecorded/unknown archaeological remains on site; and
 - Palaeoenvironmental remains.
- Setting impacts upon:
 - Designated assets with theoretical visibility within the 10 km study area (as identified using the ZTV) or with identified sensitivity to setting change at greater distances;
 - Designated assets beyond 10 km identified by HES; and
 - Non-designated assets with theoretical visibility located within the 1 km study area identified as being of high sensitivity to changes in their setting;
- Cumulative impacts.

Direct impacts on cultural heritage assets located outside of the site, and proposed access track will be scoped out of the assessment.

Impacts on the settings of non-designated cultural heritage assets and features beyond the 1 km study area will be scoped out of the assessment as these assets are generally considered less sensitive to changes in their settings and are judged to be unlikely to be subject to significant settings effects.

Impacts on the settings of heritage assets located outside of the ZTV will be scoped out as these assets are unlikely to be adversely impacted by the Proposed Development. However, where appropriate, consideration will be given to the potential for views of assets which include the Proposed Development, even where the asset itself lies outside of the ZTV.

Settings impacts on designated heritage assets from the construction and operation of the proposed access track will be scoped out. The proposed access track proposed to be used is anticipated to follow the existing access tracks and thus there will be little to no change to the settings of nearby designated heritage assets. As such no significant impacts are anticipated.

Impacts on the settings of heritage assets beyond 10 km of the Proposed Development and not identified by consultees will be scoped out, as most assets beyond that distance will be too far distant to have their settings significantly adversely affected by the Proposed Development. A review of designated heritage assets beyond 10 km from the site has been undertaken as part of this scoping assessment. It is acknowledged that the Inventory Garden and Designed Landscape of Ashmore House (GDL00005) extends 10.1 km to the west of the site, however the elements of its setting which contribute to its cultural significance are not related to views from the GDL towards

the site. The Scheduled extent of Kildonald Point, fort and cairn 515 m SE of Kildonald Cottage (SM3110) extends c. 10.15 km south of the site and would extend c. 14.54 km south of the nearest proposed turbine (T23). The view from the fort along coastal approaches is a key element of the setting of the fort which would not be altered by the Proposed Development. At over 10 km from the nearest turbine the Proposed Development is not anticipated to have a significant impact on the setting of the fort and cairn. No other designated heritage assets beyond 10 km were found to have key views towards the site, largely being assets with settings related to the surrounding coastlines, as such assets beyond the 10 km study area are not anticipated to have significant impacts on their setting.

A detailed assessment of the effects of decommissioning on cultural heritage assets will be scoped out of the EIA because:

- the future baseline conditions (environmental and other developments) cannot be predicted accurately at this stage;
- the detailed proposals for decommissioning are not known at this stage, and
- the best practice decommissioning guidance methods will likely change during the lifetime of the Proposed Development.

13.9. Scoping Questions to Consultees

This document forms the start of the consultation process. The following are questions for consultees:

- **Question 19:** Are there any additional sources of baseline information which should be referred to, to inform the appraisal of effects on cultural heritage?
- **Question 20:** Are the proposals to scope out certain elements of cultural heritage from detailed assessment appropriate?
- **Question 21:** Are there any assets beyond the proposed study areas that consultees would like to see scoped into the assessment?
- **Question 22:** Are there any visualisations that the consultees would like to see as part of the assessment?

Following receipt of the Scoping Opinion, detailed follow-up consultation may be undertaken with relevant consultees to further agree the scope of the assessment and/or visualisations.

14. Hydrogeology, Hydrology, Geology and Peat

14.1. Introduction

This chapter considers the potential effects of the Proposed Development with respect to, hydrology (including flood risk), hydrogeology, geology and peat. The chapter should be read in conjunction with the relevant parts of Chapter 11: Ecology, where common receptors have been considered and where there is an overlap or relationship between the assessment of effects.

14.2. Baseline Conditions

14.2.1. Data Sources

The appraisal of existing (baseline) conditions for the purposes of this chapter has involved the collection and interpretation of a range of data and information from published material, plus consultations relating to the local and wider hydrological environment with statutory bodies, principally the SEPA and ABC. The data collected, and other sources of information, are listed in Table 14.1. The assessment is also inter-related with, and uses information from, other chapters of this Scoping Report, such as **Chapter 11: Ecology**.

Table 14.1: Sources of Desk Study Information for Hydrology, Hydrogeology, Geology and Peat

Source	Data
OS 1:50,000, Landranger Sheet 69 - Isle of Arran OS 1:25,000, Explorer Sheet 357 - Kintyre North and Sheet 356 - Kintyre South Campbeltown	Topography and features
Centre for Ecology and Hydrology (CEH) National River Flow Archive (NRFA) Rainfall data - Gauging Station: Carradale at Dippen https://nrfa.ceh.ac.uk/data/station/info/88001	Climate
British Geological Survey (BGS) Hydrogeological Map of Scotland (1:625,000) (1988) BGS GeoIndex (onshore) (1:50,000) BGS/Natural Environment Research Council (NERC). A GIS of Aquifer Productivity in Scotland. Explanatory Notes. Commissioned Report CR/04/047N http://nora.nerc.ac.uk/504764/1/CR-04-047N_SEPA%20Aq%20productivity.pdf BGS Aquifer classification map layer on Scotland's Environment website https://map.environment.gov.scot/sewebmap/	Geology, ground conditions and hydrogeology
National Soil Map of Scotland (Macaulay Institute for Soil Research) http://soils.environment.gov.scot/ Phase 1 Peat Surveys Interpolated peat depths (Doc Ref: 1282535)	Peat
River Network Map - CEH NRFA www.ceh.ac.uk/data/nrfa/index.html UK CEH NRFA: SEPA Gauge 88001 https://nrfa.ceh.ac.uk/data/station/meanflow/88001	Hydrology and flows
SEPA flood map http://map.sepa.org.uk/floodmap/map.htm	Flood risk

Source	Data
Scottish Government (SGt) The River Basin Management Plan (RBMP) for Scotland River Basin District 2015-2027 SGt interactive mapping https://map.environment.gov.scot/sewebmap/?layers=riverClass SEPA interactive mapping facility for the Scotland RBMP https://www.sepa.org.uk/data-visualisation/water-environment-hub/?riverbasindistrict=Scotland Water Classification Hub https://www.sepa.org.uk/data-visualisation/water-classification-hub/ SEPA data request: information on river water quality	RBMP and water quality
SEPA data request: information on locations of Controlled Activities Regulations (CAR) licences Private Water Supplies (PWSs) data request directly to ABC SGt Maps of the Drinking Water Protected Areas (DWPAs, Scotland) http://www.scotland.gov.uk/Topics/Environment/Water/17670/ProtectedAreasMaps2013	Abstractions and discharges
NatureScot information on protected areas https://sitelink.nature.scot/ Ecology surveys - as per Chapter 11: Ecology	Wetlands and peatlands

14.2.2. Current Baseline

Study Area

Desk study data for this chapter have been gathered with respect to a defined Study Area. The Study Area is focussed on the Site and a 2 km buffer area immediately beyond the Site.

Current Baseline

The Proposed Development site is dominated by commercial forestry plantation with Deucheran Hill (330 m Above Ordnance Datum (AOD)) and the area immediately south representing the topographical high points (336 m AOD) within the Site.

The Proposed Development lies within the Carradale Water and Barr Water catchments. The Carradale Water discharges into the Kilbrannan Sound at Carradale 5 km to the southeast. The Carradale Water (ID: 10241) Water Framework Directive (WFD) surface waterbody is classified under SEPA's RBMP (SEPA 2011) as of Good overall status. The Barr Water discharges from Loch Losgairn, located within the southwest of the Proposed Development, flowing south and southwest, ultimately discharging into the Irish Sea on the western Kintyre seaboard, at Dalkeith (NGR 166040 635750), approximately 11 km southwest of the Site. It is classified as of Good ecological potential. However, the waterbody has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on water storage for hydroelectricity generation.

The Carradale Water comprises of a number of minor tributary catchments which drain through the site boundary including the Drochaid Burn, Allt Deucheran and the Allt Buidhe. The site boundary includes both upland and lowland catchment reaches, with the former characterised by steeply descending valleys with high rates of discharge. In headwater reaches there are also several minor areas of flatter open moorland on catchment interfluvies. Some of these areas contain small lochans including Loch a Chromain and Loch Gosgann, which are both situated within the site boundary.

Channels within the Proposed Development are typical of forested catchments with channels often narrow and incised into the superficial geology with riparian corridors being generally forested. Channel bedloads are likely to include bedrock, sand and gravels, peat and vegetation but also contain woody material or log jams. Forestry drainage ditches / grips as well as channel engineering are also evident across the catchments.

According to the National River Flow Archive (NRFA) there is a hydrometric flow gauge on the River Carradale at Dippen (Station Ref. 88001; National Grid Reference [NGR] 176054 643758) situated ~5 km southeast of the site boundary. A review of the long-term flow archive for this gauging station (1995-2022) indicates a mean annual flow of 2.50 m³/s and a Q10 flow of 6.42 m³/s. Flow is generally highest during the winter months of December and January with a marked reduction in flow during May and June.

Flow within the watercourses of the Proposed Development would be considered in more detail within the EIAR to ensure the appropriate design of drainage and watercourse crossings.

The area has an average annual rainfall of 1870 mm (1961 to 2023), as recorded at the Carradale gauging station at Dippen, approximately 5 km southeast of the Site.

A review of the Scottish Government website indicates the Proposed Development is located within a Drinking Water Protected Area (DWPA) (surface water). DWPA are protected under Article 7 of the Water Framework Directive. Formal consultation will be carried out with Scottish Water through Scoping to confirm the details of the DWPA and prior to EIAR submission to agree measures to safeguard the DWPA.

There are no properties situated within the Site boundary, however there are several situated within the immediate vicinity in downgradient areas. It's possible that given the nature of the surrounding land use and rural location of the Proposed Development that these properties could be served by a Private Water Supply (PWS), with abstractions potentially within, or fed by, land within the Proposed Development. Further consultation with ABC will be required to confirm if any of these properties utilise a PWS. If required, further consultation with PWS Users will be undertaken.

Flood information provided by SEPA¹²⁶ indicates that the lowland reach of the Carradale Burn, at the eastern boundary of the Proposed Development is at risk of fluvial flooding, with riparian areas and the valley basin illustrating areas of High (10% annual exceedance probability [AEP]) and Medium (0.5% AEP) risk. Areas of High and Medium risk are also indicated along the Deucheran Burn. There are also isolated pockets of pluvial (surface water) flooding that are at High and Medium risk. These are constrained to small hollows on flatter areas in the upper watershed areas.

Off-site and downstream, there are areas of fluvial flood risk of High (10% AEP) and Medium (0.5% AEP) likelihood within riparian / flooding areas adjacent to the Carradale Water around the village of Carradale.

An assessment of flood risk will be undertaken as part of the planning application and would consider all types of flooding. The assessment will be carried out in accordance with NPF4.

According to the BGS bedrock geology map¹²⁷, the Proposed Development is underlain by the Beinn Bheula Schist Formation, which is part of the Dalradian Supergroup. The formation is characterised by highly metamorphosed steeply dipping gritty psammite and pelite beds intruded by occasional Tertiary tholeiitic dolerite dykes striking east west associated with the Arran volcanic complex. Several minor structural features (faults) are mapped within the Proposed Development boundary striking northeast – southwest, east - west or northwest – southwest. Nearby borehole records also made available by the BGS at Torrisdale confirm the presence of steeply dipping psammite bedrock.

Superficial deposits are indicated as absent from large swathes of the Proposed Development. Till, Devensian (diamicton) deposits are indicated along the valley of the Allt Deucheran in the south of the proposed Development

¹²⁶ Available from: [Flood Risk Management Maps \(sepa.org.uk\)](https://sepa.org.uk/flood-risk-management-maps)

¹²⁷ Available from: [BGS Geology Viewer \(BETA\)](https://beta.bgs.ac.uk/geology-viewer)

and at lower elevations to the east of the proposed Development along to flood plain of the Carradale Water. Alluvial deposits comprising clay, silt, sand and gravel are also mapped to the east of the Site along the Carradale Water valley floor.

Soil coverage of the Proposed Development is entirely that of peaty gleys with dystrophic semi-confined peat. These comprise drifts derived from arenaceous schists and strongly metamorphosed argillaceous schists of the Dalradian Series.

Phase 1 peat probing has indicated that the Proposed Development is largely underlain by shallow peat depths, with approximately 90% of the probe points recorded a depth of <1 m. However, a number of pockets of deeper peat (>1 m) are present, in the north, west, near the centre and in the southwest of the Site. It is also noted that some significantly deep peat deposits exist within the Proposed Development with the maximum peat depth recorded of 6 m, near the centre of the Site (E176054 N643758) in the area of the existing Deucheran Wind Farm turbines.

The Beinn Bheula Schist Formation underlying the Proposed Development is classified as a low productivity aquifer where small amounts of groundwater may be present in the near surface weathered zone and in secondary fractures.

The Oban and Kintyre (ID: 150698), WFD groundwater body associated with the area's bedrock formation is classified as having Good overall status¹²⁸.

Superficial deposits are largely absent across the Proposed Development and therefore do not comprise a significant aquifer. Furthermore, the till deposits mapped along the Allt Deucheran are comprised of till and therefore likely to be of limited permeability. Further downstream of the Proposed Development, along the valley of the Carradale Water, the Carradale Sand and Gravel WFD waterbody (ID: 150714) is also classified as of Good overall status.

Torrisdale Cliff Site of Special Scientific Interest (SSSI) is situated ~3.5 km south of Carradale and ~8 km south of the Proposed Development. The SSSI is designated on account of its importance as a coastal remnant of ancient semi-natural woodland consisting of base-rich relict sea cliffs and loose rock slopes supporting upland mixed ash woodland which is rarely found in Kintyre. The position of Torrisdale Cliff means it is not hydrologically connected to the Proposed Development.

Given the presence of peaty gleys within the Proposed Development, there is a high likelihood that groundwater dependent terrestrial ecosystems (GWDTes) are also present. These would be identified by ecology surveys undertaken as part of the EIAR. Further assessment will be undertaken to define the groundwater dependence of these habitats in the Hydrology, Hydrogeology, Geology and Peat chapter, so that the wind farm design takes account of the locations of the most sensitive habitats and either avoids them or prescribes suitable mitigation.

Future Baseline

Given the nature of the terrain and distance from any major urban areas, any future land use change from its current rural nature, with commercial forestry prevalent in the area, is unlikely over the lifespan of the Proposed Development. There are no land use allocations in the ABC Local Development Plan that would suggest major changes in land uses are likely which could affect matters assessed in this chapter. The potential impacts of other developments upon hydrology, hydrogeology, geology and peat would be considered in a cumulative assessment.

The conditions at the Site in the absence of the Proposed Development would be affected by the likely influence of climate change in the future, which could affect the amount and intensity of rainfall, and temperature and evapotranspiration. The UK Climate Projections 2018 (UKCP18)¹²⁹ produced by the Meteorological Office Hadley Centre provide information regarding the potential future climate in Scotland. Representative Concentration Pathway (RCP) 8.5 reflects a high emissions scenario and is considered a possible, but conservative, emission scenario suitable for evaluating the climate resilience of long-lifetime projects. The central estimate (50th percentile) under the RCP8.5 scenario predicts an increase in annual mean temperature of 1.5°C by the end of the 2050s. The RCP8.5

¹²⁸ Available from - [Water Classification Hub \(sepa.org.uk\)](https://www.sepa.org.uk/water-classification-hub) [Accessed 19/08/2024]

¹²⁹ Available from - [UK Climate Projections \(UKCP\) - Met Office](https://www.metoffice.gov.uk/research/ukcp18) [Accessed 19/08/2024]

scenario also has a central estimate of an 8% decrease in summer precipitation, with an increase of 12% in winter precipitation, by the end of the 2050s. This could change the hydrological characteristics of the Site and wider catchment areas over time.

14.3. Methodology

Planning Policy Context

As discussed in Chapter 9: Legal and Planning Policy, the Scottish Ministers adopted and published NPF4 on 13 February 2023. It contains policies with relevance to this hydrology, hydrogeology, geology and peat assessment, including Policy 22 (sustainable drainage systems; SUDS), and provides support for renewable technologies, such as wind farms via Policy 11.

Also as discussed in Chapter 9, national planning policy is supported by Planning Circulars, PANs and Specific Advice Sheets (SASs), and by Ministerial / Chief Planning Letters to Planning Authorities, which set out detailed advice from the Scottish Government in relation to planning issues. The PANs and SASs considered relevant to this chapter include PAN 61 Sustainable Urban Drainage Systems (July 2011) and PAN 79 (Water and Drainage, September 2006).

As mentioned in Chapter 9, a number of policies relevant to hydrology, hydrogeology, geology and peat are also found within the ABC LDP. These include the following:

- Policy 30: The Sustainable Growth of Renewables;
- Policy 31: Minerals;
- Policy 55: Flooding;
- Policy 57: Risk Appraisals (including flood risk assessment);
- Policy 59: Water Quality and the Environment;
- Policy 61: Sustainable Urban Drainage Systems (SUDS);
- Policy 73: Development Impact on Habitats, Species and Biodiversity; and,
- Policy 79: Protection of Soil and Peat Resources

Approach

The generic project-wide approach to the assessment methodology is set out in Chapter 4: Approach to the EIA. This section describes how this methodology would be applied, and adapted as appropriate, to address the specific needs of the hydrology, hydrogeology, geology and peat assessment.

The EIA Report chapter would summarise the findings of the desk study and consultation, these together forming the baseline against which the potential impact of the Proposed Development, alone and cumulatively with other wind farm developments, would be assessed.

The significance of the effects resulting from the Proposed Development would be primarily determined by the value of a given water feature and the magnitude of change. In terms of the hydrology and hydrogeology, the key types of effects would relate to water quantity (level and flow) and quality. However, depending on the effects on surface water flows, there may also be effects on immediate and downstream morphology and sediment dynamics and flood risk.

In the assessment all mitigation considered necessary would be identified and residual effects with this mitigation in place would be determined. It is intended that no residual significant effects would remain following adoption of the proposed mitigation, but whether this is achievable would be investigated as part of the EIA process.

Potential Receptors

From consideration of the baseline and the Proposed Development, receptors that could be significantly affected and that therefore need to be taken forward for further consideration in the EIA comprise the following:

- Groundwater within bedrock and the associated Oban and Kintyre WFD groundwater body;
- Watercourses and the associated Carradale Water and Barr Water WFD surface water bodies, including Drochaid Burn, Allt Deucheran and the Allt Buidhe;
- Nearby abstractions, springs and water resource use, including PWS;
- Water conditions supporting GWDTEs; and
- Peat soils.

Those receptors that have the potential to be significantly affected by the Proposed Development would be assessed in the EIAR on the basis of their value / sensitivity and the magnitude of change to which they would be exposed to. In terms of the receptors 'scoped out' from further assessment, these would be confirmed but are likely to include the following:

- Depending on the findings of the Phase 1 and Phase 2 surveys, the EIAR may need to be supported by a Peat Management Plan (PMP) and/or a Peat Landslide Hazard Risk Assessment (PLHRA). The requirement for these would be discussed with ABC and SEPA prior to the submission of the EIAR. Also, depending on the findings of Phase 1 and Phase 2 surveys, the requirement for a Carbon Balance Assessment and consideration of climate change is discussed in Section 19 of this scoping report.
- If it is identified that no PWS are located within a 250 m buffer of Proposed Development infrastructure, there will be no requirement for a separate detailed risk assessment for PWS abstractions (in line with SEPA Land Use Planning System (LUPS) SEPA Guidance Notes 4 and 31). Furthermore, if only a very limited number of PWS are identified, a risk assessment of the PWS will be incorporated into the hydrology chapter of the EIAR.
- Based on a review of SEPA Flood Maps, it is noted that flood risk is generally constrained to riparian corridors and highly unlikely to be increased as a result of the Proposed Development. It is expected the assessment of flood risk would form part of the EIAR chapter without the need for separate reporting. This would include a conceptual description of SuDS measures to be employed to ensure runoff rates from the Site are not increased. However, if assets are found to be at significant flood risk, or, should the Proposed Development be found to have a potential impact on flood risk in the surrounding area, a detailed Flood Risk Assessment would be prepared.
- Torrisdale Cliff SSSI which is not in hydrological connectivity with the Proposed Development.

14.4. Potential Impacts

The potentially significant geological, hydrological and hydrogeological effects that would be taken forward for assessment are summarised in Table 14.2.

Table 14.2: Likely Significant Hydrology, Hydrogeology, Geological and Peat Effects

Activity	Effects	Receptors
Land preparation (earthworks and excavation of the turbine foundations and any borrow pits)	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Excavation and fill leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Dewatering interception of groundwater leading to a loss of water resource and disruption of groundwater support (baseflow) to watercourses. Erosion of peat / carbon rich soil including localised drying of the peat and resultant oxidation.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites, including GWDTEs. Peat soils.
Soil compaction and temporary hardstanding	Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Reduced infiltration capacity results in increased runoff and flood risk, and reduced recharge to groundwater, leading to loss of water resource and disruption of baseflow to watercourses. Ground disturbance and destruction of geological (including peat) structures.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites, including GWDTEs. Peat soils.
Land clearance and deforestation	Land clearance and ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Land clearance leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Land clearance leads to breakdown of peat structure and disturbance of peat hydrology.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites, including GWDTEs. Peat soils.
Material stockpiling / removal (quarrying)	Ground disturbance leads to sediment loading and pollution of watercourses.	Groundwater within bedrock and associated WFD groundwater body.

Activity	Effects	Receptors
	Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Excavation and fill leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Dewatering interception of groundwater leading to a loss of water resource and disruption of groundwater support (baseflow) to watercourses.	Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSSs. Water conditions supporting conservation sites, including GWDTEs. Peat soils.
Watercourse crossings	Bank and bed disturbance leads to sediment loading, changes in morphology and pollution of watercourses. Contamination of watercourses due to accidental release of pollutants during works.	Watercourses and associated WFD surface waterbodies. Abstractions, springs, ponds and water resource use, including PWSSs. Water conditions supporting conservation sites, including GWDTEs.
Track and crane pad placement	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Track and crane pad placement leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Ground disturbance and destruction of geological (including peat) structures.	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface water bodies Abstractions, springs, ponds and water resource use, including PWSSs. Water conditions supporting conservation sites, including GWDTEs. Peat soils.
Control building and potential substation placement	Ground disturbance leads to sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during works. Control building and potential substation placement leads to disruption of surface and near-surface flow paths and changes to the drainage regime, most typically increased runoff and flood risk. Excavation leads to breakdown of peat structure and disturbance of peat hydrology	Groundwater within bedrock and associated WFD groundwater body. Watercourses and associated WFD surface water bodies. Abstractions, springs, ponds and water resource use, including PWSSs. Water conditions supporting conservation sites, including GWDTEs. Peat soils.

Activity	Effects	Receptors
Operational facilities and activities	Exposed ground leads to continued sediment loading and pollution of watercourses. Contamination of soils, surface waters and groundwater due to accidental release of pollutants during maintenance activities. Contamination of soils, surface waters and groundwater due to control building and substation chemical leaks and concrete leaching. Continuation of flow disruption, reduced infiltration capacity and peat disruption effects.	Groundwater within bedrock and associated WFD groundwater bodies. Watercourses and associated WFD surface water bodies. Abstractions, springs, ponds and water resource use, including PWSs. Water conditions supporting conservation sites, including GWDTes.

Source: Natural Power

The main potential hydrological, hydrogeological, geological and peat impacts associated with the Proposed Development relate to the construction phase, in particular from tracks and watercourse crossings. The EIAR would identify the location and the nature of the impact from construction and upgrading activities, in particular the potential for the generation of silt-laden runoff. It would then prescribe measures to be adopted during construction to mitigate against negative impacts on the water environment.

Other activities of relevance include the construction of wind turbine foundations and crane pads, the control building and the potential substation. The impacts from these activities, such as the leaching of concrete residues to the water environment and changes in the runoff / recharge characteristics, would also be addressed in the EIAR. Again, mitigation measures would be outlined that would reduce negative impacts.

The possibility for borrow pits and stockpiling would be explored and, should the Site be suitable for these elements, the impacts upon the water environment would also be assessed.

Impacts during decommissioning would likely be similar to those during the construction phase but would depend on the exact nature of the decommissioning activities that take place. However, it is likely that the ground disturbance would be much less. Mitigation similar to that implemented during the construction and operational phases (updated to reflect changes in legislation / guidance) would also help ensure that the significance of such impacts is minimised, and it is therefore currently proposed that consideration of decommissioning effects is scoped out of the EIAR.

14.5. Cumulative Effects

Cumulative effects on hydrology and hydrogeology from the construction and operation of the Proposed Development and its relation to other, nearby wind farm and large-scale development (existing, consented but not yet built and proposed (at application stage)) would also be considered in detail within the EIAR. This assessment would typically be based on a zone of influence extending 10 km beyond the Proposed Development.

The potential cumulative effects from the Proposed Development identified by other environmental disciplines would also be considered if such identified cumulative effects could potentially impact hydrology and hydrogeology.

Monitoring and further mitigation would be recommended as appropriate to reduce cumulative impacts to an acceptable level.

14.6. Mitigation

In the assessment of effects account would be taken of 'embedded' mitigation measures i.e., those mitigation measures that are inherent to the Proposed Development. These measures include all mitigation usually assumed

to be in place during construction and operation and that are generally regarded as industry standard or Best Practice. With respect to hydrology, hydrogeology, geology and peat these include, but are not limited to, the following:

- Avoidance of steep gradients, deep peat and flood zones when establishing the footprint of the Proposed Development;
- Application of a 50 m buffer zone applied to the entire OS watercourse network;
- Application 100 m and 250 m SEPA (Land Use Planning System Guidance Notes 31, LUPS-GU31) buffers around abstractions, PWSs and GWDTEs;
- Use of micro-siting if unforeseen ground conditions are encountered;
- Adherence to the conditions of the required Construction Site Licence (CSL), including adoption of a Pollution Prevention Plan (PPP);
- Adoption of sensitive track and drainage design, including 'floating' roads on areas of deeper peat, with all drainage measures set out in a Water Management Plan (WMP) that would accompany a CEMP;
- Adherence to Best Practice guidance and Controlled Activities Regulation (CAR) authorisation with respect to watercourse crossings, with designs capable of conveying a 1 in 200 year return period flood event with an allowance for climate change;
- Deeper excavations would be designed so that they can freely drain by gravity where possible and incorporate perimeter cut-off drains. Any required dewatering and associated discharge would be undertaken in accordance with Best Practice and the CEMP, and abstractions greater than 10 m³/d would require CAR Registration, while over 50 m³/d would require a CAR licence;
- Measures based on Best Practice guidelines from SEPA would be adopted during construction to prevent pollution, with all contractors aware of a pre-planned pollution incident response procedure (PIRP). Ground investigation would be undertaken at all borrow pit search locations to determine the presence and extent of any shallow soil contaminants;
- Fuel would be stored in a suitably sized bunded area or self-bunded above-ground storage tank (AST), and maintenance and refuelling of machinery would be undertaken offsite or within designated areas of temporary hardstanding; and
- A CEMP would be produced prior to the commencement of construction activities that would follow Best Practice guidance, as well as incorporating specific recommendations made in the EIAR. No works would be undertaken unless agreed in the CEMP.

14.7. Consultation

It has been identified that the main organisations that might hold views regarding the potential hydrology, hydrogeology, geology and peat effects of the Proposed Development include SEPA, Marine Scotland Science (MSS), ABC, Scottish Water and NatureScot.

Upon the completion and submission of the EIAR, views and feedback would be sought from not just these organisations but all relevant parties and organisations. All consultation would be appreciated in order to ensure that the potential hydrology, hydrogeology, geology and peat effects of the Proposed Development are properly considered, and appropriate mitigation identified.

14.8. Scoping Questions for Consultees

The following are questions for consultees:

- **Question 23:** Do consultees agree with the proposed scope of the Hydrology, Hydrogeology, Geology and Peat assessment as summarised in Section 14.3?
- **Question 24:** Are consultees aware of any PWS within the Site boundary or within 2 km of it?
- **Question 25:** Do consultees accept the integration of a Flood Risk Assessment within the Hydrology, Hydrogeology, Geology and Peat EIA chapter?
- **Question 26:** Are there any developments or infrastructure schemes which should be taken into account when considering potential cumulative impacts?

15. Noise

15.1. Introduction

This section of the scoping report summarises the proposed scope for the noise assessment for the Proposed Development. The chapter has been prepared by Ion Acoustics Ltd for the Applicant.

Wind farms are often situated in rural environments where background noise levels are low. Therefore, at residential distances wind turbine sound can be audible and noise limits are recommended to protect amenity and prevent sleep disturbance.

The sound from wind turbines rises quickly from the cut-in wind speeds and then remains at the same level from close to the rated power to the cut-out speed. The background noise, such as that from wind blowing through trees and vegetation, is typically low at low wind speeds and increases steadily with wind speed. Background noise at high wind speeds can mask the sound from wind turbines. Appropriate noise limits can be derived using ETSU-R-97 and the Institute of Acoustics' Good Practice Guide (IoA GPG). These limits are based on a fixed value and a set margin above the background noise level for daytime and night-time periods.

The proposed BESS can also be a source of noise, including electrical noise from transformers and inverters and noise from any associated cooling system. Again, there are various technologies available to control such noise to appropriate limits.

There will also be a short-term noise impact from the construction of the wind turbines, BESS and associated access tracks and borrow pits etc. Noise will be generated from traffic movements associated with the delivery of construction materials and turbine components. However, construction works will generally be carried out during daytime hours and only for a short period.

15.2. Legislation, Policy and Guidance

15.2.1. Argyll & Bute Guidance

The Council's Environmental Health Department have been contacted about the Proposed Development and Ion Acoustics have spoken to Jackie Middleton who is an EHO with the Council. The Council do not have a specific noise guidance regarding the setting of limits etc. Jackie stated she was not aware of any complaints from the existing wind farm.

Policy LP Ren 1 states the following:

"The council is committed to support wind farm developments in forms, scales and sites where the technology can operate efficiently, where existing and approved grid capacity can be maximised, and where direct, indirect and

cumulative environmental impacts can be satisfactorily addressed. These will include impacts on landscapes and the historic environment; ecology (including birds), biodiversity and nature conservation; the water environment, communities; aviation; telecommunications; noise; and shadow flicker.”

15.2.2. Scottish Government Advice

Online Scottish Government planning guidance for renewable energy schemes is available on the website¹³⁰. In respect the noise, the guidance refers to ETSU-R-97 and the Institute of Acoustics Good Practice Guide as well as online technical guidance on noise impact assessment¹³¹.

15.2.3. ETSU-R-97

The assessment methodology for operational noise is described in ETSU-R-97 ‘The Assessment and Rating of Noise from Windfarms’¹³². The basic aim of ETSU-R-97 is to provide:

“Indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding unduly to the costs and administrative burdens on wind farm developers or local authorities”.

The ETSU limits are set in terms of the L_{A90} noise parameter. This is defined as the noise level exceeded for 90% of the measurement time. It is taken to represent the ‘background noise’, that is the underlying noise level in the absence of short-term events. This unit was chosen to assess turbine noise, which is fairly steady, because extraneous short-term events such as discrete car passes, and aircraft do not usually affect the L_{A90} value. For wind turbine noise, the L_{A90} is typically 2 dB less than the L_{Aeq} parameter. The L_{Aeq} is defined as the equivalent steady-state noise level with the same energy as the fluctuating noise level over a time period.

The ETSU report provides a method for assessing wind turbine noise and in particular, the setting of external noise limits which are either:

- relative to the background noise (L_{A90} dB); or
- fixed at an absolute limit when background noise levels are otherwise very low.

The background noise depends on the wind speed. The “fixed” part of the ETSU limit usually applies at low wind speeds. At high wind speeds, noise from wind in the trees and flowing over local features such as roofs can be considerable and is often sufficient to mask the sound of wind turbines. Therefore, it is often at lower wind speeds that the turbines could be audible.

The ETSU-R-97 limits are set relative to the prevailing background noise. The prevailing background is derived separately for ‘amenity hours’ daytime periods and for the night-time periods, defined as 11pm to 7am. The amenity hours daytime periods are chosen to reflect periods when people might be outside in their gardens and are defined as:

- All evenings from 6pm to 11pm;
- Saturday afternoons from 1pm to 11pm; and
- All day Sunday (7am to 11pm).

130 The Scottish Government (2014) Onshore Wind Turbines: Planning Advice. Available from - <https://www.gov.scot/publications/onshore-wind-turbines-planning-advice/> [Accessed 19/08/2024].

131 The Scottish Government (2011) Assessment of Noise: Technical Advice Note Available from - <https://www.gov.scot/publications/technical-advice-note-assessment-noise/pages/2/> [Accessed 19/08/2024].

132 UK Department of Trade & Industry (1996) Report ETSU-R-97 ‘The Assessment and Rating of Noise from Windfarms’ Available from - https://assets.publishing.service.gov.uk/media/5a798b42ed915d07d35b655a/ETSU_Full_copy_Searchable_.pdf [Accessed 19/08/2024].

For the daytime (which applies from 07.00 to 23.00 hours), the suggested noise limits are 35 to 40 dB L_{A90} or 5 dB above the prevailing amenity hours daytime background, whichever is the greater. A degree of judgment is required in determining the fixed limit within the 35 to 40 dB L_{A90} range and ETSU-R-97 states that this will depend on:

- The number of dwellings in the neighbourhood of the wind farm;
- The effect of noise limits on the number of kWh generated; and
- The duration and level of exposure.

For night-time periods, the ETSU noise limit is 43 dB L_{A90} or 5 dB above the background, whichever is the greater. The 43 dB L_{A90} limit was derived from a sleep disturbance limit of 35 dB L_{Aeq} (internally) with an allowance of 10 dB for the attenuation of an open window to derive the corresponding external noise level and with 2 dB subtracted to account for the use of the L_{A90} noise index rather than the L_{Aeq} .

For remote sites a long way from residential properties, ETSU-R-97 reports the opinion of the noise working group that:

“if the noise is limited to an $L_{A90, 10min}$ of 35 dB(A) up to wind speeds of 10 m/s at 10 m height, then this condition alone would offer sufficient protection of amenity and background noise surveys would be unnecessary”.

This limit can be achieved by existing Deucheran Hill turbines and as such there was no noise survey carried out in respect of the original Environmental Impact Assessment.

However, if a survey is carried out for the Proposed Development, ETSU-R-97 noise limits derived from the background noise in relation to the measured wind speed can apply.

ETSU-R-97 allows for a higher limit where the residents are ‘financially involved’ with the wind turbine development. The suggested limit is 45 dB L_{A90} , or 5 dB above the background noise, whichever is the greater, for both the day-time and night-time periods.

Where audible tones are present in the noise spectrum, ETSU-R-97 stipulates that a tonal penalty of up to 5 dB be added to the turbine noise levels. The magnitude of the tonal penalty depends on the audibility of the tone.

15.2.4. Institute of Acoustics Good Practice Guide

In May 2013, the Institute of Acoustics (IoA) published the ‘Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise’¹³³. The document was prepared with the purpose of agreeing current good practice in the application of the ETSU-R-97 methodology and predicted turbine noise levels (which was not addressed in ETSU-R-97). The document was prepared by a specialist working group and reviewed by a peer group of professionals working in a variety of relevant disciplines. A discussion of ETSU-R-97 noise limits was excluded from the remit of the working group as these are a matter of UK Government policy.

The Scottish Government has formally endorsed the IoA Good Practice Guide (GPG) and accepts that the guide represents current industry good practice. Since May 2013, a number of supplementary guidance notes have also been published providing further detail. The IoA GPG and the supplementary guidance notes should be regarded as a refinement of the ETSU-R-97 guidance to ensure consistency and the noise assessment will follow the guidelines stated therein.

The GPG provides general advice on noise monitoring and data processing for noise surveys. It also clarifies a number of issues including the following:

- The background noise survey should be of sufficient duration that no fewer than 200 valid data points are obtained for each of the amenity hours and night-time periods with no fewer than five valid points in any 1 m/s wind speed bin.

¹³³ Institute of Acoustics (2013) A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise. Available from - <https://www.ioa.org.uk/publications/wind-turbine-noise> [Accessed 19/08/2024].

- The background noise measurements (and thereby noise limits) should preferably be corrected for wind shear by correlating the background noise measurements with the standardised wind speed at 10 m height. The standardised wind speed is defined as the wind speed at 10 m height which is derived from the hub height wind speed using a standard equation.
- That ISO 9613-2 is to be used for wind turbine noise predictions, with certain stipulations and limitations as follows:
 - The turbine sound power levels should be stated, and information provided on whether these are measured levels, measured levels with an allowance for measurement uncertainty, warranted levels or generic levels;
 - Downwind propagation should normally be considered to represent the worst case;
 - The atmospheric conditions assumed should be stated, with 10°C and 70 per cent Relative Humidity preferred;
 - The ground factor assumed should be either (i) $G = 0$ (hard ground), together with measured sound power levels; or (ii) $G = 0.5$ (mixed ground); together with a receiver height of 4.0 m and either manufacturer's warranted sound power levels or measured sound power levels plus an allowance for measurement uncertainty;
 - Barrier attenuation (where applicable) should be limited to 2 dB; and
 - The predicted noise levels ($L_{Aeq,t}$) may be converted to the required $L_{A90,10min}$ by subtracting 2 decibels (dB).
- Consideration of cumulative noise issues including:
 - How noise impacts from existing and consented wind farm schemes must be assessed; and
 - The use of directivity corrections for specific situations so that the effect of wind direction on noise propagation can be accounted for. This is important in respect of cumulative noise level as some receptor location which cannot be downwind of all turbines at the same time.

15.2.5. Existing Planning Permission

Planning Condition No.33 for the existing Deucheran Hill Wind Farm states the following:

“The noise level rating over one hour as defined in BS 7445: 1991 emanating from the site shall not exceed the background noise level by more than 5 dB at the nearest noise sensitive property. The background noise level shall be pre-determined on site by the Planning Authority, in consultation with the Head of Public Protection, prior to the wind farm hereby approved coming into operation.”

This condition is rather unusual and does not follow ETSU-R-97 guidance. It is not known whether the background noise level was pre-determined on site.”

15.3. Methodology

To carry out a noise assessment in accordance with ETSU-R-97 and the IoA Good Practice Guide, the following steps are required:

- Specify the number and locations of the wind turbines;
- Identify the locations of the nearest, or most noise sensitive, receptors;
- Determine the background noise levels from measurements as a function of site wind speed at the nearest properties, or at least at a representative sample of the nearest properties. As there has not been a previous survey, a new survey can be carried out in accordance of Section 5 of the IOA GPG. To ensure that the existing wind farm is not included in the derivation of the prevailing background noise, the analysis of the data can include measures such as, but not limited to, filtering background noise data for wind direction, the existing turbines

being switched off for some of the time, the predicted noise level from the existing wind farm subtracted, and/or utilising proxy locations;

- Determine the quiet day time and night-time noise limits from the background noise levels identified at the nearest properties in consultation with the local authority and following ETSU-R-97 guidance;
- Calculate the noise levels owing to the operation of the wind turbines as a function of site wind speed at the nearest properties;
- Compare the calculated noise emission levels with the derived ETSU-R-97 noise limits and assess in the light of relevant planning requirements;
- Identify potential mitigation measures including changes to layout, turbine type and the use of low noise modes as required; and
- Identify any cumulative noise impacts associated with other existing, consented and proposed schemes for which a planning application has been submitted and where details are known, and if necessary, reconsider mitigation.

15.3.1. Baseline Noise Survey

It appears that a baseline noise survey has not been previously undertaken for the existing site. The existing scheme can meet a flat ETSU-R-97 35 dB L_{A90} limit and therefore a survey would not have been necessary in respect of ETSU-R-97 guidance. As the Proposed Development now considers a wider site area it is likely noise survey will be required at two properties to the south-west of the scheme in the Carradale Water valley. Specifically, the two properties are:

- Auchnabreac which is used as a holiday home; and
- Auchenfraoch – a farm stead.

It is proposed to monitor noise levels at these properties for a minimum period of 4 weeks. The existing wind farm will need to be shut down during this period – it is proposed to do this during the ETSU-R-97 evening period only from 6pm to 11pm.

These two properties are shown in Figure 15.1 in relation to the 35 dB L_{A90} contour for a candidate turbine with a sound power of 108 dB L_{WA} . All other properties considered are likely to have noise levels below 35 dB L_{A90} .

Source: OS Open data

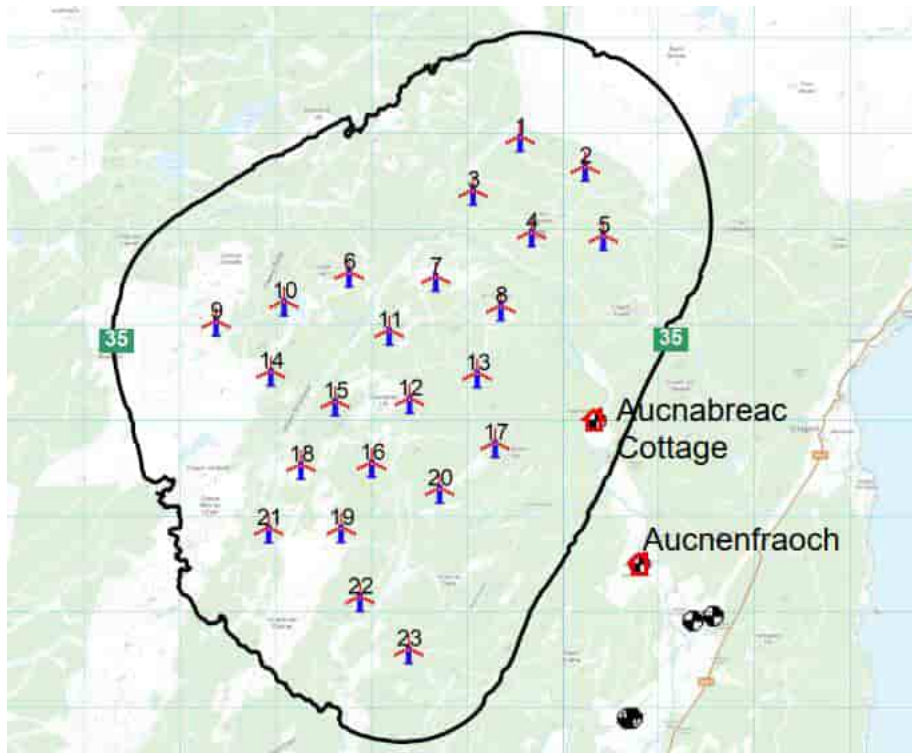


Figure 15.1: Noise contour map showing 35 dB LA90 contour using a candidate turbine with a sound power of 108 dB LWA

15.3.2. Cumulative Assessment

ETSU-R-97 states that the noise limits that it recommends apply to the cumulative effect of noise from all wind turbines that may affect a location. Therefore, any wind energy developments, either operational, consented or in planning, which may require consideration in the assessment process will be identified. At present the following operational, consented or proposed schemes have been identified:

- Cour Wind Farm (Operational);
- High Constellation Wind Farm (Consented);
- Beinn an Tuirc Wind Farm (Operational);
- Clachaig Glen Wind Farm (in Planning); and
- Arnicle Wind Farm (Scoping).

Following to decision by the Scottish Government to refuse Narachan Wind Farm, this scheme will not be considered in the cumulative assessment. Other schemes on Kintyre are considered to be too far away to affect the Proposed Development as per Section 5.1 of the IOA GPG.

15.4. Other Operational Noise Issues

15.4.1. Low frequency noise, Infrasound and Vibration

Infrasound typically refers to noise which is below the audible frequency range of human hearing (typically less than 20Hz), whereas low frequency noise typically refers to low frequency (20 to 200 Hz) noise in the audible spectrum.

Various national and international studies have not found any health effects associated with low frequency noise or infrasound.

Measured vibration levels are far below the thresholds for human perception even on the wind farm sites.

It is therefore not considered necessary to carry out specific assessments of low frequency noise, infrasound, or perceptible vibration and these issues will be scoped out of the operational noise assessment.

15.4.2. Amplitude Modulation

The EIAR noise chapter will summarise the current situation regarding AM.

15.5. Construction Noise

The following legislation and standards are of particular relevance to construction noise:

- The Control of Pollution Act 1974 (CoPA 1974); and
- BS 5228: 2009+A1:2014 (Parts 1 & 2) Code of Practice for Noise and Vibration Control on Construction and Open Sites.

CoPA 1974 provides local authorities in Scotland, England and Wales with powers to control noise and vibration from construction sites. Section 60 of the Act enables a Local Authority to serve a notice to a contractor of its requirements for the control of site noise. Section 61 of the Act allows for those carrying out construction work to apply to the Local Authority in advance for consent to carry out the works.

Construction noise can be assessed using British Standard BS 5228 parts 1 and 2 which provides a calculation method and general guidance on controlling noise and vibration from construction sites. This standard:

- Refers to the need for the protection against noise and vibration of persons living and working in the vicinity of and those working on construction sites;
- Recommends procedures for noise and vibration control in respect of construction operations; and
- Stresses the importance of community relations, stating that early establishment and maintenance of these relations throughout the site operations will go some way towards allaying people's fears.

There are no noise limits within the main text of BS 5228 and in fact, the preferred approach is to use best practicable means to reduce noise rather than setting limits. This means that everything practicable should be done to reduce noise. This strategy will be adopted here.

However, Annex E of the BS 5228-1 gives *"example criteria for the assessment of the significance of noise effects"* e.g. for use in Environmental Statements. One of the approaches to assess for significant effects is to use the ABC method, which gives the following thresholds:

Table 15.1: Significance Thresholds for Construction Noise

Assessment Category and threshold value period	Threshold value, in decibels (dB) (LAeq,T)		
	Category A	Category B	Category C
Night-time (2300-0700)	45	50	55
Evening and weekends (1900-2300 weekdays; 1300-2300 Saturday; 0700-2300 Sundays)	55	60	65
Daytime (0700-1900) and Saturdays (0700-1300)	65	70	75

Category A threshold values to use is when the ambient noise level, when rounded to the nearest 5 dB, is less than Category A values. Category B threshold values to use is when the ambient noise level, when rounded to the nearest 5 dB, is equal to Category A values. Category C threshold values to use is when the ambient noise level, when rounded to the nearest 5 dB, is greater than Category A values.

Noise can also occur during construction from traffic on local roads include the transportation of construction materials and turbine components. Where traffic data is available the increase in noise due to construction traffic can be calculated according to the Government guidance *“The calculation of road traffic noise”* (CRTN).

The acceptability of construction noise is likely to be affected by the location of the site relative to the noise sensitive premises; existing ambient noise levels; the duration and working hours of site operations; the characteristics of the noise produced and the attitude of local residents to the site operator. Given that construction noise is generally not substantial and that it is a short-term effect, typically occurring in the daytime, it is not always necessary to consider construction noise within the scope of an Environmental Impact Assessment and it is proposed that a construction noise assessment is excluded from the EIAR. A Construction Environmental Management Plan will include measures to control noise using best practicable means.

15.6. Scoping Questions for Consultees

The following questions are directed to consultees:

- **Question 27:** Within the ETSU-R-97 guidance will the Council accept a limit of 35 to 40 dB L_{A90} or the background noise + 5dB (whichever is the greater) for the Proposed Development for the day-time for non-involved properties? A limit of 40 dB L_{A90} or the background noise + 5 dB for non-involved properties, or the applicable involved limit of 45 dB or +5 dB of the background for the day-time, would apply to cumulative noise impacts? The night-time limit of 43 dB or +5 dB for non-involved properties for the Proposed Development and cumulative noise? The night-time limit of 45 dB or +5 dB for **involved** properties for the Proposed Development and cumulative noise?
- **Question 28:** Is the proposed baseline noise survey methodology (Section 15.3.1) acceptable?
- **Question 29:** Is the scope of the cumulative assessment (Section 15.3.2) acceptable or are there any other schemes that should be considered?
- **Question 30:** Will construction noise need to be formally assessed with the EIAR noise chapter? Any noise issues can normally be controlled with limits on working hours. The CEMP will also include measures on how noise is minimised using best practicable means?

16. Traffic and Movement

16.1. Introduction

The objective of the Traffic and Movement assessment is to quantify the impact of the Proposed Development on the public road network, and to assess the significance of any effects resulting from this. The principal impact of the Proposed Development on the local road network will be an increase in traffic during the construction phase. This may result in a number of effects which are described in Section 16.5.

This assessment will be supplemented by an Abnormal Indivisible Load (AIL) Assessment for delivery of the wind turbine components and an Outline Traffic Management Plan (TMP).

16.2. Legislation and Guidance

Table 16.1 provides details of the key legislation, policy, and guidance which will be used during the preparation of the Traffic and Movement chapter of the EIAR.

Table 16.1 Legislation Policy and Guidance

Author	Title	Relevance
Institute of Environmental Management and Assessment (IEMA)	Environmental Assessment of Traffic and Movement (2023) Hereafter referred to as 'IEMA Guidelines'.	This is the principal guidance document which will be used to inform the assessment. This guidance provides a methodology for assessing the significance of the environmental effects of road traffic due to a development.
The Scottish Government	Planning Advice Note 75 (PAN 75) – Planning for Transport (2005)	This note provides advice on sustainable transport planning in the context of new and existing development.
Department for Transport (DfT)	Design Manual for Roads and Bridges	This guidance will be used to form the basis of the review of existing roads within the assessment.

The above list is not exhaustive and details only the key documents. Further guidance will be considered during the assessment as necessary.

16.3. Geographical Scope of Assessment

The geographical scope of the Traffic and Movement assessment will consider the links (public roads) which are likely to be impacted by construction traffic as a result of the Proposed Development.

The origin of each type of construction material is not likely to be known at the time of undertaking the assessment, therefore it is reasonable to limit the extent of the assessment to the nearest trunk road, which is most likely to be the A83. On this basis, it is proposed that the assessment will consider links between Tarbert on the A83 and the proposed site entrance.

The source of aggregates will be taken from on-site borrow pits.

Concrete will be prepared as on-site batching. It is assumed that sand will be imported.

The AIL assessment will consider the full AIL route from the port of delivery to the site entrance for the transportation of wind turbine components.

16.4. Proposed Surveys

Baseline traffic flow data will be established on each link from 1-week automatic traffic counts. These surveys will be undertaken during a neutral month (April, May, June, September or October) if possible, to provide a representative picture of traffic flows on each link.

Baseline traffic flow data will be factored from the year of collection to the year of construction using the National Road Traffic Forecast (NRTF) factors.

Baseline road traffic collision (RTC) data will be established from publicly available police report data. This data will be reviewed for RTCs which occurred on route(s) to site within the last five full years of data.

Baseline road geometry will be established from online mapping and Ordnance Survey Mastermap data where required. This data will be used to inform the assessment of the capacity and suitability of the road for anticipated construction traffic.

16.5. Potential Significant Effects of the Development

In accordance with the IEMA Guidance the following potential effects will be considered during the assessment:

- Severance of communities;
- Road vehicle driver and passenger delays;
- Non-motorised user delay;
- Non-motorised amenity;
- Fear and intimidation on and by road users;
- Road user and pedestrian safety; and
- Hazardous/large loads.

As described in the IEMA Guidance, the impact of traffic has linkages to other disciplines. Information established in the preparation of this chapter will be shared with other relevant disciplines to enable them to consider the impact of traffic.

16.6. Assessment Methodology

The assessment will follow the methodology outlined in the IEMA Guidance. Broadly this will take the steps outlined in the following paragraphs.

Baseline conditions within the study area will be established, including the following:

- Baseline traffic flows;
- RTC Assessments;
- Qualitative assessment of route(s) including identification of major junctions, crossing points and road width/classification; and
- Identification of sensitive receptions and assignment of sensitivity to route(s).

An estimate of the construction traffic expected for each construction activity will be established. This estimate will be developed by quantifying the number of vehicle deliveries for each activity during construction. This traffic will be distributed across the predicted construction programme to establish the peak increase in traffic.

As outlined in Paragraph 1.25 of the IEMA Guidance the volume of construction traffic which will be assessed will be reflective of the 'realistic worst-case' traffic and movement demand, refer to Section 16.7.1. Primary mitigation will be considered in determining the construction traffic volume, refer to Section 16.7.

A screening exercise will be undertaken in line with Section 2 of the IEMA Guidance. This will be used to evaluate which links should be considered for further assessment. Links will be taken forward where:

- Traffic is predicted to increase by more than 30%, or Heavy Goods Vehicles (HGVs) by more than 30%; or
- On high sensitivity routes where traffic is predicted to increase by more than 10% or HGVs by more than 10%.

For links which exceed the thresholds in Section 16.6.5 further assessment will be undertaken to establish the significance of the effect of each link.

Where links which have a risk of causing fear and intimidation are identified the methodology detailed in the 2023 IEMA Guidance for the assessment of fear and intimidation will be followed.

In accordance with the IEMA Guidance the thresholds in Section 16.6.5 will not be applied to the following potential effects:

- Noise;
- Road Safety; and
- Driver Delay.

An assessment of Noise will be undertaken in Chapter 15 of the EIAR and has therefore been scoped out of the Traffic and Movement Chapter.

Separate methods of assessment will be applied to Road Safety and Driver Delay as described in Section 16.6.15.

In relation to hazardous/large loads, turbine components and transformers would represent large loads. Turbine components and transformers are transported under controlled conditions following significant planning in consultation with Transport Scotland, Police Scotland and the local authority. Due to the control measures in place, it is considered that a 'catastrophe analysis' as described in Paragraph 3.50 of the IEMA Guidance is not required.

A cumulative assessment will be undertaken which seeks to establish the possible traffic flow increase in the event of other developments which share the same links for construction whilst the Proposed Development is being constructed. Where possible, traffic data for the cumulative developments will be established from their respective EIARs or Transport Assessments.

Following the above steps, an assessment of the significance of predicted cumulative effects will be made. Where significant effects have been identified then mitigation measures in relation to those effects will be proposed.

Finally, once secondary mitigation measures have been considered an assessment of residual effects will be undertaken and a statement of overall significance made.

Alternative Assessment Methods – Road Safety and Driver Delay

For road safety, whilst the 2023 IEMA Guidance calls for use of a 'safe system' approach, it is beyond the scope of this assessment to undertake safety modelling of minor historical links for a temporary traffic increase. We therefore propose to continue with a 'collision cluster' approach as has historically been used.

The 'collision cluster' approach will identify any trends or 'clusters' in RTC data on the links and will make an assessment of the statistical probability of adverse effects on safety as a result of the Proposed Development. Additionally, engineering judgement will be used to assess the suitability of existing road geometry for HGVs and AILs and this will inform the assessed significance in relation to safety.

Driver delay on rural roads will primarily be affected by AILs. A review of the likely delay to drivers will be presented, however, no traffic modelling or simulation is proposed to be undertaken and the assessment will therefore not quantify junction delays.

16.7. Approach to Mitigation

Primary mitigation in the form of borrow pits and an on-site batching plant are being considered. Their inclusion would reduce the number of HGV movements required and would therefore represent the 'realistic-worst case' traffic.

Where significant effects are identified, secondary mitigation measures will be proposed within the EIAR to address these. Any secondary mitigation will then be carried forward within the TMP.

Tertiary mitigation are standard practises which are implemented by competent contractors to comply with good practice. These measures will be considered when assessing effects.

The Outline TMP is the principal mechanism by which all mitigation measures will be communicated to the contractor during the pre-construction phase of the Proposed Development. The contractor will then develop this Outline TMP into a construction phase TMP which will contain detailed mitigation measures.

16.8. Conclusion (What is Scoped in and out)

The assessment will consider the impact of increased traffic during the construction phase of the Proposed Development. Possible effects are listed in Section 16.5 above.

Due to the nature of a wind farm development where operational traffic is limited to a small number of Light Good Vehicles (LGVs) undertaking maintenance, and because future decommissioning activities are likely to generate smaller volumes of traffic compared to the construction phase, the assessment will focus on impacts during the construction phase of the Proposed Development only, excluding the operational and decommissioning phases from the assessment. It is currently proposed that the assessment will provide an expected 'realistic worst case' example of impacts and associated effects on local road network.

As discussed in Section 16.6.15, a 'safe systems' method for the assessment of road safety effects has been scoped out of this assessment. An alternative methodology ('collision clusters') will instead be used.

As discussed in Section 16.6.11, due to the control measures which will be implemented for the delivery of large loads a 'catastrophe analysis' has been scoped out of this assessment.

Traffic simulation, modelling, or qualitative analysis of the junction delay has been scoped out of this assessment as described above.

16.9. Scoping Questions to Consultees

The following questions are directed to consultees:

- **Question 31:** Do the consultees agree that the geographical scope of the assessment as defined in Section 16.3 is appropriate?
- **Question 32:** Do the consultees agree that the survey methodology as presented in Section 16.4 is appropriate?
- **Question 33:** Do the consultees agree that the IEMA (2023) Guidance and the associated methodology as outlined in Section 16.6 is the appropriate methodology to adopt for this assessment?
- **Question 34:** Do the consultees agree that it is appropriate to scope out noise assessment from the Traffic and Movement Chapter as presented in Section 16.6.8.
- **Question 35:** Do the consultees agree with the adoption of 'collision cluster' approach to the assessment of road safety as presented in Section 16.6.15?

- **Question 36:** Given the short duration of the construction phase, do the consultees agree that it is appropriate to scope out traffic simulation / modelling and junction delay analysis?
- **Question 37:** Do the consultees have any further comments or information which would be relevant to the assessment?

17. Socio-economics & Tourism

17.1. Introduction

BiGGAR Economics has been commissioned to undertake the socio-economics and tourism elements of the Proposed Development. Socio-economic and tourism assessment of onshore windfarms over the last decade have found no adverse effects assessed as significant in terms of the EIA regulations and there is no reason to expect significant effects for the Proposed Development. It is therefore proposed to scope socio-economics and tourism out of the EIA Report.

Nevertheless, it is recognised that socio-economic and tourism issues will be of interest to stakeholders and local authorities and so a separate report on socio-economics and tourism will be provided and submitted alongside the EIA. This section describes what will be considered in the separate socio-economic and tourism report and the approach that will be taken.

17.2. Study Areas

The study areas of the assessment will be selected to meet the interests of the key stakeholders and will be made of pre-defined administrative geographies. The Proposed Development Area boundary lies exclusively within the Argyll and Bute Council area.

The baseline assessment will include a description of the current socio-economic and tourism baseline within the local area. This will include a summary of the economic performance data and a description of the relevant tourism assets that will be covered in the assessment.

The baseline description will cover and compare the following study areas:

- Kintyre and the Islands (the electoral ward considered as the 'Local Area')
- Argyll and Bute; and
- Scotland

Economic impacts will be assessed for the study areas of:

- Argyll and Bute; and
- Scotland

Tourism and recreation receptors will be identified within 15 km of the Proposed Development Area boundary.

17.3. Guidance & Legislation

There is no specific legislation or guidance on the methods that should be used to assess the socio-economic impacts of a proposed onshore wind farm development. The proposed method has however been based on established best practice, including that used in the UK Government and industry reports on the sector. In particular, this assessment will draw from two studies by BiGGAR Economics on the UK onshore wind energy sector: a report published by RenewableUK and the Department for Energy and Climate Change (DECC) in 2012¹³⁴ on the direct

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and wider economic benefits of the onshore wind sector to the UK economy and a subsequent update to this report published by RenewableUK in 2015¹³⁵.

There is also no formal legislation or guidance on the methods that should be used to assess the effects that wind farm developments may have on general tourism and recreation interests. The proposed method will consider specific attractions or tourism facilities to assess if there could be any effects from the development.

For recreational assets, guidance has been provided by NatureScot (NS) on how to assess effects on recreational amenity and the approach outlined has been used. This takes into consideration a number of potential effects, including direct effect on facilities, such as limitation or restrictions on access, and effects on the intrinsic quality of the resources enjoyed by people. In general, this guidance would consider recreational and access impacts to potentially be significant if:

- permanent or long-term effects on the resources on which enjoyment of the natural heritage depends, in particular where facilities have been provided by SNH or others under statutory powers;
- permanent or long-term change that would affect the integrity and long-term sustainable management of facilities which were provided by SNH or others under statutory powers;
- where there are recreational resources for open air recreation pursuits affected by the proposal which have more than local use or importance, especially if that importance is national in significance;
- major constraints on or improvements for access or accessibility to designated natural heritage sites; and
- where mitigation and/or compensatory or alternative recreational provision is considered to be inadequate.

It is also important that the socio-economic and tourism assessment takes account of the relevant local and national policy objectives. The most relevant objectives for this are expected to be included in the following strategies:

- Scottish Government (2022), Scotland's National Strategy for Economic Transformation;
- Scottish Government (2023), Scotland's National Performance Framework;
- Scottish Government (2021), Local Energy Policy Statement;
- Scottish Government (2022), Onshore Wind Policy Statement;
- Scottish Government (2023), Onshore Wind Sector Deal;
- EDAS (2023), Implementing Community Wealth Building, A Guide
- Argyll and Bute Council (2019), Argyll and Bute's Strategy 2019-2023; and
- Scottish Tourism Alliance (2021), Scotland Outlook 2030.

It is also essential to take into consideration for the assessment the fourth National Planning Framework (NPF4)¹³⁶, the national spatial strategy for Scotland. The document considers:

- Scotland's spatial principles;
- National planning policy;
- National developments; and
- Regional priorities.

In the context of energy generation, Policy 11 is relevant to the socio-economic impact of the Proposed Development. Paragraph (c) states that "development proposals will only be supported where they maximise net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities". The analysis will reach the conclusion on whether the project maximises the net economic impact in the context of this NPF4 Policy 11(c).

¹³⁵ BIGGAR Economics (2015) Onshore Wind: Direct and Wider Economic Benefits

¹³⁶ Scottish Government (2023), National Planning Framework 4

Paragraph (d) of Policy 11 sets out a number of impacts that should be addressed during project design and mitigation. That list does not include tourism.

In addition, Policy 25 states that “Development proposals which contribute to local or regional community wealth building strategies and are consistent with local economic priorities will be supported”. The stand-alone report will also consider how this development will contribute to community wealth in the local area.

Whilst NPF4 includes no requirement to consider tourism when considering net economic impact or in the project design and mitigation process, relevant employment statistics show that in Local Area the employment in the sustainable tourism sector accounts for a higher percentage of total employment in the area (22%) compared to both Argyll and Bute (15%) and Scotland (9%). This indicates the importance of tourism in the local area surrounding the Proposed Development and it is recognised that local stakeholders may be interested in the potential impact. Thus, a tourism assessment will be included in the socio-economic report.

17.4. Baseline Description

The population of Argyll and Bute was 86,200 in 2022 (1.6% of the Scottish total), of which 59% were working age, lower than the figure for Scotland of 64%¹³⁷. Of this population, an estimated 6,623 live in the Local Area. Between 2022 and 2043, the population of Argyll and Bute is projected to decrease by 14.8%, compared to a 1.7% increase for Scotland as a whole¹³⁸.

The proportion of the population that is economically active is lower in Argyll and Bute (74.7%), compared to Scotland as a whole (77.9%), while the unemployment rate is 3.0% compared to 3.4% nationally¹³⁹.

The main sectors of employment in Argyll and Bute are accommodation and food services activities (13% of employment in Argyll and Bute compared to 8% in Scotland), wholesale and retail trade (13% across both Argyll and Bute and Scotland) and human health and social work activities (11% in Argyll and Bute compared to 15% nationally). The share of employment in construction in Argyll and Bute is 6%, similar to the Scottish average¹⁴⁰.

In the Local Area, around 22% of employment is in the sustainable tourism sector, which is higher than the proportion in Argyll and Bute (15%) and Scotland as a whole (9%)¹⁴¹. This indicates the importance of tourism in the area surrounding the Proposed Development.

The socio-economic and strategic baseline will be expanded on in the standalone report through a review of publicly available data sources. This will include:

- the population characteristics of the local area, including local and national demographic trends;
- deprivation statistics set within a national context;
- employment and economic activity in the local area within the context of the national economy;
- wage levels in the local area compared to the national level;
- the industrial structure of the local economy compared to the national level; and
- the role of the tourism sector in the local economy.

17.5. Assessment Methodology

It is anticipated that the contents of the assessment will include:

¹³⁷ ONS (2023), Population estimates – local authority based by five-year age band

¹³⁸ National Records of Scotland (2020), Population Projections for Scottish Areas (2018-based)

¹³⁹ ONS (2024), Annual Population Survey

¹⁴⁰ ONS (2023), Business Register and Employment Survey

¹⁴¹ Scottish Government (2023), Growth Sector statistics

- introduction;
- economic development and tourism strategic context;
- baseline socio-economic context;
- baseline tourism and recreation context;
- socio-economic assessment;
- tourism and recreation impact assessment;
- maximising socio-economic benefits; and
- summary of findings and conclusion.

This will primarily be a desk-based study with consultation undertaken by the Applicant with the local community to further inform the baseline and inform any opportunities from the Proposed Development which arise therein.

The assessment of socio-economic impacts will focus on the level of activity/employment supported during the construction and operation phases. Government and industry reports will be used to determine the expected capital and operational expenditure associated with the Proposed Development, as well as the breakdown of expenditure by different contracts (e.g. turbine, balance of plant). An assumption will then be made based on the share of each type of contract that can be secured regionally and nationally. This increase in turnover will then be used to estimate the economic impact associated with the Proposed Development.

In order to assess effects on tourism and recreation, the features that make the local area distinctive and attractive will be identified and the potential impact of the Proposed Development on those key features will then be assessed.

17.6. Proposed Mitigation and Enhancement

Proposed mitigation measures will depend on the findings of the assessment. Proposed measures that will be adopted to enhance the socio-economic impacts include:

- engaging early with the local community and local businesses;
- providing clear information on technical requirements that can allow businesses to prepare; and
- incentivising Tier 1 suppliers to engage with local businesses.

Other measures will be identified as part of the standalone socio-economic and tourism assessment.

17.7. Potential Impacts

The impacts that will be considered in this assessment will include the potential socio-economic, tourism and recreation impacts associated with the Proposed Development.

An economic impact analysis will be undertaken using the methodology developed by BiGGAR Economics; which has been used to assess over 150 onshore wind farms across the UK. The potential socio-economic impacts that will be considered are:

- temporary effects on the identified study areas due to expenditure during the construction phase;
- permanent effects on the identified study areas due to expenditure associated with the ongoing operation and maintenance of the Proposed Development;
- permanent effects as a result of any additional public expenditure that could be supported by the additional tax revenue that would be generated by the development during the operational phase; and
- permanent effects on the local economy that could be supported by any community funding and/or shared ownership proposals during the operational phase of the development.

The link between onshore wind energy developments and the tourism sector has been a subject of debate. However, the most recent research has not found a link between tourism employment, visitor numbers and onshore wind development.

In 2021¹⁴², this study was updated, and research identified 16 wind farms, each with a capacity of at least 10 megawatts that became operational between 2015 and 2019. Analysis of trends in tourism employment in the locality of these wind farms (15 km radius) found that 11 of the 16 areas had experienced more growth in tourism employment than for Scotland as a whole. For 13 of the 16 windfarms, trends in tourism employment in the locality had outperformed the local authority in which they were based. This work reflected an update of previous work undertaken by BiGGAR Economics in 2017 that considered 28 wind farms constructed between 2009 and 2015 and the trends in tourism employment in the areas local to these developments. The analysis found that there was no relationship between the development of onshore wind farms and tourism employment at the level of the Scottish economy, at the local authority level nor in the areas immediately surrounding wind farm developments.

Nevertheless, the tourism sector is an important contributor to the Scottish economy, and particularly in the Local Area surrounding the Proposed Development where the sustainable tourism sector accounts for 22% of the total employment, higher than the relative proportion in Argyll and Bute (15%) and Scotland (9%).

Therefore, there is merit in considering whether the Proposed Development will have any effect on tourism behaviour and the tourism economy. This assessment will consider the potential effects that the development could have on tourism following a more focused approach on effects related to key tourist attractions and recreation assets.

17.8. Receptors and Impacts Scoped In or Out of Assessment

It is proposed that any substantial, adverse impacts identified as part of the standalone socio-economic, tourism and recreation assessment will be considered as part of the EIA, and all other impacts will be scoped out.

17.9. Scoping Questions to Consultees

The following questions are directed to consultees:

- **Question 38:** Do you agree that the scope of the proposed assessment is appropriate?
- **Question 39:** Are there specific socio-economic, tourism and recreation effects that should be considered?

142 BiGGAR Economics (2021) Wind Farms & Tourism Trends in Scotland: Evidence from 44 Wind Farms

18. Aviation

18.1. Introduction

This chapter has been prepared by Wind Farm Aviation Safeguarding Limited (WFAS Ltd).

The Proposed Development is located in a relatively benign aviation environment and remote from significant aviation features and infrastructure. It is located under unregulated airspace and over 60 km from the nearest large commercial airport, the Scottish Terminal Manoeuvring Area (TMA) or military aviation facilities. This chapter explains the methodology used to undertake the aviation safeguarding scoping assessment, lists the relevant aviation references and describes the aviation baseline conditions together with consultation requirements and where mitigations might be required.

The following documents are referenced in this assessment:

- Civil Aviation Publication (CAP) 764 Civil Aviation Authority (CAA) Policy and Guidance on Wind Turbines;
- CAP 774 UK Flight Information Services;
- CAP 168 Licensing of Aerodromes;
- CAP 493 Manual of Air Traffic Services Part 1;
- CAP 670 Air Traffic Services Safety Requirements;
- CAP 774 UK Flight Information Services;
- CAP 738 Safeguarding of Aerodromes;
- CAP 793 Safe Operating Practices at Unlicensed Aerodromes;
- CAA Policy Statement of Lighting of Onshore Wind Turbine Generators;
- Military Aviation Authority Traffic Management (3000 series) Instructions;
- Military Aviation Authority Regulatory Article 2330 (Low Flying);
- UK Military Aeronautical Information Publication (MIL AIP);
- UK Aeronautical Information Publications (AIP); and
- CAA 1:250,000 and 1:500,000 VFR Charts.

18.2. Assessment Criteria and Methodology

The development of wind turbines has the potential to cause a variety of adverse effects on aviation during turbine operation. These include (but are not limited to): physical obstructions, the generation of unwanted returns on Primary Surveillance Radar (PSR) and adverse effects on the overall performance of Communications, Navigation and Surveillance (CNS) equipment.

The assessment of effects of the proposed turbines will be based upon the guidance laid down in CAA Publication CAP 764, Policy and Guidelines on Wind Turbines Version 6 Dated February 2016. The consultation criteria for aviation stakeholders is defined below. These distances inform the size of the assessment area and include:

- Airfield with a surveillance radar – 30 km;
- Non radar licensed aerodrome with a runway of more than 1,100 metres – 17 km;
- Non radar licensed aerodrome with a runway of less than 1,100 metres – 5 km;
- Licensed aerodromes where the turbines would lie within airspace coincidental with any published Instrument Flight Procedure (IFP);
- Unlicensed aerodromes with runways of more than 800 metres – 4 km;

- Unlicensed aerodromes with runways of less than 800 metres – 3 km;
- Gliding sites – 10 km; and
- Other aviation activity such as parachute sites and microlight sites within 3 km – in such instances developers are referred to appropriate organisations.

CAP 764 goes on to state that these distances are for guidance purposes only and do not represent ranges beyond which all wind turbine developments will be approved or within which they will always be objected to. These ranges are intended as a prompt for further discussion between developers and aviation stakeholders and will be reported upon in the EIA.

It is necessary to take into account the aviation and air defence activities of the Ministry of Defence (MoD) as safeguarded by the Defence Infrastructure Organisation (DIO). The types of issues that will be addressed in the EIA include:

- Ministry of Defence Airfields, both radar and non-radar equipped;
- Ministry of Defence remote Air Traffic Control (ATC) radars;
- Ministry of Defence Air Defence Radars;
- Ministry of Defence Meteorological Radars; and
- Military Low Flying.

It is also necessary to take into account the possible effects of wind turbines upon the National Air Traffic Services En Route Ltd (NERL) communications, navigation and surveillance systems – a network of primary and secondary radars and navigation facilities around the country.

As well as examining the technical impact of wind turbines on ATC facilities, it is also necessary to consider the physical safeguarding of ATC operations using the criteria laid down in CAP 168 Licensing of Aerodromes to determine whether a proposed development will breach obstacle clearance criteria. This will also be reported on in the EIA, but initial surveys show there are no physical safeguarding issues associated with the Proposed Development.

18.3. Radar Modelling Methodology

The radar calculation results shown in this report have been produced using specialist propagation prediction software (RView). Developed over a number of years, it has been designed and refined specifically for the task. RView uses a comprehensive systems database which incorporates the safeguarding criteria for a wide range of radar and radio navigation systems. RView models terrain using the latest OS Terrain 50 digital terrain model, which has a post spacing of 50 m and has a root mean square (RMS) error of 4 m. The results are verified using the Shuttle Radar Topography Mission (SRTM) dataset, a separate smoothed digital terrain model with data spacing of 3 arc seconds. By using two separate and independently generated digital terrain models, anomalies are identified and consistent results assured. Rview models the refractive effects of the atmosphere on radio waves and the First Fresnel Zone. A feature of RView is that as well as performing calculations in the manner believed to be most appropriate it also allows comparison with results from simpler models. For example, RView can perform calculations using the true Earth Radius at the midpoint between the radar and the wind turbine or the simplified 4/3 Earth Radius model.

18.4. Licensed Aerodromes

An initial review undertaken by WFAS Ltd using the above criteria shows that there are no civil licensed radar equipped aerodromes within 30 km, however, the closest is at Glasgow Prestwick Airport (GPA), 63 km to the east.

Radar line of sight (RLOS) modelling has been undertaken against the GPA radar with the results in Table 18.1 below. The results show that none of the turbines will be visible to the radar and consultation is not required.

Table 18.1: Line of Sight Glasgow Prestwick Airport

Turbine	Distance (Km)	RLOS (metres above ground level)
1	62.919	1026.4
2	62.177	991.2
3	61.761	929.2
4	62.484	945.8
5	63.202	941.7
6	62.548	822.6
7	63.29	856.1
8	64.165	782.3
9	63.584	663.3
10	63.171	384.5
11	62.573	599.9
12	62.184	414.8
13	64.723	629.4
14	65.341	480.0
15	64.643	400.5
16	63.910	377.0
17	63.363	342.2
18	62.607	357.6
19	63.486	315.8
20	64.068	340.6
21	64.217	338.7
22	63.109	319.9
23	62.479	312.6

There are no non-radar equipped licensed aerodromes within 17 km; the closest is at Campbeltown, 27 km to the southwest. Although beyond standard consultation and safeguarding distance, and whilst no impact is anticipated, it would be prudent to consult with Highlands and Islands Airports Ltd (HIAL) to confirm their position. This will be undertaken and reported in the EIA.

18.5. Unlicensed Aerodromes

There are no known unlicensed aerodromes within consultation distance. The closest facility of interest is the private airstrip on Gigha, approximately 12.5 km to the west. There is no requirement to consult with the operator of Gigha airstrip.

An online search for private airfields has been conducted and none identified within consultation distance, however, not all private strips are listed in publications or marked on charts. Operators of any such private airstrips that are

identified during EIA preparation will be consulted in accordance with CAP 764 and CAP 793 Safe Operating Practices at Unlicensed Aerodromes.

18.6. Ministry of Defence

MoD Air Traffic Control - The closest MoD radar equipped airfield is at the dormant airfield at West Freugh, 96 km to the southeast. The radar is used mainly for range control in Luce Bay Danger Areas and in the approaches to those areas. For completeness radar modelling has been undertaken with the results at Table 18.2. It is evident that there is no possibility of the Proposed Development affecting the West Freugh radar and there will be no MoD ATC radar objection. The MoD will be consulted to confirm their position and their response reflected in the EIA.

Table 18.2: West Freugh Radar Results

Turbine	Distance (Km)	RLOS (metres above ground level)
1	97.785	499.1
2	97.264	484.8
3	96.517	476.8
4	96.811	433.2
5	97.430	484.8
6	96.196	432.3
7	96.724	449.0
8	97.090	417.6
9	96.373	388.2
10	95.630	312.1
11	95.625	389.6
12	94.877	383.3
13	97.059	380.9
14	97.130	423.0
15	96.431	399.1
16	95.890	370.3
17	95.152	345.4
18	94.640	352.7
19	94.636	353.9
20	95.407	382.1
21	94.92	434.7
22	93.894	398.8
23	93.197	359.9

MoD Air Defence - There are no affected air defence radars. Radar modelling has been undertaken which shows that the closest radar is at Benbecula, North Uist, over 250 km to the north. It will not be affected as the turbines are all screened by terrain and earth curvature.

MoD Low Flying – The Proposed Development is located within a blue area on the MoD wind farm low flying consultation charts. A blue area is defined as a “low priority military low flying area less likely to raise concern” and an objection is unlikely.

18.7. NATS En Route Ltd (NERL)

The closest NERL radars are at Lowther Hill and Tiree. Initial radar modelling indicates that the Proposed Development will have no effect on the Tiree radar which is approximately 128 km to the north-west and completely screened by Jura.

Radar modelling for Lowther Hill has been undertaken with the results in Table 18.3.

Table 18.3: Lowther Hill Radar Results

Turbine	Distance (Km)	RLOS (metres above ground level)
1	117.212	786.8
2	116.471	776.8
3	116.069	730.9
4	116.795	643.8
5	117.509	729.2
6	116.870	635.3
7	117.611	684.2
8	118.489	592.0
9	117.911	476.9
10	117.500	218.0
11	116.901	444.0
12	116.514	267.6
13	119.050	436.3
14	119.670	298.7
15	118.973	227.4
16	118.240	208.5
17	117.691	162.6
18	116.936	184.6
19	117.810	130.0
20	118.396	153.3
21	118.539	137.2
22	117.426	150.0
23	116.790	138.4

Source: <Insert Source or notes>

The results show that seven of the turbines will be in theoretical line of sight from the Lowther Hill radar. It will be necessary to consult with NERL and the results of the consultation will be included in the EIA.

18.8. Met Office Radars

The Met Office safeguards its network of radars using a European methodology known as OPERA. In general, they will object to any turbine within 5 km in line of sight and will examine the impact of any turbines within 20 km.

In this case the closest Met Office radar is Holehead, over 80 km to the north-east and well beyond 20 km. There is unlikely to be a Met Office radar objection to this proposal, this will be confirmed through consultation and reported in the EIA.

18.9. Consultation

Consultation with relevant aviation providers is a routine part of wind farm development and in accordance with CAP 764 consultees will include:

- MoD DIO;
- NERL; and
- HIAL (Campbeltown Airport).

18.10. Aviation Obstruction Lighting

CAA extant lighting policy is covered in CAA Policy Statement of Lighting of Onshore Wind Turbine Generators which states that any obstruction in excess of 150 m above ground level constitutes an 'en route navigation hazard'. Wind turbines are lit with medium intensity (2000 candela) fixed red lights located on the highest practical point, in this case the nacelle. There is also currently a requirement for 32 candela lights halfway down the tower. There are a number of mitigations that can be applied to minimise the effect of lighting on the surrounding area including reducing the number of turbines that need to be lit, reducing the brilliance of the lights to a minimum of 10% when the visibility in all directions exceeds 5 km and designing the lights to minimise downwards illumination. If necessary, a full lighting assessment may be undertaken for inclusion as an appendix within the EIA.

18.11. Conclusion

As a result of the above assessment, and the need to consult with the specified stakeholders, Aviation Safeguarding is scoped into the EIA.

18.12. Scoping Questions to Consultees

The following questions are directed to consultees:

- **Question 39:** Do you agree that the scope of the proposed assessment is appropriate?

19. Other Issues

A single EIAR chapter will be prepared to address any implications the Proposed Developable Area may have on other technical disciplines that are not covered within the other technical chapters of the EIAR. It is anticipated that this chapter would address the following issues:

- Carbon Balance;
- Shadow Flicker;
- Telecommunication & TV; and
- Forestry.

19.1. Carbon Balance

Current best practice recommends that the EIAR include undertaking a carbon balance assessment which assesses effects with reference to the magnitude of emissions released by the development and the period of time it takes to payback for those carbon emissions, the context of those emissions (e.g. national, regional and local emissions reduction targets) and professional judgement. This assessment will be based on the proposed information regarding the scale and nature of the Proposed Development. Where data is unavailable, worst-case reasonable assumptions will be used.

A carbon balance assessment employs the Scottish Government's Carbon Calculator Tool¹⁴³ and quantifies the CO₂ emissions savings over the life of the Proposed Development against the release of CO₂ from other energy generation methods as a result of implementing the project. It also reports on the time it takes to pay back any carbon debt and the potential effects of the Proposed Development on climate change in terms of carbon savings produced.

A carbon balance assessment will be produced to give an indication of the Proposed Development's impact on the existing peat on site and to assess the potential effects in terms of carbon dioxide (CO₂) emissions against the total potential carbon savings attributed to the Proposed Development. The assessment will quantify the gains over the life of the project against the release of CO₂ during construction, including loss of peat bog and construction of roads/tracks and other infrastructure. The latest version of the Carbon Calculator that is available before the application is submitted will be used. It is not expected for there to be any requirement for the Carbon Balance assessment to be amended post submission following any further update of the Carbon Calculator that may occur.

19.2. Shadow Flicker

Shadow flicker is an effect caused by the rotation of the turbine blades when the sun is shining, which can create a flickering or strobe like effect. Shadow flicker will be calculated using WindFarmer software which will identify the potential areas susceptible to shadow flicker and the extent of shadow flicker impact caused. This software can identify the study area for the assessment based on candidate turbine dimensions and orientations, as well as model periods of predicted shadow flicker.

Shadow flicker will be calculated assuming:

- There are clear skies every day of the year;
- The turbines are always rotating;
- The sun can be represented as a single point; and

¹⁴³ The Scottish Government (2008) CARBON CALCULATOR TOOL Available from - [Carbon Calculator Tool \(sepa.org.uk\)](https://sepa.org.uk/carbon-calculator-tool). [Accessed 19/08/2024]

- The blades of the turbines are always perpendicular to the direction of the line of sight from the specified location to the sun.

There is no standard for the assessment of shadow flicker in Scotland and there are no guidelines with which to quantify what exposure levels would represent a significant versus not significant effect. In the absence of specific guidelines and if shadow flicker has to be assessed in the EIAR, the assessment will consider the 'Best Practice Guidance for Planning Policy Statement 18 (PPS18) Renewable Energy' (Department of Environment Northern Ireland, 2009)¹⁴⁴ from Northern Ireland, which states: *"It is recommended that shadow flicker at neighbouring offices and dwellings...should not exceed 30 hours per year or 30 minutes per day"*. As such, properties where shadow flicker would potentially exceed these thresholds would be subject to significant effects.

It is proposed that shadow flicker can be scoped out if the final layout for proposed turbines is further than 10 rotor diameters from potential receptors.

19.3. Telecommunication & TV

Tall structures such as wind turbines can adversely affect the performance of fixed telecommunications links, if positioned close enough to those links. Standards for the separation of wind turbines from fixed telecommunications links are set out in an Ofcom-recommended paper 'A proposed method for establishing an exclusion zone around a terrestrial fixed radio link outside of which a wind turbine will cause negligible degradation of the radio link performance.'¹⁴⁵

The proximity of the Proposed Development to fixed telecommunications links will be assessed by interrogating the Ofcom Spectrum Information Portal and its associated Wireless Telegraphy Register; and by consulting the operators of scanning telemetry and television re-broadcast links. A study area of 5 km radius from the site boundary will be adopted in order to determine the fixed telecommunications link baseline. The telecommunications baseline will be determined from consultations and by review of Ofcom data. Initial indications suggest that there is one fixed microwave link with the potential to be adversely affected by the Proposed Development.

Significance criteria for assessment of impacts on telecommunications, unlike those for environmental effects, are not based on the sensitivity of the receptor. The significance of effects on telecommunications will be determined by the consultation responses from telecommunications operators.

19.4. Forestry

19.4.1. Introduction

Forestry is not being regarded as a receptor for EIA purposes. However, it is being included in this scoping assessment and this section describes the approach which will be used to integrate the Proposed Development site into existing woodland, should afforested lands at Deucheran Hill 2 be developed.

The proposed site is located within commercial woodlands, owned and managed by Forestry and Land Scotland, the Scottish Government agency responsible for managing Scotland's national forests and land. They consist primarily of mixed age commercial conifers crops ranging from mature high forest to recently replanted crops, all managed via an approved Long Term Forest Plan (LTFP).

A Forestry Assessment would be prepared, detailing

¹⁴⁴ Department of Environment, Northern Ireland (2009) Best practice Guidance to Planning Policy statement 18 'Renewable Energy Available from - [Planning Policy Statement 18 'Renewable Energy' Best Practice Guidance \(infrastructure-ni.gov.uk\)](https://infrastructure-ni.gov.uk). [Accessed 19/08/2024]

¹⁴⁵ Ofcom. (2002) A proposed method for establishing an exclusion zone around a terrestrial fixed radio link outside of which a wind turbine will cause negligible degradation of the radio link performance, Version 1.1 Available from - [Microsoft Word - windfarmdavidbacon.doc \(ofcom.org.uk\)](https://www.ofcom.gov.uk/consult/condocs/windfarm/windfarmdavidbacon.doc). [Accessed 29/08/2024]

- Legislation, Policy and Guidance;
- Woodland characteristics and baseline conditions including wind blow risk within the development;
- Direct and indirect construction effects/impacts;
- Landscape impacts;
- Woodland Management impact, leading to;
- Wind Farm Forest Plan including felling and replanting proposals;
- Woodland loss resulting from the development;
- Potential on site mitigation of woodland loss;
- Requirement for Compensatory Planting;
- Forestry Waste;
- Forestry Management Practices; and
- Net impact summary

In the UK there is a strong presumption against permanent deforestation unless it addresses other environmental concerns. In Scotland, such felling is dealt with under the Scottish Government's "Control of Woodland Removal Policy" (FCS 2009)¹⁴⁶. The purpose of the policy is to provide direction for decisions on woodland removal in Scotland. The requirements of this and other relevant policies will be addressed within the EIA and reported in the EIAR.

19.4.2. Consultation

In addition to FLS as landowner, the principle forestry consultee is Scottish Forestry (SF), who are the Scottish Government agency responsible for forestry policy, support and regulations. For organisational purposes Scottish Forestry divides Scotland into five districts, termed "conservancies". Perth & Argyll Conservancy covers the geographic area within which the proposed development lies and they will require detailed consultation to ensure that the development impacts are appropriate and address the requirements of the Control of Woodland Removal Policy and other guidance.

In addition, there may be interrelated issues raised by other consultees e.g. SEPA on forestry residues, or NatureScot regarding Ancient Semi Natural Woodland, which would be addressed within the forestry assessment. Consultees and process are listed in section 5.

19.4.3. Legislation and Guidance

The forestry proposals will be prepared in accordance with the current industry best practice and guidance including, but not limited to:

- Forestry Commission (2017). The UK Forestry Standard: The Government's Approach to Sustainable Forestry, 4th edition, Forestry Commission, Edinburgh. (*Applies until 1st October 2024 after which the 5th edition standards will be applied.*)
- Forestry Commission (2017): The UK Forestry Standard Guidelines. Edinburgh. (*Apply until 1st October 2024 after which the 5th edition will apply*)
- Forestry Commission Scotland (2009). The Scottish Government's Policy on Control of Woodland Removal. Edinburgh.

¹⁴⁶ Scottish Government, 2009, Control of Woodland Removal Policy. Available from - <https://forestry.gov.scot/support-regulations/control-of-woodlandremoval> [Accessed: 19/08/2024]

- Forestry Commission Scotland (2019): Scottish Government's policy on control of woodland removal: implementation guidance.
- The Scottish Government (2019). Scotland's Forestry Strategy 2019. Edinburgh.
- The Scottish Government (2021). Scotland's Third Land Use Strategy 2021-2026. Edinburgh.
- The Scottish Government (2012): Waste (Scotland) Regulations 2012.
- The Scottish Government (2023). Scotland's Fourth National Planning Framework (NPF4). Edinburgh.
- The Scottish Government (2014). Scottish Planning Policy. Edinburgh
- SEPA (2013): SEPA Guidance Notes WST-G-027 "Management of Forestry Waste".
- SEPA (2014): LUPS-GU27 "Use of Trees Cleared to Facilitate Development of Afforested Land.
- UKWAS (2017). The UK Woodland Assurance Standard Fourth Edition, UKWAS, Edinburgh. (5th Edition is expected to replace the 4th edition at some point in 2024, now that FSC UK has received FSC International's assessment of the UKWAS 5 pre-approval Draft).

19.4.4. Methodology

Commercial forests are dynamic and constantly changing as a result of management activity, market forces and natural events such as windblow, pests and diseases.

Commercial forestry is not therefore regarded as a receptor for a formal impact assessment. Instead a factual assessment describing the changes to the forest structure resulting from the incorporation of the proposed wind farm into the forest, will be presented as outlined at section 19.4.1 above. The effects of forest felling and restocking will be assessed in the relevant chapter of the EIAR.

Woodland characteristics and baseline conditions will describe the forest and its crops existing at the time of preparation of the EIAR. This will include current access, species, age, felling and restocking plans and other relevant woodland information including a description of areas of ancient woodland. It will be prepared utilising existing forest records, approved long term forest plan proposals, desk-based assessments, site visits and aerial/satellite photographs.

Changes to the forest structure resulting from the proposed development are anticipated, with consequential implications for the felling and restocking plans across the wider forest area. Areas of woodland may need to be felled to accommodate the construction and operation of the proposed development as listed in section 3.2 and in more detail in sections 3.4 to 3.8 inclusive of this report.

They include;

- site investigation,
- access routes (new or widening of existing),
- borrow pits,
- turbine locations,
- cable routes,
- substation,
- battery storage,
- construction compounds,
- other infrastructure including permanent met mast.

The potential effects could result in changes to the structure of the woodlands, which may lead to a net loss of woodland area. Such effects will be addressed through a redesign of the existing forest including the use of designed

open space, alternative woodland types, adjusting management intensity, or compensatory planting on an alternative site.

Changes to forests for a particular development are regarded as site specific, therefore there are no cumulative forestry issues to be addressed.

The principal output of the process outlined above, will be the creation of a Wind Farm Forest Design Plan. This will include a felling plan to show which areas of the forest are proposed for felling and when they are to be felled during the life of the proposed development.

It will further include a restocking plan detailing which areas of the forest are to be replanted, with what tree species and when, during the life of the proposed development.

The changes to the woodland structure will be analysed and described including changes to species composition, age class structure, timber production, traffic movements as derived from the felling and restocking plans.

The resulting changes to the woodland structure and any requirement for compensation planting to mitigate against any woodland loss will be considered in the context of the Control of Woodland Removal Policy and in consultation with SF.

Integration of the proposed development into the forest design plan will be a key part of the development process. Should felling be required and compensatory planting needed as a nett result, this can be enforced through a planning condition should planning application be consented. Scottish Forestry will be consulted throughout and as part of the condition discharge process.

Initial site assessment indicates that there is limited opportunity to minimise impact on forestry operations by locate turbines and equipment in areas of open ground. Therefore, there is a requirement for the turbines to be sited in areas of forestry, and NP/RWE will strive to keyhole the turbines wherever practicable to mitigate the requirement for clear felling.

19.4.5. Scoping Question to Consultees

The following question is directed to consultees:

- **Question 40:** Do consultees agree with the process and methodology proposed regarding forestry and woodland in this chapter?

20. Synergistic Effects & Summary of Mitigation and Residual Effects

A concluding chapter will present the key findings from each EIAR chapter and any required mitigation. In line with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 it will then assess the potential synergistic effects that may occur in combination.

This chapter will summarise the residual effects regarding all of the proposed works in relation to the construction, operation and decommissioning of the Proposed Development. It will identify all mitigation, including the mitigation by design that will be undertaken to reduce any such effects, should the development be consented.

21. EIAR Accompanying Documents

21.1. Non-Technical Summary

The NTS details the main components of the Proposed Development and summarises the main findings of the environmental studies carried out to build and operate the Proposed Development. It is designed to be an easily readable document that will communicate the main elements of the EIA to any interested party without the need for the reader to have specialist background knowledge. It will also contain maps that show the extent and geographical location of the development.

Although not required to support a Section 36 application a PAC Report, Planning and Renewable Energy Policy Statement and a DAS will be submitted along with this EIAR.

22. Conclusion

This document has been prepared by Natural Power on behalf of the Applicant in anticipation of an application under Section 36 of the Electricity Act 1989¹⁴⁷ for the Deucheran Hill 2 Wind Farm development, located on an area of land on the Kintyre Peninsula in Argyll and Bute.

For each topic area, questions have been provided within this Scoping Report with the aim to scope in topics rather than scoping out. The questions focus on the methodologies, baseline data and likely impacts caused by the development. Information has been provided on the Proposed Development and the known environmental receptors. Where features or receptors are deemed to have a possible significant effect the methodologies to assess the impact have been provided for comment. Responses on these would help ensure that the detailed methodology, survey and assessment are carried out with consideration to all statutory consultees and key stakeholders. This approach is in line with good practice in the planning system and an emphasis being communicated at a national level to focus the content of the EIA and EIAR on key elements identified at the scoping stage.

147 UK Government. (1989) Electricity Act 1989 Available from - [Electricity Act 1989 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/1989/29/section/36) [Accessed: 19/08/2024]

23. Summary of Consultee Questions

A summary of consultation questions as proposed throughout this Scoping Report is below. Please see previous chapters where relevant for further context.

- **Question 1:** Do consultees agree with the proposed approach to scoping and the purpose of the Scoping Report?
- **Question 2:** Do consultees agree a micro-siting allowance of 100 m to allow flexibility within the project design?
- **Question 3:** Could consultees respond, where possible, which features and/or topics they feel are likely to experience a significant impact and should be scoped in?
- **Question 4:** Do consultees agree with the approach to the EIA and the associated mitigation and monitoring?
- **Question 5:** Do consultees agree with the approach set out for community consultation?
- **Question 6:** Do consultees agree with the proposed chapters to be included in the EIAR?
- **Question 7:** Do consultees agree with the proposed proportionate approach to the LVIA using a 45 km initial study area and focussing on a 20 km detailed study area?
- **Question 8:** Do consultees agree with the proposed assessment viewpoints that will be used in the LVIA?
- **Question 9:** Do consultees agree with the proposed approach to day-time and night-time photography and visualisations?
- **Question 10:** Do consultees agree with the proposed scope of the cumulative assessment including a 45 km initial search area and inclusion of turbines under 50 m in height only within 5 km of the Proposed Development?
- **Question 11:** Do consultees agree with the proposed approach to night-time assessment and the proposed night-time viewpoints?
- **Question 12:** Do consultees agree with the matters proposed to be scoped out of the LVIA?
- **Question 13:** Do consultees have any comments regarding the EcIA only concentrating on those receptors which may be subject to significant effects from the proposed development (either directly or indirectly)?
- **Question 14:** Table 11.5 above notes the receptors and potential impact proposed to be included within the EcIA. Do consultees have any comment regarding this sufficiently covering the potential impacts on features from the proposed development and what is proposed to be scoped out?
- **Question 15:** If Ecobat remains offline at the time of the EIAR, are consultees happy with the proposed method of assessment (a comparison with publicly available data from nearby proposals) for bat activity?
- **Question 16:** Do consultees have any comments regarding the EIA only concentrating on those receptors which may be subject to significant effects from the Proposed Development (either directly or indirectly)?

- **Question 17:** Table 12.3 notes the receptors and potential impacts proposed to be included within the EIA. Do consultees agree with the list of receptors and impacts to be included within the EIAR?
- **Question 18:** Are consultees satisfied that ornithological survey effort completed to date is suitable in order to provide a robust assessment of effects?
- **Question 19:** Are there any additional sources of baseline information which should be referred to, to inform the appraisal of effects on cultural heritage?
- **Question 20:** Are the proposals to scope out certain elements of cultural heritage from detailed assessment appropriate?
- **Question 21:** Are there any assets beyond the proposed study areas that consultees would like to see scoped into the assessment?
- **Question 22:** Are there any visualisations that the consultees would like to see as part of the assessment?
- **Question 23:** Do consultees agree with the proposed scope of the Hydrology, Hydrogeology, Geology and Peat assessment as summarised in Section 14.3?
- **Question 24:** Are consultees aware of any PWS within the Site boundary or within 2 km of it?
- **Question 25:** Do consultees accept the integration of a Flood Risk Assessment within the Hydrology, Hydrogeology, Geology and Peat EIAR chapter?
- **Question 26:** Are there any developments or infrastructure schemes which should be taken into account when considering potential cumulative impacts?
- **Question 27:** Within the ETSU-R-97 guidance will the Council accept a limit of 35 dB L_{A90} or the background noise + 5dB (whichever is the greater) for the Proposed Development? A limit of 40 dB L_{A90} or the background noise + 5 dB would apply to cumulative noise impacts?
- **Question 28:** Is the proposed baseline noise survey methodology (Section 15.3.1) acceptable?
- **Question 29:** Is the scope of the cumulative assessment (Section 15.3.2) acceptable or are there any other schemes that should be considered?
- **Question 30:** Will construction noise need to be formally assessed with the EIAR noise chapter? Any noise issues can normally be controlled with limits on working hours. The CEMP will also include measures on how noise is minimised using best practicable means?
- **Question 31:** Do the consultees agree that the geographical scope of the assessment as defined in Section 16.3 is appropriate?
- **Question 32:** Do the consultees agree that the survey methodology as presented in Section 16.4 is appropriate?
- **Question 33:** Do the consultees agree that the IEMA (2023) Guidance and the associated methodology as outlined in Section 16.6 is the appropriate methodology to adopt for this assessment?
- **Question 34:** Do the consultees agree that it is appropriate to scope out noise assessment from the Traffic and Movement Chapter as presented in Section 16.6.8.

- **Question 35:** Do the consultees agree with the adoption of 'collision cluster' approach to the assessment of road safety as presented in Section 16.6.15?
- **Question 36:** Given the short duration of the construction phase, do the consultees agree that it is appropriate to scope out traffic simulation / modelling and junction delay analysis?
- **Question 37:** Do the consultees have any further comments or information which would be relevant to the assessment?
- **Question 38:** Do you agree that the scope of the proposed assessment is appropriate?
- **Question 39:** Are there specific socio-economic, tourism and recreation effects that should be considered?
- **Question 39:** Do you agree that the scope of the proposed assessment is appropriate?
- **Question 40:** Do consultees agree with the process and methodology proposed regarding forestry and woodland in this chapter?

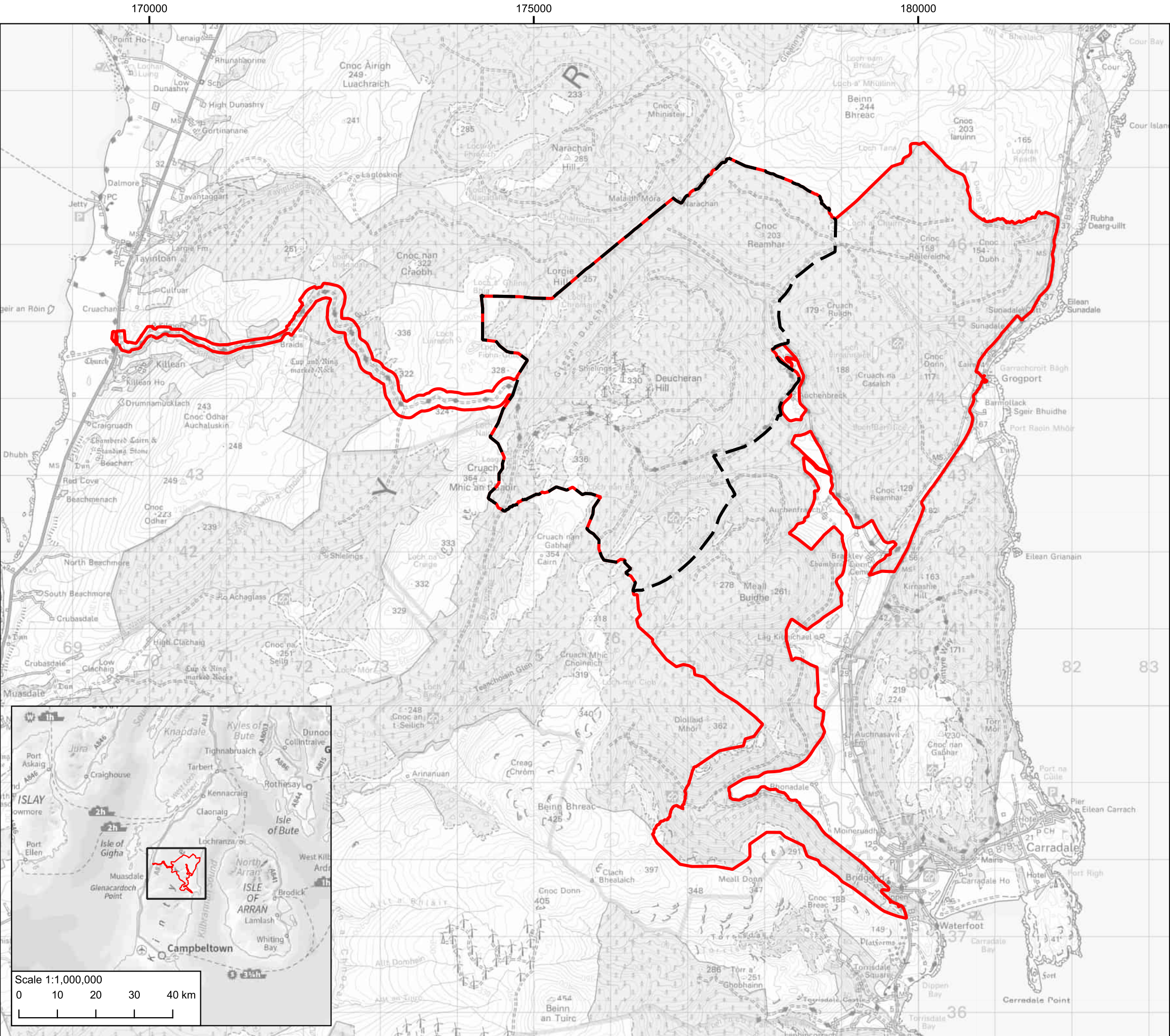
Appendices

A. Scoping Figures

Table A23.1: Scoping Figure List

Section	Figure Description
Project Description	Figure 3.1: Site Location Figure 3.2: Proposed Turbine Layout Figure 3.3: Regional Context
LVIA	Figure 10.1: ZTV BT-BG 45km A1 Figure 10.2: ZTV HH-BG 45km A1 Figure 10.3: ZTV BT-SCR 20km A1 Figure 10.4: ZTV HH-SCR 45km A1 Figure 10.5: Cumulative 45km A3
Ecology	Figure 11.1: Designated Sites Figure 11.2: Bat Detector Locations Figure 11.3: Phase 1 Survey Results 2023 Figure 11.4: Protected Species Results - CONFIDENTIAL
Ornithology	Figure 12.1: Site Location and Designated Sites
Cultural Heritage	Figure 13.1: Heritage Assets within the 1 km study area for the site and the 200 m study area for the access track Figure 13.2: Designated Heritage Assets within the 10 km study area

Source: Natural Power



Project:
Deucheran Hill 2 Wind Farm, Argyll & Bute

Title:
Figure 3.1: Site Location

Key

- Site boundary
- Turbine development area

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Scale @ A3: 1:50,000
Coordinate System: British National Grid

0 0.5 1 1.5 2 km

N

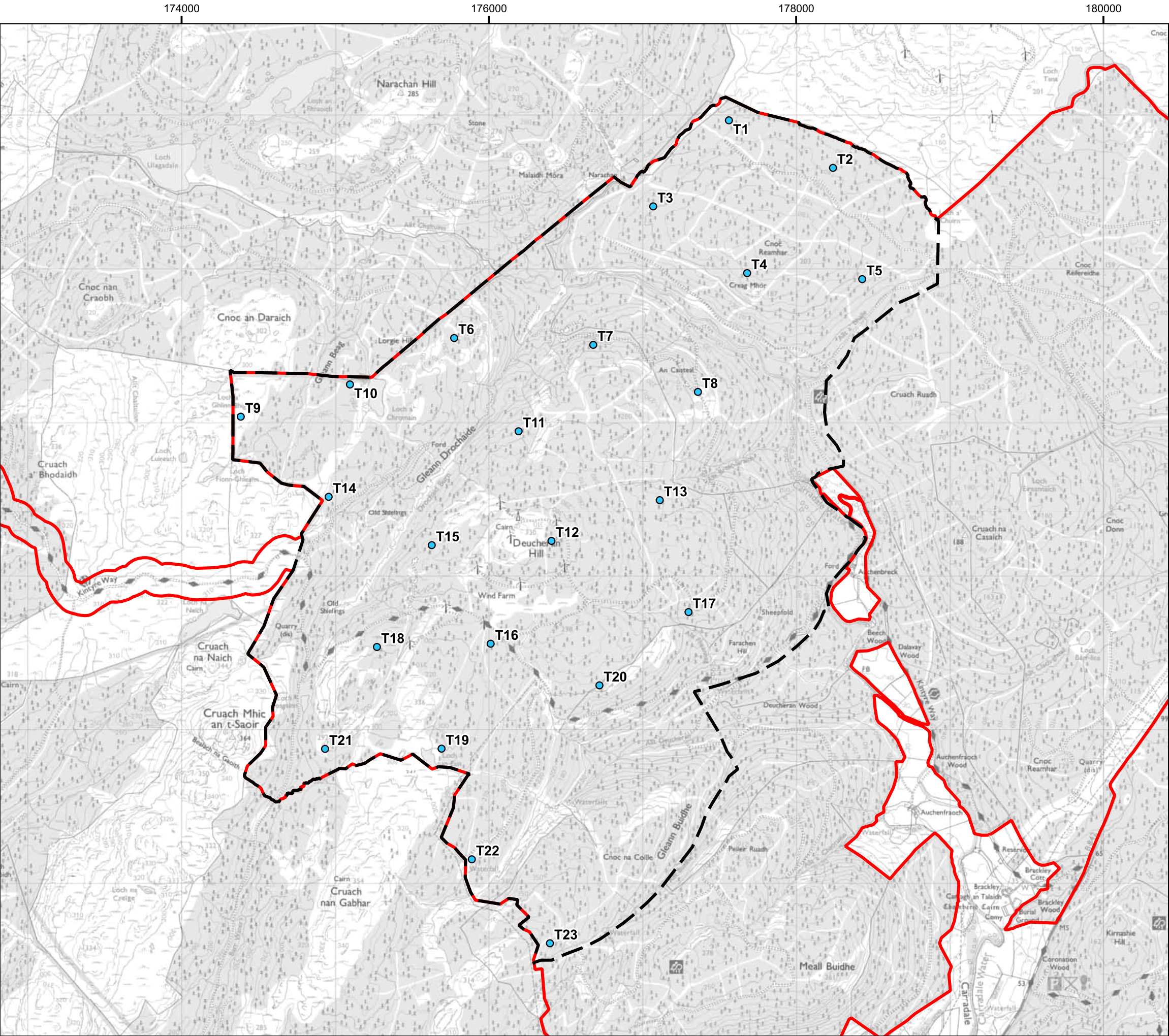
Date: 23-07-24	Prepared by: DH	Checked by: JL
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Project:
Deucheran Hill 2 Wind Farm, Argyll & Bute

Title:
Figure 3.2: Proposed Turbine Layout

Key

- Site boundary
- Turbine development area
- Proposed turbine

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Scale @ A3: 1:25,000
Coordinate System: British National Grid

0 0.25 0.5 0.75 1 km

N

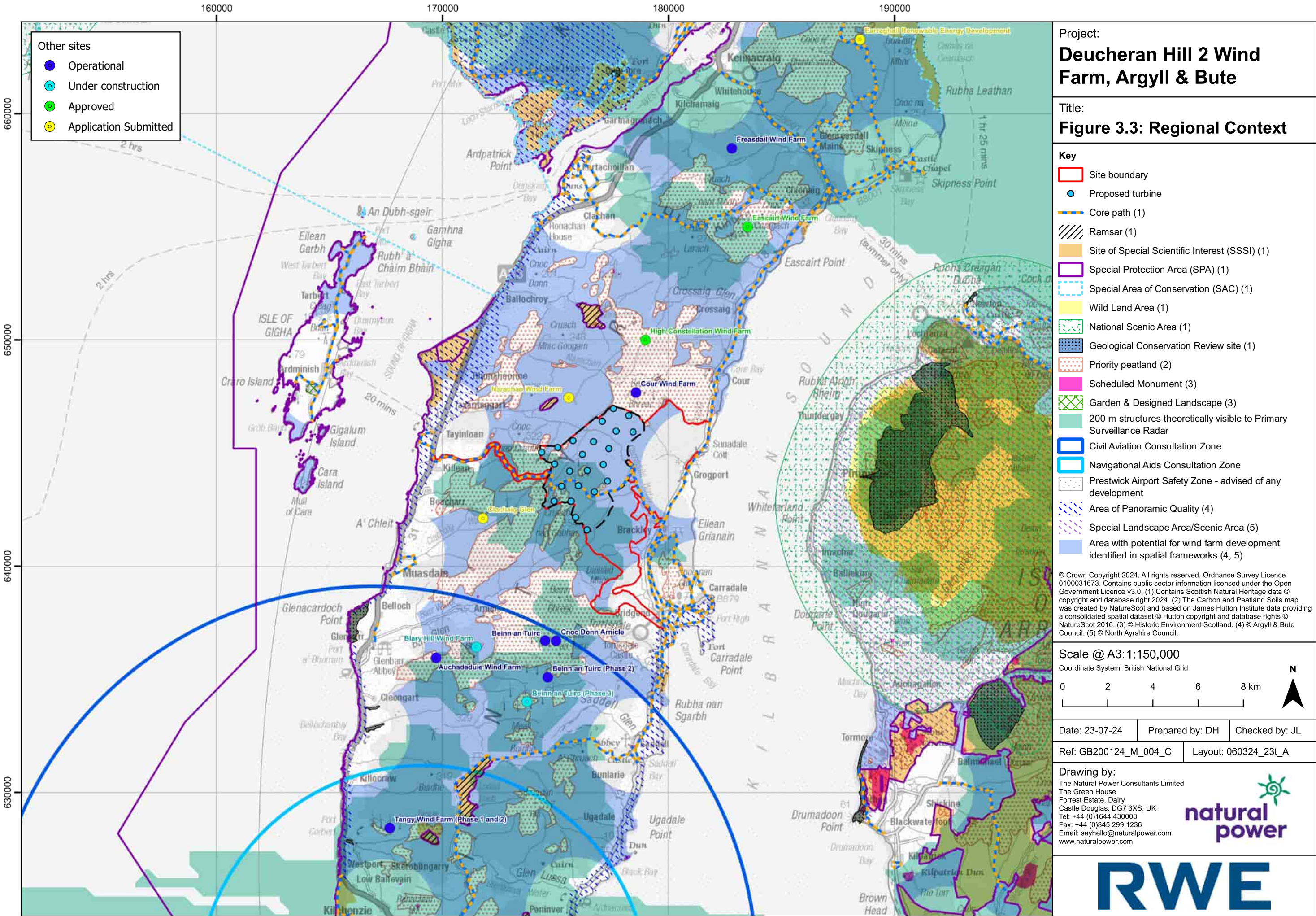
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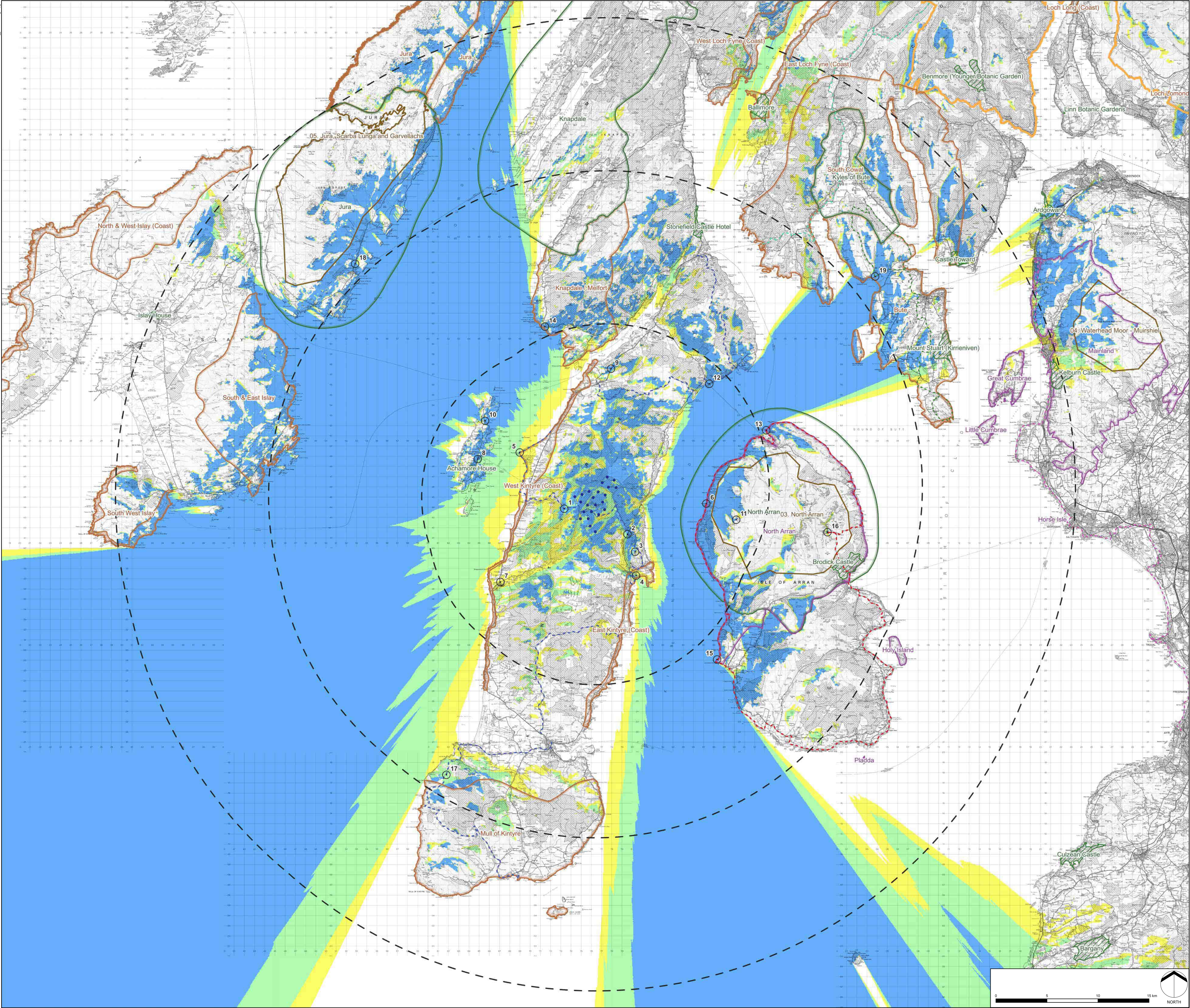
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DEUCHERAN HILL 2 WIND FARM

FIGURE 10.1

Zone of Theoretical Visibility (ZTV) to Blade Tip With Bare Ground Visibility



KEY

- Proposed Deucheran Hill 2 turbines
- Distance radii from outermost turbine (15, 30, 45km)
- Scoping viewpoints

Landscape Designations

- Local Landscape Areas (LLA) Argyll and Bute
- Special Landscape Areas (SLA) North Ayrshire
- National Scenic Areas (NSA) Scotland
- Loch Lomond and The Trossachs National Park
- Wild Land Areas (WLA) Scotland
- Gardens and Designed Landscapes (GDL) Scotland

Long Distance Routes

- Arran Coastal Way
- Ayrshire Coastal Path
- Cowal Way
- West Island Way

Zone of Theoretical Visibility (ZTV) to Blade Tip (220m)

- 1 - 8 turbines may be visible
- 9 - 16 turbines may be visible
- 17 - 23 turbines may be visible

FIGURE DATA:
This figure has been based on the following data:

Layout file: 0782-D001.shp
Terrain data: T50DTM
Viewer's eye height: 2m above ground level
Calculation grid size: 50m

NOTES:
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.

The areas shown are the maximum theoretical visibility, taking into account topography.

This visibility map is based on a 'bare earth' model of the landform and does not show any effects of screening from obstacles such as buildings and vegetation.

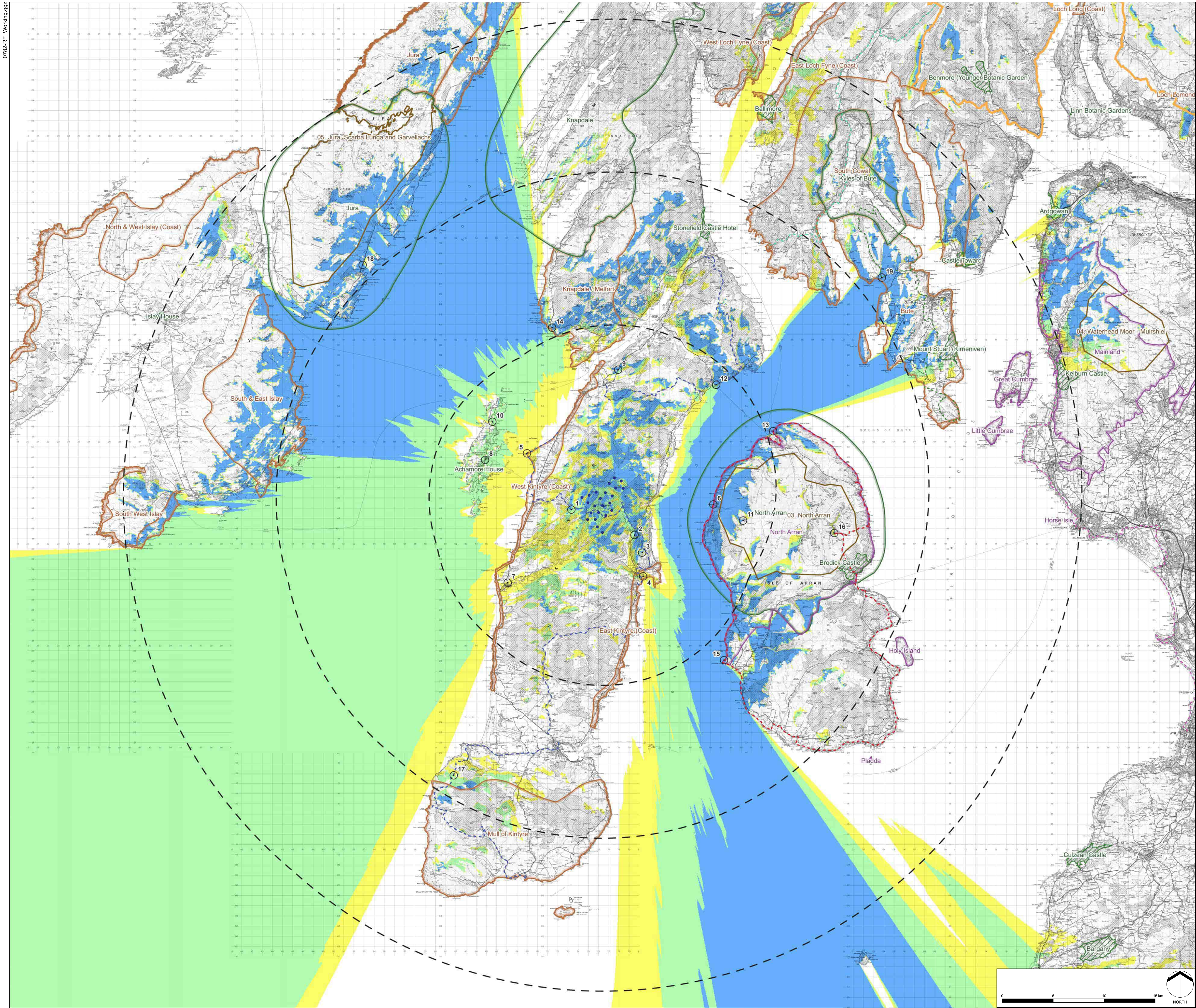
The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DTM and has a 50m² resolution.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Metres

DEUCHERAN HILL 2 WIND FARM

FIGURE 10.2

Zone of Theoretical Visibility (ZTV) to Nacelle With Bare Ground Visibility



KEY

- Proposed Deucheran Hill 2 turbines
- Distance radii from outermost turbine (15, 30, 45km)
- Scoping viewpoints

Landscape Designations

- Local Landscape Areas (LLA) Argyll and Bute
- Special Landscape Areas (SLA) North Ayrshire
- National Scenic Areas (NSA) Scotland
- Loch Lomond and The Trossachs National Park
- Wild Land Areas (WLA) Scotland
- Gardens and Designed Landscapes (GDL) Scotland

Long Distance Routes

- Arran Coastal Way
- Ayrshire Coastal Path
- Cowal Way
- West Island Way

Zone of Theoretical Visibility (ZTV) to Nacelle (150m)

- 1 - 8 turbines may be visible
- 9 - 16 turbines may be visible
- 17 - 23 turbines may be visible

FIGURE DATA:

This figure has been based on the following data:

Layout file: 0782-D001.shp
Terrain data: T50DTM
Viewer's eye height: 2m above ground level
Calculation grid size: 50m

NOTES:

This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.

The areas shown are the maximum theoretical visibility, taking into account topography.

This visibility map is based on a 'bare earth' model of the landform and does not show any effects of screening from obstacles such as buildings and vegetation.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DTM and has a 50m² resolution.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Metres

Projected Coordinate System: British National Grid

DATE	BY	PAPER	SCALE	QA	REV
APR 2024	RF	A1	1:175,000	RA	-

0782-RE_Working.qdz

DEUCHERAN HILL 2 WIND FARM

FIGURE 10.3

Zone of Theoretical Visibility (ZTV) to Blade Tip With Bare Ground Visibility

KEY

Proposed Deucheran Hill 2 turbines

Distance radii from outermost turbine (5, 10, 15, 20km)

Scoping viewpoints

Landscape Designations

Local Landscape Areas (LLA) Argyll and Bute

Special Landscape Areas (SLA) North Ayrshire

National Scenic Areas (NSA) Scotland

Loch Lomond and The Trossachs National Park

Wild Land Areas (WLA) Scotland

Gardens and Designed Landscapes (GDL) Scotland

Long Distance Routes

Arran Coastal Way

Ayrshire Coastal Path

Cowal Way

Kintyre Way

West Island Way

Zone of Theoretical Visibility (ZTV) to Blade Tip (220m)

1 - 8 turbines may be visible

9 - 16 turbines may be visible

17 - 23 turbines may be visible

FIGURE DATA:
This figure has been based on the following data:

Layout file: 0782-D001.shp
Terrain data: T50DSM
Viewer's eye height: 2m above ground level
Calculation grid size: 50m

NOTES:
This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.

The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.

A digital surface model (DSM) has been derived from OS Terrain 50 height data with the locations of woodland and buildings taken from the OS Open Map Local dataset. Buildings have been modelled with an assumed height of 7.5m and woodland an assumed height of 15m, representing a conservative estimate of average heights within the study area.

The model does not take into account some localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

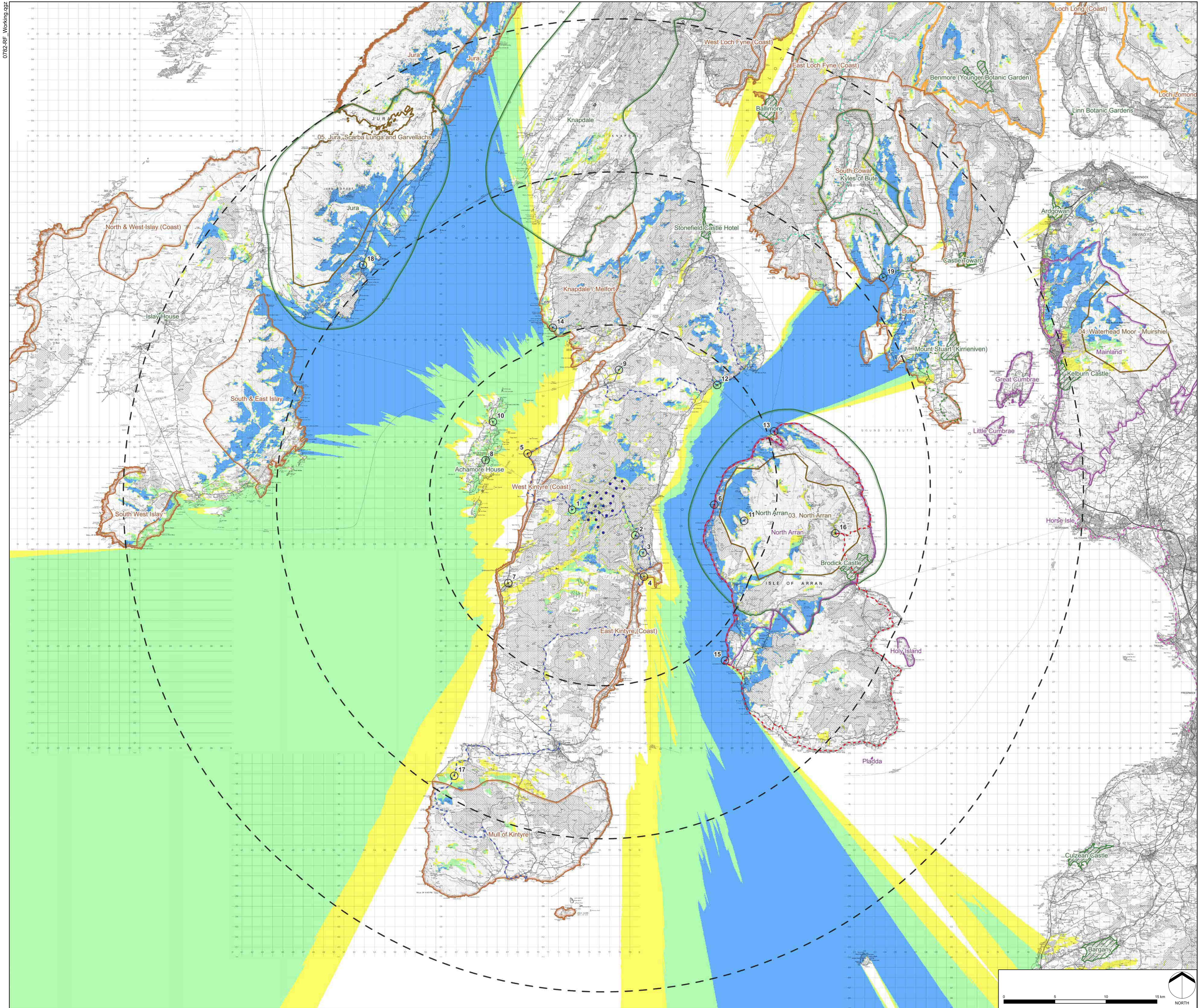
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DEUCHERAN HILL 2 WIND FARM

FIGURE 10.4

Zone of Theoretical Visibility (ZTV) to Nacelle With Screening Effects From Woodland and Settlement



KEY

- Proposed Deucheran Hill 2 turbines
- Distance radii from outermost turbine (15, 30, 45km)
- Scoping viewpoints

Landscape Designations

- Local Landscape Areas (LLA) Argyll and Bute
- Special Landscape Areas (SLA) North Ayrshire
- National Scenic Areas (NSA) Scotland
- Loch Lomond and The Trossachs National Park
- Wild Land Areas (WLA) Scotland
- Gardens and Designed Landscapes (GDL) Scotland

Long Distance Routes

- Arran Coastal Way
- Ayrshire Coastal Path
- Cowal Way
- West Island Way

Zone of Theoretical Visibility (ZTV) to Nacelle (150m)

- 1 - 8 turbines may be visible
- 9 - 16 turbines may be visible
- 17 - 23 turbines may be visible

FIGURE DATA:

This figure has been based on the following data:

Layout file: 0782-D001.shp
Terrain data: T50DSM
Viewer's eye height: 2m above ground level
Calculation grid size: 50m

NOTES:

This drawing is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the Viewshed routine in the Visibility Analysis plugin for QGIS.

The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and buildings.

A digital surface model (DSM) has been derived from OS Terrain 50 height data with the locations of woodland and buildings taken from the OS Open Map Local dataset. Buildings have been modelled with an assumed height of 7.5m and woodland an assumed height of 15m, representing a conservative estimate of average heights within the study area.

The model does not take into account some localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on a derived DSM and has a 50m² resolution.

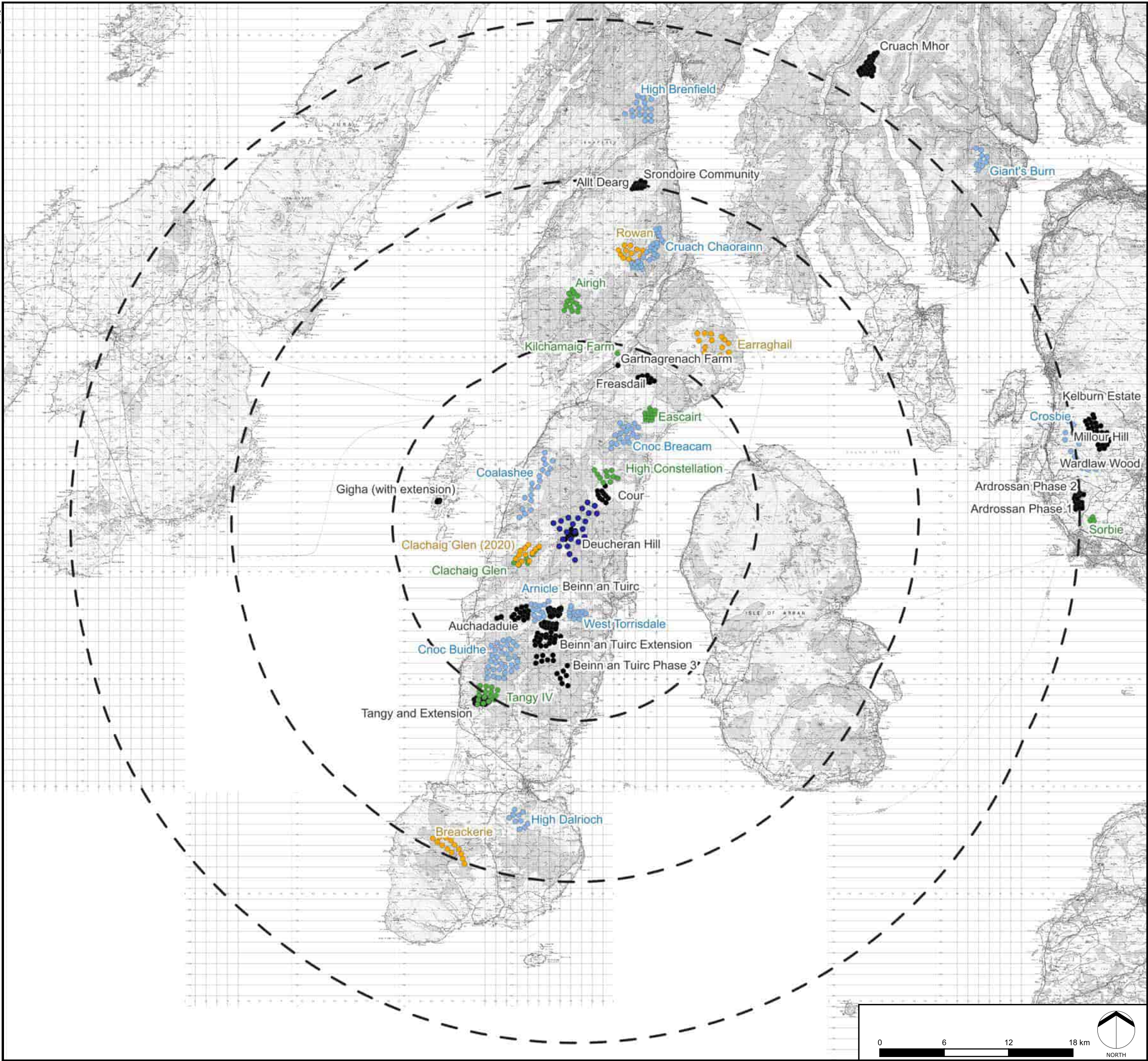
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Projected Coordinate System: British National Grid

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APR 2024	RF	A1	1:175,000	RA	-

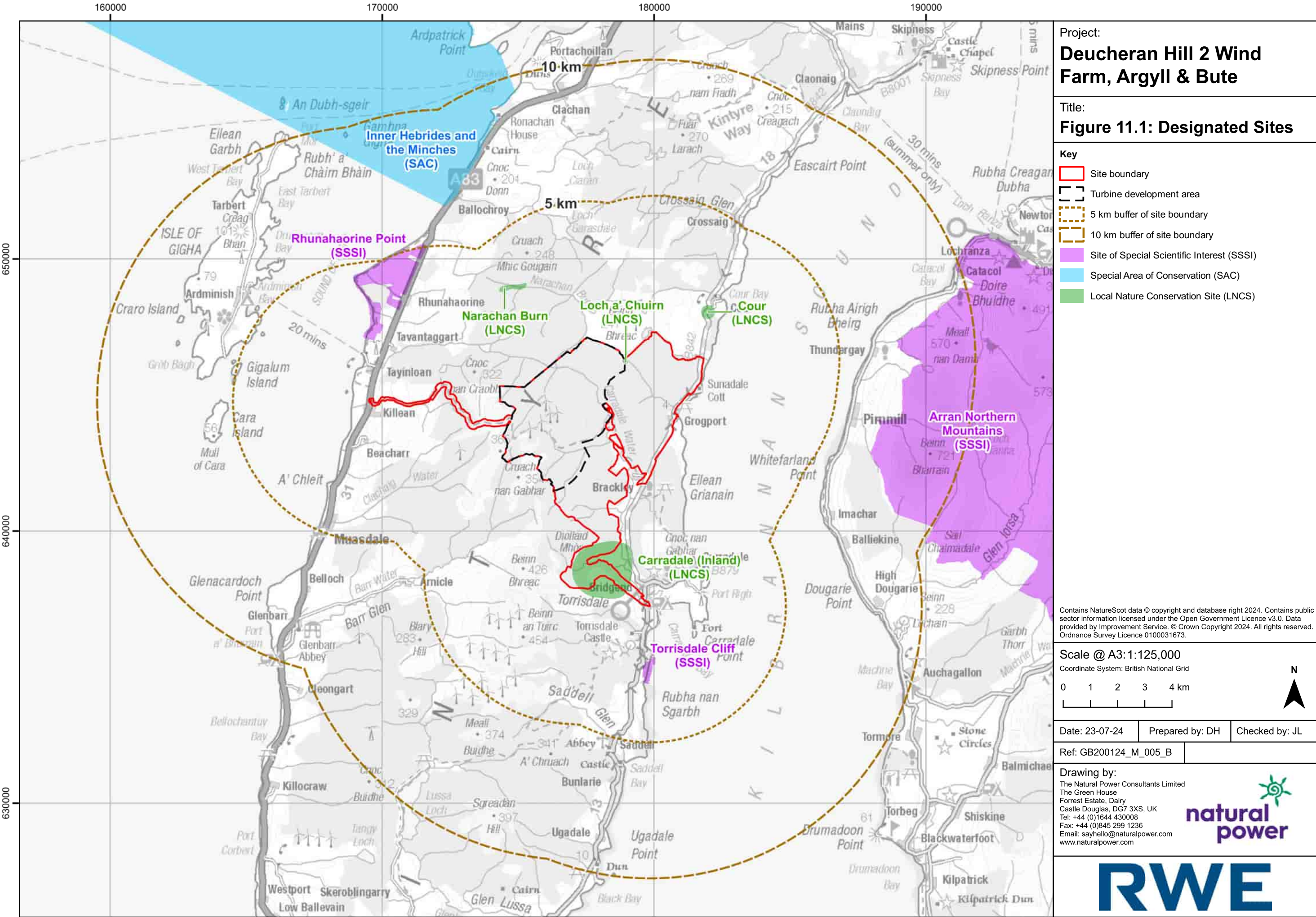
DEUCHERAN HILL 2 WIND FARM

FIGURE 10.5
Cumulative Site Location Plan

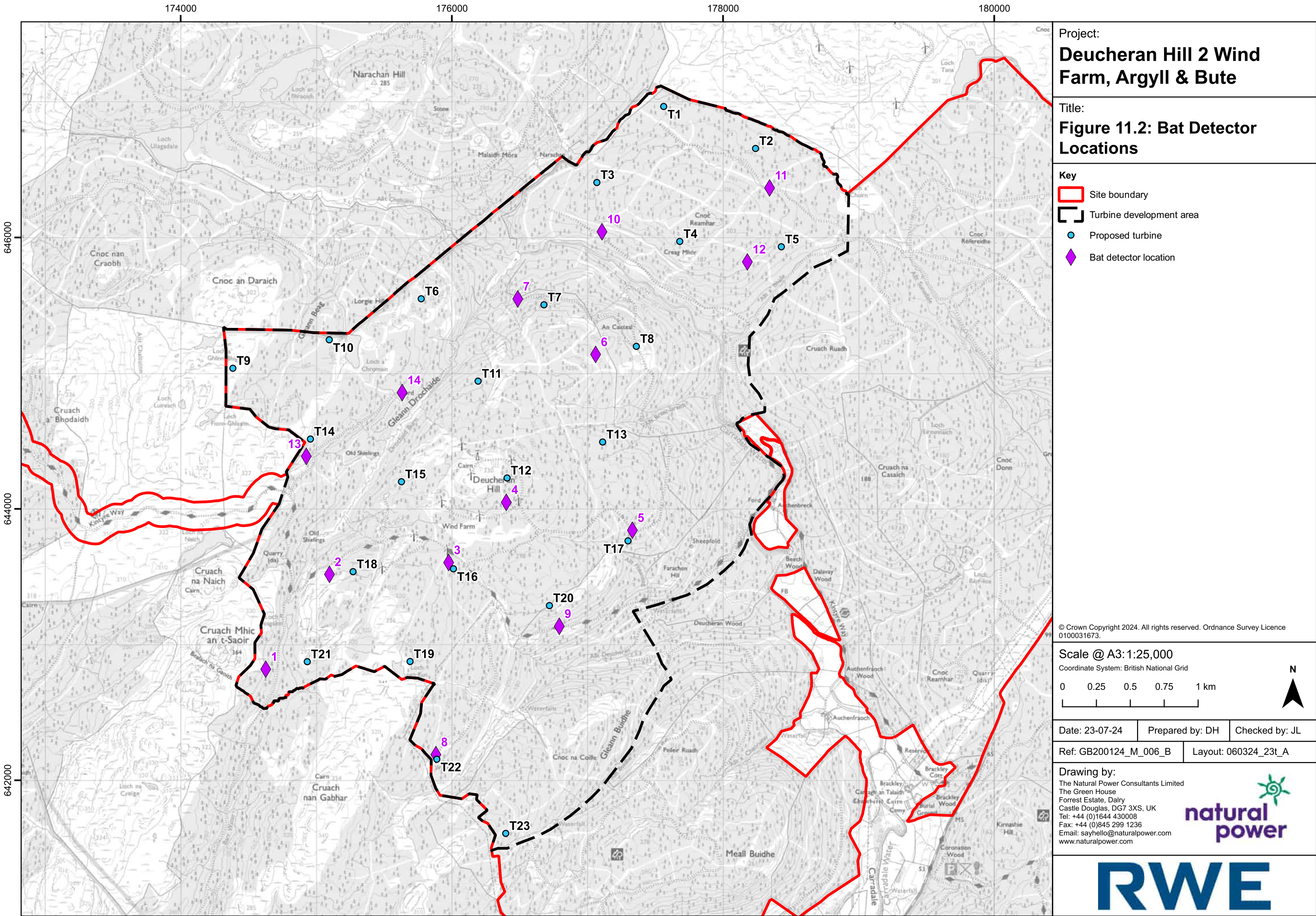


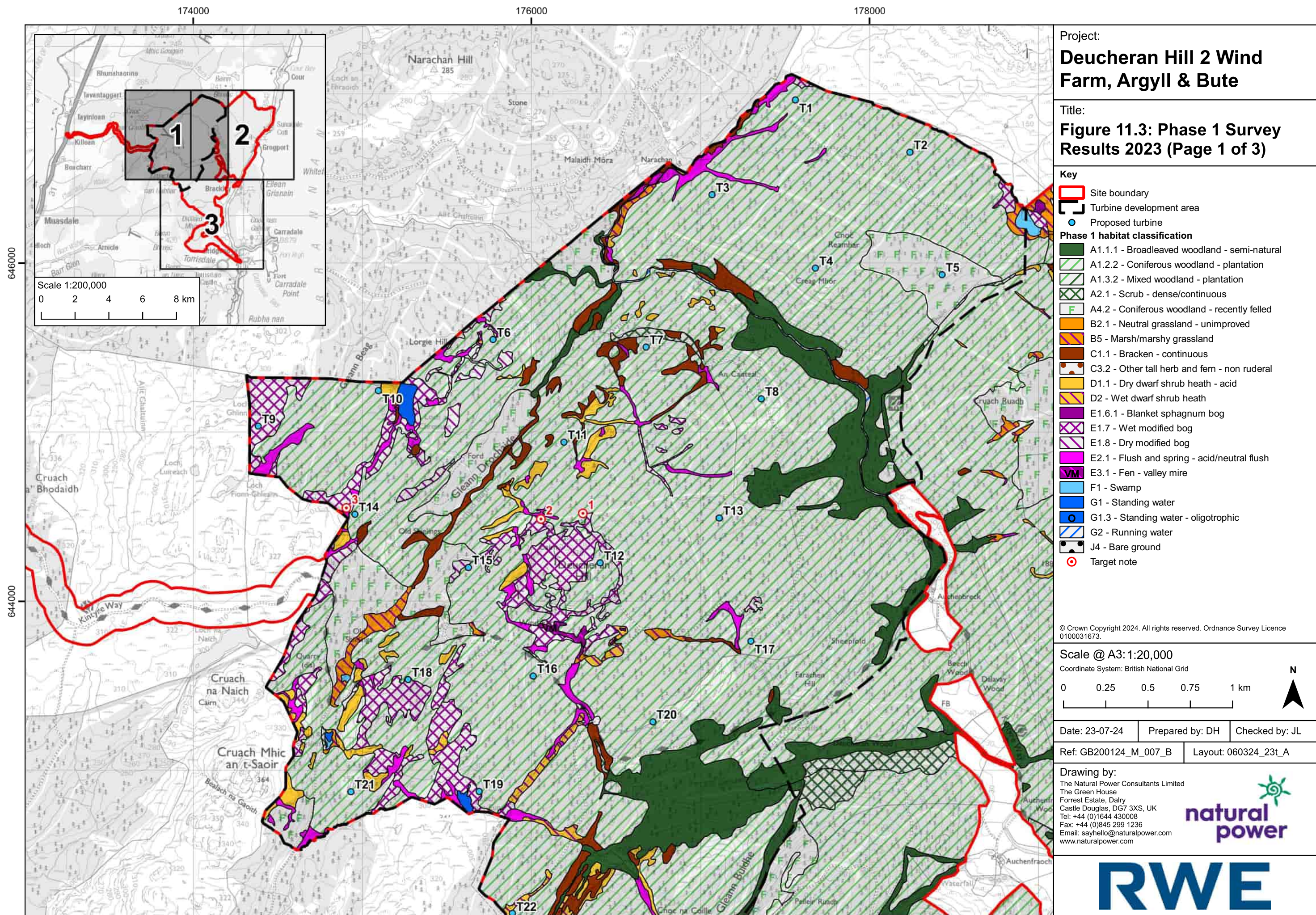
KEY

- Proposed Deucheran Hill 2 turbines
- Distance radii from outermost turbine (15, 30, 45km)
- Culumative Wind Farms**
 - Operational
 - Consented
 - In planning
 - Scoping

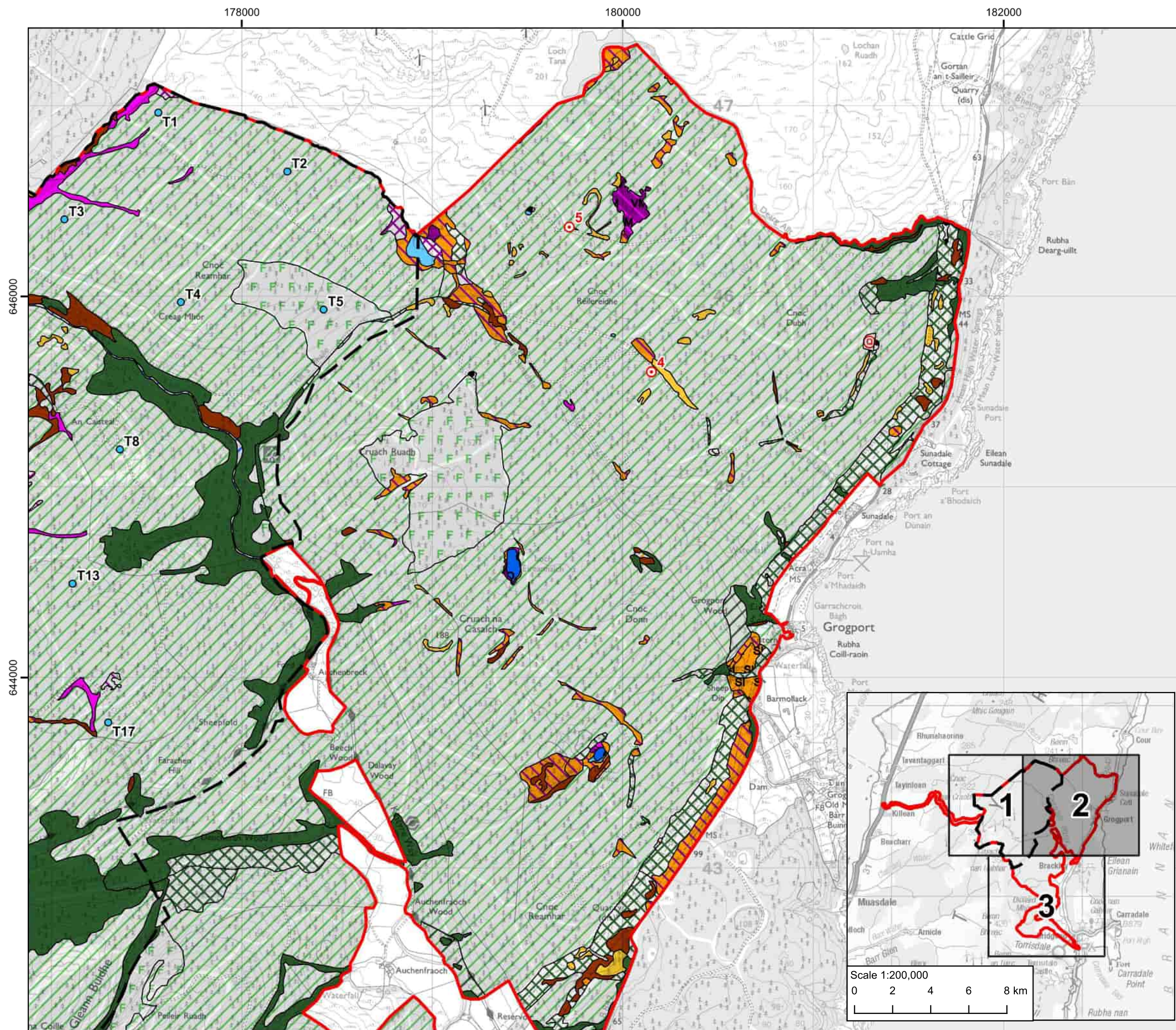


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Project:
Deucheran Hill 2 Wind Farm, Argyll & Bute

Title:
Figure 11.3: Phase 1 Survey Results 2023 (Page 2 of 3)

Key

- Site boundary
- Turbine development area
- Proposed turbine

Phase 1 habitat classification

- A1.1.1 - Broadleaved woodland - semi-natural
- A1.1.2 - Broadleaved woodland - plantation
- A1.2.2 - Coniferous woodland - plantation
- A1.3.2 - Mixed woodland - plantation
- A2.1 - Scrub - dense/continuous
- A4.2 - Coniferous woodland - recently felled
- B1.1 - Acid grassland - unimproved
- B2.1 - Neutral grassland - unimproved
- B2.2 - Neutral grassland - semi-improved
- B5 - Marsh/marshy grassland
- C1.1 - Bracken - continuous
- C3.1 - Other tall herb and fern - ruderal
- D1.1 - Dry dwarf shrub heath - acid
- E1.6.1 - Blanket sphagnum bog
- E1.7 - Wet modified bog
- E1.8 - Dry modified bog
- E2.1 - Flush and spring - acid/neutral flush
- E3.1 - Fen - valley mire
- F1 - Swamp
- G1.3 - Standing water - oligotrophic
- G2 - Running water
- I2.1 - Quarry
- J1.3 - Cultivated/disturbed land - ephemeral/short perennial
- J4 - Bare ground
- Target note

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Scale @ A3: 1:20,000
Coordinate System: British National Grid

0 0.25 0.5 0.75 1 km

N

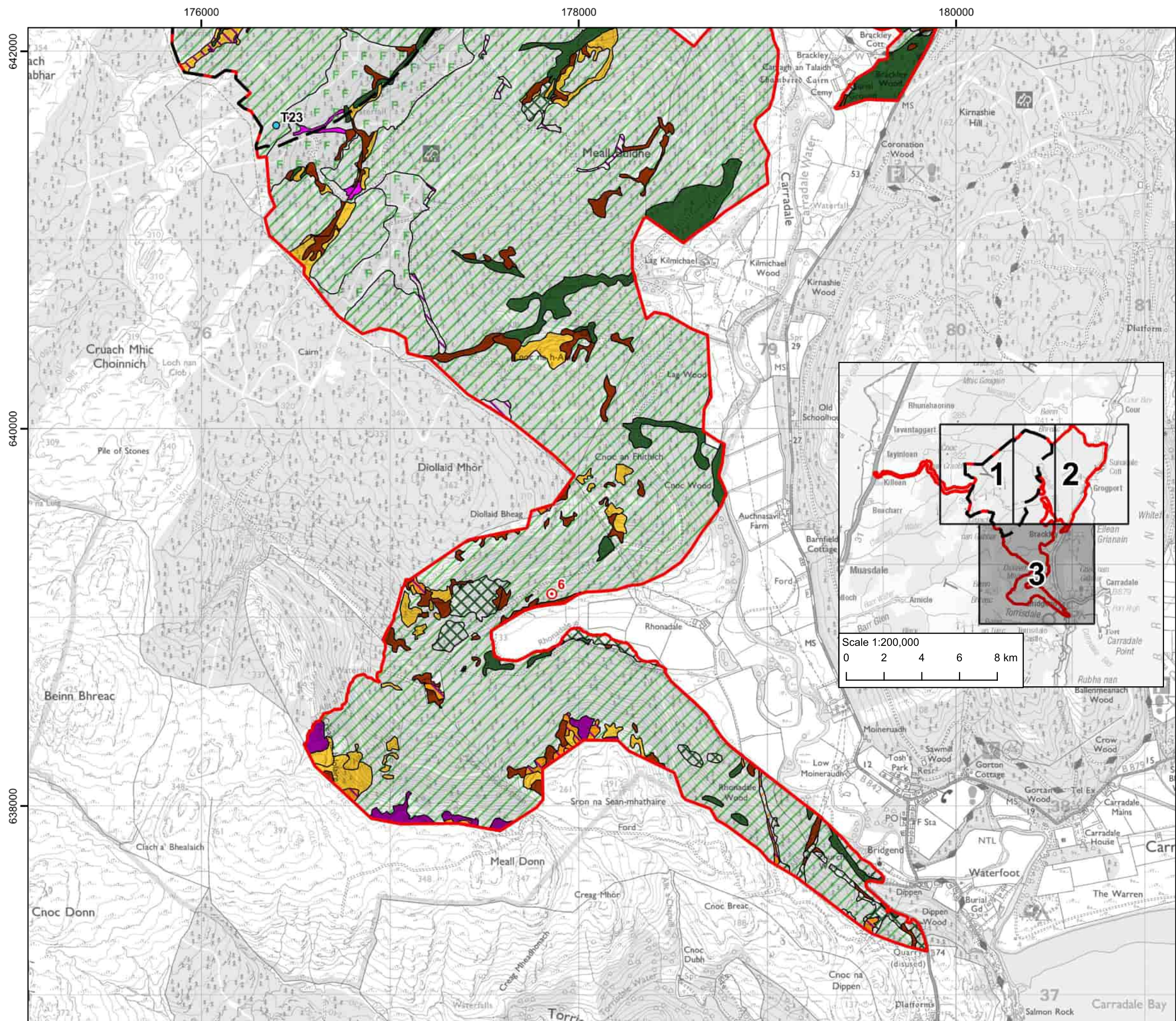
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Project:
Deucheran Hill 2 Wind Farm, Argyll & Bute

Title:
Figure 11.3: Phase 1 Survey Results 2023 (Page 3 of 3)

- Key**
- Site boundary
 - Turbine development area
 - Proposed turbine
 - Phase 1 habitat classification**
 - A1.1.1 - Broadleaved woodland - semi-natural
 - A1.2.2 - Coniferous woodland - plantation
 - A1.3.2 - Mixed woodland - plantation
 - A2.1 - Scrub - dense/continuous
 - A4.2 - Coniferous woodland - recently felled
 - B1.1 - Acid grassland - unimproved
 - B5 - Marsh/marshy grassland
 - C1.1 - Bracken - continuous
 - D1.1 - Dry dwarf shrub heath - acid
 - D2 - Wet dwarf shrub heath
 - E1.6.1 - Blanket sphagnum bog
 - E1.8 - Dry modified bog
 - E2.1 - Flush and spring - acid/neutral flush
 - J1.3 - Cultivated/disturbed land - ephemeral/short perennial
 - J4 - Bare ground
 - Target note

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0 0.25 0.5 0.75 1 km

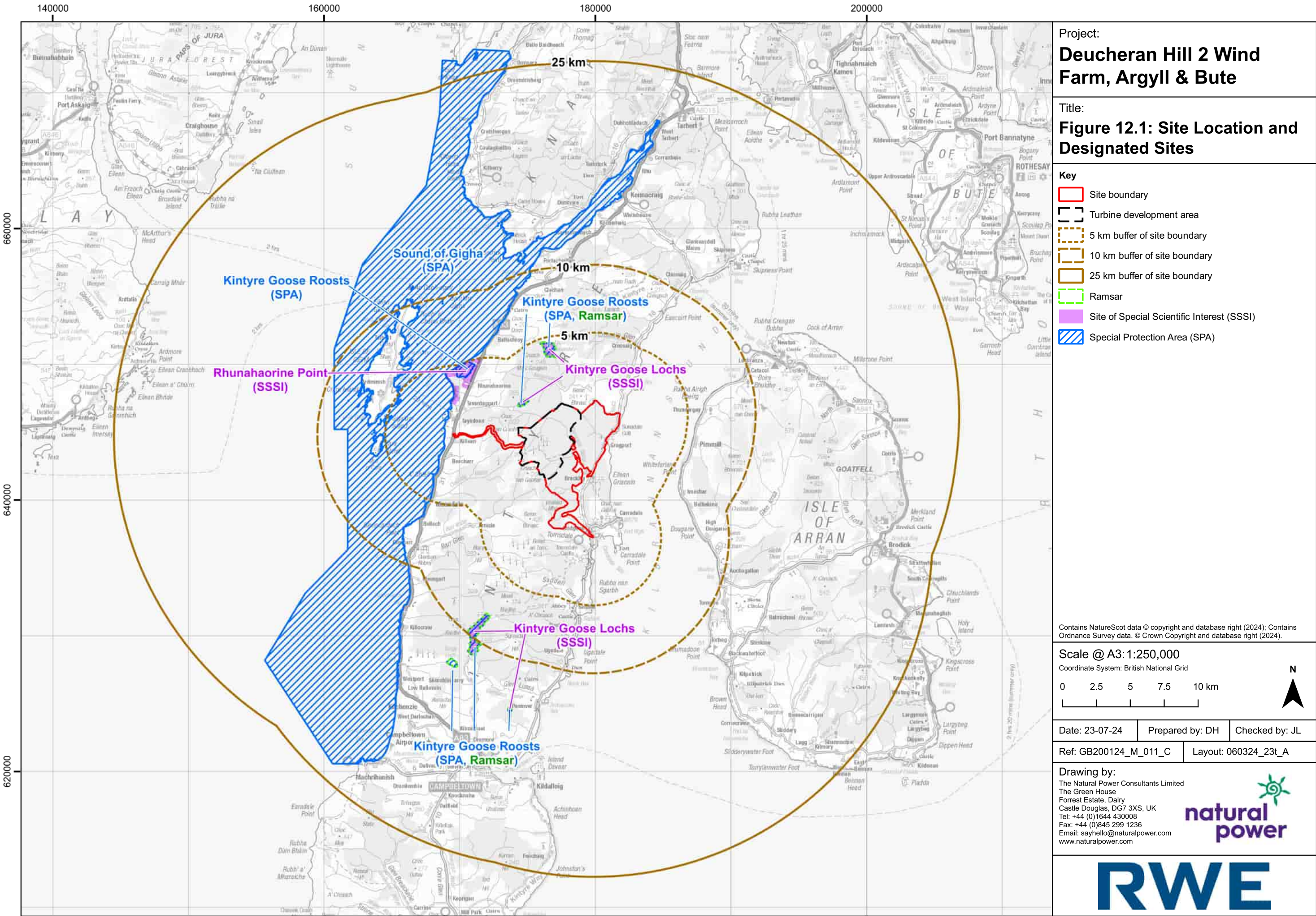
Date: 23-07-24 Prepared by: DH Checked by: JL

Ref: GB200124_M_007_B Layout: 060324_23t_A

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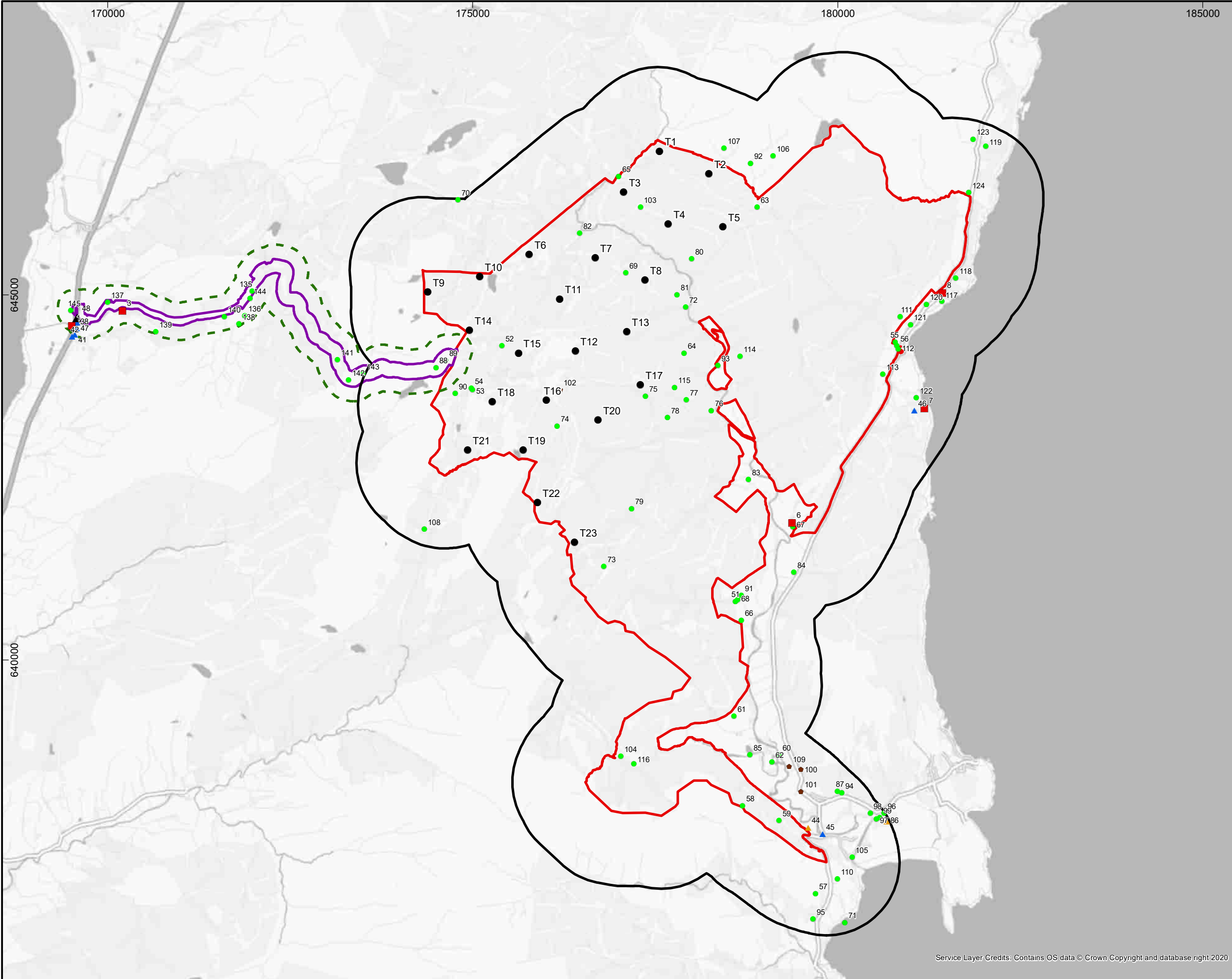


Figure		13.1	
Heritage Assets within the 1km study area for the site and the 200m study area for the access track			
Legend - Site Boundary - Proposed Access Track 1km Study Area 200m Study Area - Turbine Locations - Scheduled Monument - Listed Building- Category A - Listed Building- Category B - Listed Building- Category C - Non-designated Heritage Asset - Event			
FOR			
Natural Power			
Drawn/checked:		LB/SO	
DWG no:		01/27240/Sco/13.1/01	
AOC Project No.:		27240	
AOC Archaeology Group (C) AOC Archaeology Group 2024			
North Arrow			
SYSTEM			
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SCALE			
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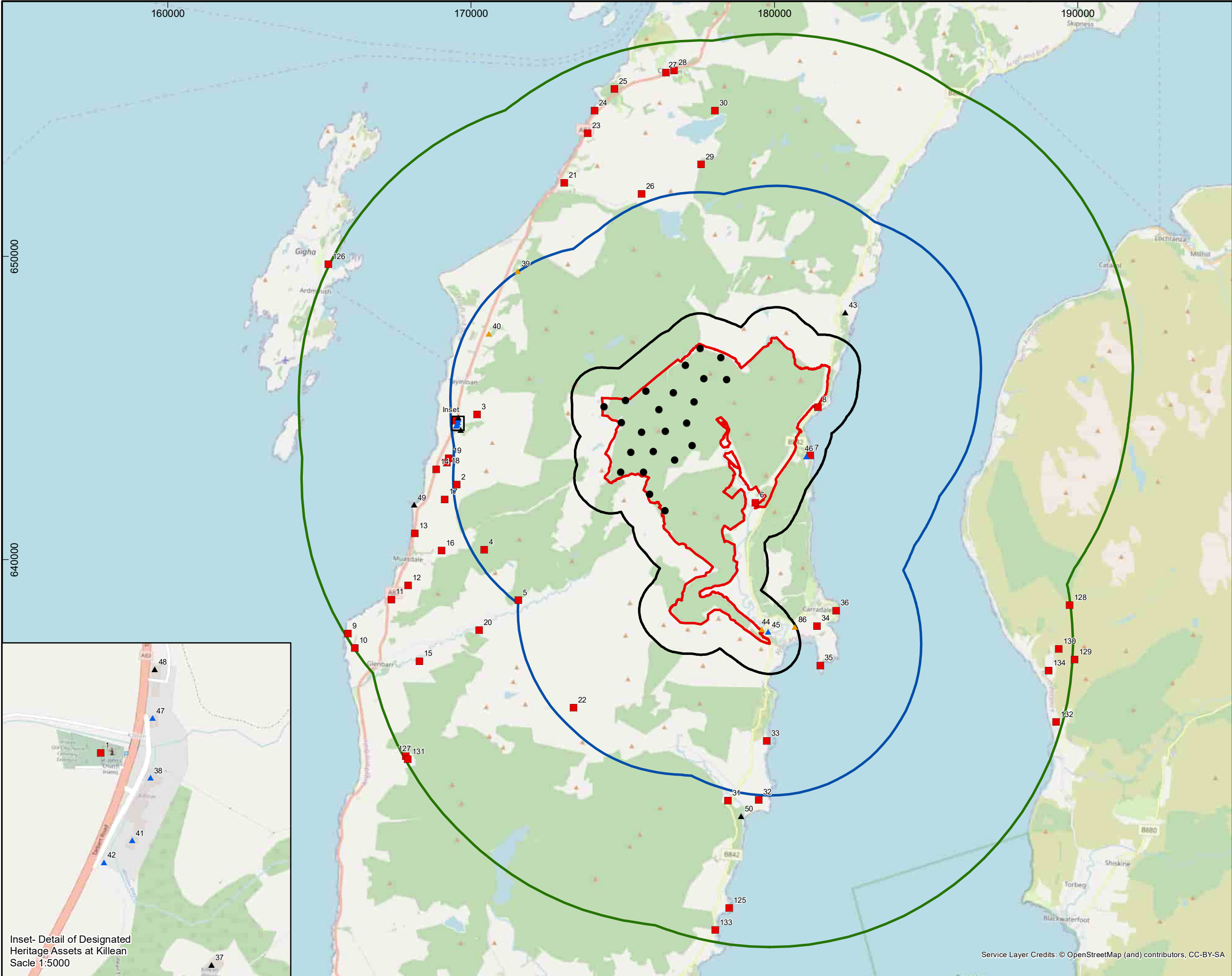


Figure		13.2	
Designated Heritage Assets within the 10km study area			
Legend - Site Boundary - Turbine Locations 1km Study Area 5km Study Area 10km Study Area - Scheduled Monument - Listed Building- Category A - Listed Building- Category B - Listed Building- Category C			
FOR Natural Power			
Drawn/checked:		LB/SO	
DWG no:		01/27240/Sco/13.2/01	
AOC Project No.:		27240	
(C) AOC Archaeology Group 2024			
SYSTEM Coordinate System: British National Grid Projection: Transverse Mercator Datum: OSGB 1936			
SCALE 1:120,000@ A3			
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B. Confidential Ornithology Report

C. Cultural Heritage Gazetteer of Heritage Assets and Events

Gazetteer of Heritage Assets and Events

Asset/Event Number	1
Asset/Event Name	St John's Church: Church, Burial Ground and Carved Stones, Killean
Type of Asset/Event	Church, Burial Ground and Carved Stones
Date and/or Period	MEDIEVAL
Listing No./NRHE Number	SM3030
HER Number	
Status	Scheduled Monument
Easting	169507
Northing	644572
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	The monument comprises the remains of the old parish church of Killean and its burial ground, which contains a variety of carved gravestones. A simple, unicameral church was erected here probably in the second half of the 12th century. It was extended by the addition of a chancel to the E in the early 13th century with an elaborate E window, and a N aisle was added during the 15th century. The church was abandoned in 1770, but the N aisle was reused in the 19th century as the burial aisle of the MacDonalds of Largie. Evidence for this development sequence survives in the upstanding fabric of the building and further information is likely to be preserved beneath the ground. The church is approximately 25m long (E-W) by 13m wide (N-S). The burial aisle contains several fine 14th- to 15th-century tombstones of the Kintyre and Iona schools, as well as an early Christian cross-shaped stone. The burial ground contains a range of interesting 18th-to 19th-century gravestones, such as that commemorating Donald MacKinnon, who died in 1810, which depicts a man ploughing with a two-horse team. There is high potential for the presence of further archaeological remains and carved stones within the burial ground, possibly including evidence for the early phases of the church. The church is located on the W coast of Kintyre overlooking the Sound of Gigha at a height of around 10m above sea level. The monument was first scheduled in 1971, but the documentation did not meet modern standards: the present rescheduling rectifies this. The area to be scheduled is irregular on plan to include the remains described above and an area around them within which evidence relating to the monument's construction, use and abandonment may survive, as shown in red on the accompanying map. The scheduling extends up to but does not include the stone boundary wall. Specifically excluded from the scheduling are any burial lairs in active use. Statement of National Importance: The monument is of national importance because of its inherent potential to make a significant addition to our understanding of the past, in particular the establishment and development of a parish church and burial ground from the 12th century to the later 18th century. The church, though roofless, is largely intact and survives as an impressive ruin retaining noteworthy architectural detail. The range of gravestones within and around the church, of various dates and some with fine carving detail, add to the importance of the monument. There is high potential for the survival of archaeological features and deposits within the burial ground and beneath the church spanning at least six centuries of religious worship and burial. The loss of the monument would significantly affect our ability to understand medieval and later church architecture and religious practice in Argyll and western Scotland.

Asset/Event Number	2
Asset/Event Name	Beachmeanach, Enclosure 700m ESE of

Type of Asset/Event	Enclosure
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3659
HER Number	
Status	Scheduled Monument
Easting	169528
Northing	642467
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	The monument comprises a prehistoric enclosure which is situated on a level terrace in the hillside 700m to the ESE of Beachmeanach farm. The monument is circular in shape, consisting of a stony bank 0.5m high and 2.5m wide, enclosing an area approximately 25m in diameter. There is a gap in the bank on the SW, probably representing the original entrance. The monument is being rescheduled because the original scheduling was wrongly located. The area now to to be scheduled is circular and measures 70m in diameter to include the enclosure and an area around in which associated remains are likely to survive, as marked in red on the accompanying map extract. Statement of National Importance: The monument is of national importance because it is a well-preserved example of a type of later prehistoric enclosed settlement which has the potential to increase considerably our understanding of later prehistoric domestic life and settlement architecture.

Asset/Event Number	3
Asset/Event Name	Killean, Fort NE of
Type of Asset/Event	Fort
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3179
HER Number	
Status	Scheduled Monument
Easting	170201
Northing	644780
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	Some slight remains of a fort are situated about 800m NE of Killean House, and at a height of 75m OD, at the edge of a gorge through which the Killean Burn runs. The defences have comprised three walls, the innermost of which encloses an oval area measuring 30.5m by 20m. At best this wall is represented by a mound of debris 2.4m thick and 1.0m high, but a few outer facing-stones are visible in situ on the E side. Although the second and third walls are fragmentary, the position of the entrance to the fort is marked by broad gaps in both, and by a corresponding gap in the innermost wall. The medial wall probably extended from edge to edge of the gorge, but the outer wall seems to have been simply a hornwork designed to give extra protection to the entrance. The interior of the fort is overgrown with trees and bushes. RCAHMS 1971, visited 1966.

This small oval fortification is situated on the S edge of the gorge of the Killeen Burn and measures only 30m from N to S by 20m transversely (0.05ha) within a wall reduced to little more than a thin band of rubble. A second wall lies concentrically on the NW quarter, where a third wall possibly formed a small annexe or hornwork outside a gap in the inner defences that probably marks the position of the entrance. The interior is featureless - Information from An Atlas of Hillforts of Great Britain and Ireland – 23 May 2016. Atlas of Hillforts SC2267

Asset/Event Number	4
Asset/Event Name	Low Clachaig, Cup Marked Boulders 915m E of
Type of Asset/Event	Rock Art
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM4352
HER Number	
Status	Scheduled Monument
Easting	170441
Northing	640313
Parish	Killeen and Kilchenzie
Council	Argyll and Bute
Description	The boulder, which is now split, bears cup and ring marks on both halves. The larger part measures 2.4m by 2.1m and bears 54 cupmarks up to 0.1m in diameter and 0.38m deep. Three cups have single rings round them and three have double rings. Two pairs of cups are joined by short channels. The smaller half measures 2.4m by 1.5m and bears thirty nine cupmarks, six of which are surrounded by incomplete rings. The marks are somewhat weathered. Kintyre contains one of the heaviest concentrations of cup and ring markings in Scotland. Most of them are on boulders on the hills overlooking the west coast. Within this spread there are occasional concentrations. In the concentration around Low Clachaig the boulders lie on the sides of small valleys to the north of the split boulder, and to the south they lie on a west-pointing shoulder of ground. In all, eight boulders are known, in an area measuring roughly 4km by 1km and triangular in shape with its point to the south. Statement of National Importance: The monument is of national importance because the cup and ring marks are the best example of their class in Kintyre. Nationally they fall below guardianship standard, but are exceptionally fine. The area in which they lie contains other cupmarked rocks and in addition to their intrinsic importance the Low Clachaig cupmarked boulders are of national importance as part of an extensive grouping on the W coast of Kintyre, and as part of a local group of some eight cup marked boulders.

Asset/Event Number	5
Asset/Event Name	Garvalt, Dun 500m SW of
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3740
HER Number	

Status	Scheduled Monument
Easting	171567
Northing	638660
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	The monument comprises a later prehistoric or early historic dun with adjacent later remains including field banks and a possible kiln, sited on the hill slope N of the Barr Water, 500m SW of the ruined steading known as Garvalt. The dun encloses an area approximately 6m in diameter, with walls of stone blocks. A later field bank adjoins the dun on the E, running at right angles to the slope. To the west of the dun is a substantial stone-built structure, possibly a corn-drying kiln. There are further remains of structures and enclosures in the vicinity of the dun, possibly remains of shielings or more permanent settlement. The monument is being rescheduled because the original scheduling was wrongly sited. The area now to be scheduled measures 100m NNW-SSE by 100m, to include the dun and the later settlement and field system remains which survive around it, as shown in red on the accompanying map extract. Statement of National Importance: The monument is of national importance because it is an example of a multi-period settlement complex which has the potential to increase considerably our understanding both of later prehistoric or early historic domestic life and settlement architecture, and of medieval or later rural domestic life and land use.

Asset/Event Number	6
Asset/Event Name	Carragh an Talaidh, Chambered Cairn, Brackley
Type of Asset/Event	Chambered Cairn
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM189
HER Number	
Status	Scheduled Monument
Easting	179375
Northing	641876
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	The remains of a Clyde group chambered cairn which was excavated by J G Scott in 1952-3, the cairn material having been almost entirely removed between 1845 and 1930. At the time of excavation the remains were roughly square in plan, about 28ft across and 3ft in maximum height, the shape being due to ploughing. The cairn material is mainly boulders, now largely grass-covered. Since excavation the site has been partly filled in, but the main stones of the chamber and portal have been left visible. The entrance, facing east, is between two portal stones, 1ft 9ins apart, flanking a passage 3ft long. The north portal, a huge slab 9ft 4ins high by 6ft 3ins wide, is the most prominent feature of the site. No trace of a forecourt facade was found. The excavation showed that the passage walls had been of dry-stone walling, but the two chambers, separated by a low septal slab, were formed of large slabs. The primary burial had been by inhumation in the sandy sub-soil, but this had been sealed and paved in preparation for the reception of a single Early Bronze Age cremation with grave-goods. After this burial a blocking of clay, containing boulders and stone slabs, was inserted into the

chamber and passage and spread out fan-wise in front of the portals. The name 'Carragh an Talaidh', Pillar of the Soothing, presumably applies to the large portal into which at least two dozen nails and screws have been driven. Driving in a nail at midnight was formerly thought to be a cure for toothache.

The remains of this chambered cairn are as described and planned by the preceeding authorities. In the large portal slab, Carragh an Talaidh, are some small pit holes; presumably the nails and screws have long since rusted away.

Asset/Event Number	7
Asset/Event Name	Grogport Old Manse, Dun 180m ENE of
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3649
HER Number	
Status	Scheduled Monument
Easting	181190
Northing	643441
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	A dun is situated about 180m ENE of Grogport Old Manse on a rocky boss (9m OD) at the higher end of a ridge overlooking the shore of Kilbrannan Sound. The summit of the boss is uneven, and the NW and SE ends contain outcrops which rise some 1.2m and 2.4m respectively above a central hollow. At the NE corner of this hollow, a fissure in the rock opens into a narrow sloping cleft which leads into a cave, the mouth of which is at the base of the ridge. The dun wall clings to the edge of the boss and encloses an area measuring 12m by 9.5m. Although the wall has been heavily robbed and no part of the inner face survives, long stretches of the lowest courses of the outer face remain in situ, and at the S corner it stands to a height of 0.8m in six courses. A gap in the middle of the SW side probably marks the site of the original entrance.

Asset/Event Number	8
Asset/Event Name	Sunadale, Dun 275m NE of
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3643
HER Number	
Status	Scheduled Monument
Easting	181440
Northing	645022
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	The monument consists of a small dun on a pillar of rock in dense woodland. The dun is defined by traces of a wall, which survives in places up to 3m in thickness. The wall on the SW

stands to a height of 3 courses and an entrance is visible. Access to the entrance is up a steep slope to the W of the dun. The entrance is about 1m wide at its outer end and has door checks about halfway along its length. The interior of the dun is about 6m SE-NW by 4.5m SW-NE and is featureless.

The area to be scheduled measures 40m in diameter, to include the dun, the rock pillar on which it stands and an area around in which traces of activities associated with the occupation of the dun may survive.

Statement of National Importance:

The monument is of national importance for its potential contribution to an understanding of prehistoric defensive architecture. The dun will also contain important information on the domestic life and farming practices of those who built and lived within it.

Asset/Event Number	9
Asset/Event Name	Glenacardoch, Dun 730m WNW of
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3176
HER Number	
Status	Scheduled Monument
Easting	165942
Northing	637567
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	The monument comprises a prehistoric dun, a coastal defended settlement, likely to date to the Iron Age (between 500 BC and AD 500). It survives as a low, turf-covered, sub-oval wall, which encloses an area of approximately 15m by 10m. The dun occupies the summit of an isolated rock, some 5m in height, which stands on the seashore some 450m S of Glenacardoch Point in west Kintyre. The monument was first scheduled in 1972, but the documentation does not meet modern standards: the present rescheduling rectifies this. The area to be scheduled is irregular on plan and is defined by base of the rock outcrop on which the monument is sited. The scheduled area includes the remains described above, an area around them within which evidence relating to the monument's construction, use and abandonment may survive, and adjoining land essential for the monument's support and preservation, as shown in red on the accompanying map. Statement of National Importance: Intrinsic characteristics- The dun occupies the summit of a substantial rock outcrop on the coastal edge of west Kintyre. The rock itself provides strong natural protection, with sheer or overhanging sides on all but the SSE side, where access can be gained up a steep slope. This was probably where the entrance was sited. The enclosure walling is much reduced, but stands up to 1m high and is 3m wide in places, and can be traced around the summit. The interior is overgrown, but no features are visible. There has been a small landslide on the NE side, which may include occupation material deriving from the dun and its wall. Overall, the footprint of the monument is intact and it survives in reasonably good condition, despite its exposed coastal location and the effects of a localised landslide. There is high potential for the survival of buried deposits and features beneath and beyond the wall and

within the dun interior. Future examination of the dun could provide information about its date, form and construction, and investigation of the interior could contribute to our understanding of how it was used and how this may have changed over time. Buried artefacts and palaeoenvironmental evidence can contribute to our understanding of how people lived and worked, the extent and nature of trade and exchange, and the nature of the agricultural economy in this vicinity. The monument has the potential to contribute to our understanding of the nature of Iron Age settlement and the design and development of these small defended settlements.

Contextual characteristics-

This type of defended settlement characterises much of the coastal occupation of Argyll and Atlantic Scotland in later prehistory. Duns belong to a much broader category of later prehistoric defended settlement, which includes brochs, forts, crannogs, duns and hut circles. Altogether, over 500 later prehistoric settlements are known in Argyll. It is believed that duns represent the remains of the living spaces of small groups or single families. They are largely a coastal phenomenon and they tend to be located on locally high ground, along prominent coastal routes or within easy reach of the coast, as in this case.

This example is interesting because of its position on top of an isolated rock at the high water mark, where it must have been particularly exposed, both to the elements and to seafarers travelling along this coast. It clearly favours a seaward outlook and was undoubtedly visible from the sea, despite its low altitude. Defence and visibility were evidently primary factors for the selection of this location. The dun may have formed part of a network of similar sites along this coastline, some of which would have been inter-visible: the dun at Dun Ach'na h-Atha, for example, is located less than 2km to the NE, and Dun Sheallaidh less than 3km to the SSE. This monument has high potential to contribute to our understanding of the Iron Age occupation of Kintyre and further afield.

National Importance-

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular, the design and construction of later prehistoric, small defended settlements in western Scotland and their place in the wider economy and society. There is good potential for well-preserved archaeological remains surviving within and immediately outside the dun. These buried remains can tell us much about the people who built and lived in the settlement and the connections they had with other groups. The loss of the monument would significantly diminish our future ability to appreciate and understand the occupation of Argyll in the later prehistoric and early historic periods.

Asset/Event Number	10
Asset/Event Name	Barlea, Standing Stone & Cairn
Type of Asset/Event	Standing Stone and Cairn
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM178
HER Number	
Status	Scheduled Monument
Easting	166168
Northing	637084
Parish	Killeen and Kilchenzie
Council	Argyll and Bute
Description	Standing Stone. This stone (D Colville 1930) is situated 18.5m S of the cairn (NR63NE 24) at the N edge of a field overlooking the Allt an Fhraoich from a height of 15m OD. Standing 1.8m in height, it measures 1.2m by 0.3m at the base, with the longer axis aligned NNE and SSW and rises with a gradual taper to a fairly level top, where the breadth is 0.6m and the thickness

0.2m.

This cairn is situated close to a standing stone (NR63NE 18) at the northern edge of a cultivated field; it overlooks the left bank of the Allt an Fraoich from a height of 15m OD. As it exists today, the cairn takes the form of a low mound of stones which covers an area measuring about 21.5m by 7.5m and its present size may be to some extent due to the dumping of stones cleared from the adjacent field. A number of large boulders are visible round the E arc of the perimeter and may be part of an original kerb. Approximately in the centre of the cairn there are two large slabs, each measuring about 1.2m in length and 0.23m in thickness; one of them is set on edge and projects 0.3m above ground, while the other is lying flat. Near the edge of the cairn there is a third slab, measuring 0.76m both in length and breadth and 0.3m in thickness. These three slabs evidently belonged to a cist which was discovered in the cairn many years ago.

Asset/Event Number	11
Asset/Event Name	Dun Ach'na h-Atha
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3226
HER Number	
Status	Scheduled Monument
Easting	167382
Northing	638678
Parish	Killeean and Kilchenzie
Council	Argyll and Bute
Description	Dun, Dun Ach'na h-Atha. This dun is situated on the brink of a cliff overlooking the S end of the Muasdale machair from a height of 30m OD. It appears to have been oval on plan and to have measured about 15m by 13.5m internally, but stone-robbing has reduced the wall to a thick band of rubble which is spread to a width of 6m. A considerable stretch of the outer face of the wall, for which large boulders are employed, protrudes through the debris on the S; for the most part only the lowest course survives, but in a few places the wall stands to a height of 1.1m in three courses. The entrance, which faces E, is 0.9m in width. The outer corner-stone on the S side of the passageway is still in situ, and a single facing-stone is visible on the N side.

Asset/Event Number	12
Asset/Event Name	Carragh Muasdale, Standing Stone 225m N of South Muasdale
Type of Asset/Event	Standing Stone
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM188
HER Number	
Status	Scheduled Monument
Easting	167926
Northing	639150
Parish	Killeean and Kilchenzie
Council	Argyll and Bute

Description	Standing Stone. On a ridge of arable ground there is a prominent standing stone incorporated in a stone wall. It measures 1.0m by 0.5m at the base and 3.0m in height; the longer axis is aligned N and S. The sides rise almost vertically to a height of 2.4m before curving inwards to a rounded top.
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Asset/Event Number	13
Asset/Event Name	Dun Domhnuill, Dun 70m NNE of Seafield
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3092
HER Number	
Status	Scheduled Monument
Easting	168152
Northing	640868
Parish	Killean and Kilchenzie
Council	Argyll and Bute

Description	The monument comprises a prehistoric defended settlement of a type known as a dun, likely to date to the Iron Age (between 500 BC and AD 500). The dun survives as a low, roughly oval-shaped enclosure, with traces of internal features. It measures approximately 15m NW-SE by 7.5m transversely, with its entrance and approach from the SW side. It occupies the higher ground of a substantial, locally distinctive knoll, at around 15m above sea level, in an area of mixed rough grazing and unimproved land. It is located on the coastal strip of west Kintyre, between the shoreline some 50m to the W and a N-S trending ridge which rises immediately E of the dun. The monument was first scheduled in 1971, but the documentation does not meet modern standards: the present rescheduling rectifies this.
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The area to be scheduled is irregular on plan and is defined by the base of the rock outcrop on which the monument is sited, and includes an area extending W and SW of the outcrop. The scheduled area includes the remains described above, an area around them within which evidence relating to the monument's construction, use and abandonment may survive, and adjoining land essential for the monument's support and preservation, as shown in red on the accompanying map. Specifically excluded from the scheduling are the above-ground elements of a post-and-wire fence and a drystone wall to the immediate N of the outcrop, to allow for their maintenance.

Statement of National Importance:

Intrinsic characteristics-

The dun enclosure occupies most of the summit of a substantial rock outcrop. The outcrop is a naturally defensive location with steep or sheer sides to the N and E, but more sloping ground to the S and W, where the approach and entrance to the dun is likely to have been. The outline of the enclosure wall is clearly discernible beneath the turf and vegetation cover, together with intermittent traces of the outer and inner faces. Around the SW and parts of the W side, however, the edge of the knoll has collapsed, taking with it part of the wall; this debris is likely to contain displaced archaeological material from the construction and use of the dun. The interior of the dun is uneven, but the low outline of a sub-rectangular structure, measuring approximately 5.5m by 3m, has been recorded previously, which may be a secondary feature.

Overall, the footprint of the monument is intact and it survives in reasonably good condition, despite the relatively slight appearance of the perimeter wall and its partial collapse. There is high potential for the survival of buried deposits and features beneath and beyond the wall and within the dun interior. Future examination of the dun could provide detailed information

about its date, form and construction, and investigation of the interior could contribute to our understanding of how it was used and how this may have changed over time. Buried artefacts and palaeoenvironmental evidence can contribute to our understanding of how people lived and worked, the extent and nature of trade and exchange, and the nature of the agricultural economy. The monument has the potential to contribute to our understanding of the nature of Iron Age settlement and the design and development of this type of prehistoric defended enclosure.

Contextual characteristics-

This type of defended settlement characterises much of the coastal occupation of Argyll and Atlantic Scotland in later prehistory. They belong to a much broader category of later prehistoric settlement, which includes brochs, forts, crannogs, duns and hut circles. Altogether, over 500 later prehistoric settlements are known in Argyll. It is believed that duns represent the remains of the living spaces of small groups or single families. They are largely a coastal phenomenon and tend to be located on locally high ground, along prominent coastal routes or within easy reach of the coast, as in this case.

This example is interesting because of its position right on the west coast of Kintyre, with a seaward outlook and clearly visible from the sea. Combined with its prominent knoll-top position, this suggests that defence and visibility were chief among the factors which determined its siting here, rather than proximity to agricultural land, for instance. Dun Domhnuill is one of a series of duns along this coast, with at least another four recorded within less than 2.5km to the N and S. They may have formed part of a network of broadly similar intervisible sites along the coastline. Dun Domhnuill has high potential to contribute to our understanding of the Iron Age settlement of Kintyre and further afield.

National Importance-

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular, the design and construction of later prehistoric, small defended settlements in western Scotland, and their place in the wider economy and society. There is good potential for well-preserved archaeological remains surviving within and immediately outside the dun. These buried remains can tell us much about the people who built and lived in the settlement and the connections they had with other groups. The loss of the monument would significantly diminish our future ability to appreciate and understand the occupation of Argyll in the later prehistoric and early historic periods.

Asset/Event Number	14
Asset/Event Name	Red Cove, Dun 215m N of Beachmenach
Type of Asset/Event	Dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3291
HER Number	
Status	Scheduled Monument
Easting	168851
Northing	642969
Parish	Killeen and Kilchenzie
Council	Argyll and Bute
Description	The monument comprises a prehistoric dun likely to date to the Iron Age (between 500 BC and AD 500), together with a shallow cave at the base of the rock on which the dun is sited. The dun survives as the remains of a low, turf-covered wall enclosing an oval area measuring around 15m NE to SW by 9m transversely. It is situated on the coastal strip of west Kintyre at 15m above sea level, on the summit of a distinctive knoll of red sandstone, which rises to a height of 4.5m above the surrounding coastal plain. The rock is located on the shoreline in an

area of rough grazing and scrub, and is connected to higher ground on the E by a narrow col. The monument was first scheduled in 1973, but the documentation does not meet modern standards: the present rescheduling rectifies this.

The area to be scheduled is irregular on plan, defined by the base of the rock on which the monument is sited. The scheduled area includes the remains described above and an area around them within which evidence relating to the monument's construction, use and abandonment may survive, as shown in red on the accompanying map. Specifically excluded from the scheduling are the above-ground elements of an electricity transmission support pole, an associated cable and a wooden fence that closes off the cave in the W side of the rock, to allow for their maintenance.

Statement of National Importance:

Intrinsic characteristics-

The dun occupies the summit of a prominent knoll which has steep or sheer sides on all but its NE side, where the approach and entrance may have been located. Traces of walling are visible around the E, N and S of the summit in the form of a band of rubble and boulders, and some external facing-stones can be seen on the W side. The low outline of a secondary sub-rectangular building is visible in the interior. Otherwise, the interior is uneven and without visible features. Given the exposed setting of the dun, it is likely that soil erosion has taken place on the knoll which suggests that occupation and midden material is likely to have been dispersed on the approach slope and at the foot of the knoll.

A shallow cave occurs at the base of the W side of the knoll, measuring around 7m across and 3.5m deep. A quantity of human bones and sea shells was recovered in 1845, reportedly from several apertures in the back wall of the cave formed by water action on faults in the sandstone. The discovery of sea shells might indicate occupation, but the dating, duration of use and function of the cave and its contents are unknown.

Overall, the footprint of the monument is intact and it survives in reasonably good condition, despite the relatively slight appearance of the enclosing wall. There is high potential for the survival of buried deposits and features beneath and beyond the wall and within the dun interior, as well as beneath the floor of the cave. Future examination of the dun could provide information about its date, form and construction, and investigation of the interior could contribute to our understanding of how it was used and how this may have changed over time. Buried artefacts and palaeoenvironmental evidence can contribute to our understanding of how people lived and worked, the extent and nature of trade and exchange, and the nature of the agricultural economy in this vicinity. Future investigation of the cave could ascertain the date of its use as a repository for human remains and the date, nature and duration of any occupation. The monument has the potential to contribute to our understanding of the nature of Iron Age settlement, the design and development of these small defended settlements, and the use of natural caves in antiquity.

Contextual characteristics-

The dun is a type of defended settlement that characterises much of the coastal occupation of Argyll and Atlantic Scotland in later prehistory. Duns belong to a much broader category of later prehistoric settlement, which includes brochs, forts, crannogs, duns and hut circles. Altogether, over 500 later prehistoric settlements are known in Argyll. It is believed that duns represent the remains of living spaces of small groups or single families. They are largely a coastal phenomenon and tend to be located on locally high ground, along prominent coastal routes or within easy reach of the coast, as in this case.

Researchers have suggested that duns are often positioned for their seaward views, their visibility to seafarers, and sometimes their inter-visibility. This example undoubtedly favours a seaward outlook and would have been visible from the sea. It may have formed part of a network of broadly contemporary, similar sites along the western coastline of Kintyre: for example, Dun Beacheaire lies only some 400m to the NE, and Dun Domhnuill lies just over 2km to the S. This monument has high potential to contribute to our understanding of the Iron Age occupation of Kintyre and further afield. The cave is an intriguing and rare feature of unknown date and function, but adds to the value of the monument overall.

National Importance-

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular, the design and construction of later prehistoric, small defended settlements in western Scotland, and their place in the wider economy and society. There is good potential for well-preserved archaeological remains to survive within and immediately outside the dun. These buried remains can tell us much about the people who built and lived in the settlement and the connections they had with other groups. The cave has the potential to add to the time-depth of the site and to enhance our understanding of the use of natural caves in antiquity. The loss of the monument would significantly diminish our future ability to appreciate and understand the occupation of Argyll in the later prehistoric and possibly other periods.

Asset/Event Number	15
Asset/Event Name	An Dunan,dun,WSW of Auchadaduie
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3111; NR63NE 16
HER Number	
Status	Scheduled Monument
Easting	168301
Northing	636653
Parish	Killeean and Kilchenzie
Council	Argyll and Bute
Description	This dun is situated in trees at a height of 45m OD; it occupies a strong natural position on the western tip of a narrow promontory between the left bank of the Barr Water and a small unnamed tributary. The dun probably measured about 15m by 12m internally, but no trace of the enclosing wall survives on the NW, probably as a result of the erosion of the cliff face which falls abruptly to the river on this side. Elsewhere the wall is represented by a band of stony debris, up to 1.2m in height and some 4.6m in thickness, in which a few external facing-stones are visible at the SW end. No entrance can now be seen and, apart from a ruinous wall of no great age, the interior is featureless. RCAHMS 1971, visited 1960. The dun is as described and planned by RCAHMS. Surveyed at 1:10,000. Visited by OS (JB) 8 December 1977.

Asset/Event Number	16
Asset/Event Name	Dunan Muasdale,dun
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3223; NR64SE 28
HER Number	

Gazetteer of Heritage Assets and Events

Status	Scheduled Monument
Easting	169038
Northing	640295
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	Dun, Dunan Muasdale. On a rocky knoll at a height of 90m OD, there is an almost circular dun measuring 13.5m by 12m internally. The wall has consisted of a core of stones faced on either side with massive boulders, and has measured 4m in thickness. The position of the entrance is not apparent. RCAHMS 1971, visited 1960. Dunan Muasdale (name verified) is as described and planned by RCAHMS. Surveyed at 1:2500. Visited by OS (J B) 6 December 1977.

Asset/Event Number	17
Asset/Event Name	North Beachmore, rock art panels 220m E, 350m E and 385m ESE of
Type of Asset/Event	Prehistoric ritual and funerary: cupmarks or cup-and-ring marks and similar rock art
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM13295
HER Number	
Status	Scheduled Monument
Easting	169131
Northing	641988
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	The monument comprises an earthfast monolith and two rock outcrops in close proximity, all decorated with prehistoric rock art motifs. The motifs were carved probably during the early prehistoric period, between about 3500 BC and 2500 BC. The monolith now serves as the N side of a gateway between two pasture fields. It measures roughly 0.9m wide by 0.3m deep at its base, but tapers towards the top. It stands 1.5m high and now leans at an angle of 45 degrees, with the decorated surface facing SW. Over 50 cup-marks and variations of cup-mark designs have been recorded. The two outcrops are visible at ground level as small areas of exposed rock surface within pasture land. The easternmost is 1.5m long by 0.9m wide and is decorated with at least 12 cup-marks. The visible area of the second outcrop, 120m to the W, measures 1.2m by 1.2m and is decorated with at least eight cup-marks. The monolith and rock outcrops are located on the S and N sides respectively of the Allt Achapharick burn at approximately 120m above sea level. The former has a predominantly E-facing outlook to the Kintyre ridge, while the two rock outcrops are on the W-facing shoulder of the ridge, overlooking the Sound of Gigha, Jura and Islay beyond. The scheduled area comprises three separate circles, centred on the monolith and rock outcrops respectively. The first, 5m in diameter, is centred on the monolith; the second, 8m in diameter, is centred on the westernmost rock outcrop; and the third, 6m in diameter, is centred on the easternmost rock outcrop. The area to be scheduled includes the remains described above and an area around them within which evidence relating to the monument's construction, use and abandonment may survive, as shown in red on the accompanying map.

Specifically excluded from the scheduling are the above-ground components of a post-and-wire fence adjacent to the monolith.

Statement of National Importance Cultural Significance

The monument's cultural significance can be expressed as follows:

Intrinsic characteristics

The monolith may not be in its original position, but it retains significant intrinsic value because of the relatively good condition of the carved motifs and the overall design represented. Antiquarian accounts suggest it has not been disturbed since at least the 1930s. The unusual design includes: single cup-marks; kidney-shaped carvings formed from small groups of cup-marks; a single cup-mark with a concentric, crescent-shaped channel or part-ring; small groups of cup-marks joined by carved channels; and twin cup-marked designs joined by a single channel to form 'dumb-bell' shapes. The motifs appear to be spatially discrete, with few if any overlapping. The cups are between 35mm and 76mm in diameter and up to 19mm deep. The two ground-level rock outcrops are decorated with single cup-marks of around the same dimensions. Again, the individual cups are spatially discrete and do not overlap with each other.

Despite the vulnerable position of the outcrops at ground level and the location of the monolith at the side of a gateway, all of the carvings are in good condition. Excavations at similar outcropping sites in Argyll have uncovered further buried carvings and associated remains beyond the footprint of the visible panel, including further carvings, artefacts and environmental evidence. This may also be the case here. Any surviving remains associated with the carvings could help us understand the circumstances behind their creation and how the carved panels were used, as well as provide evidence for the nature of the local environment and vegetation at the time the carvings were produced.

In the case of all three panels, any development sequence or phasing of the carvings is difficult to determine because most of the components respect each other spatially. Collectively, however, they represent a significant undertaking by the person or people who carved these designs. As well as their high intrinsic value as decorated monuments, these carved panels can enhance our understanding of the carving process and techniques, the relationship between individual motifs and the overall designs, and the meaning and symbolism of the various motifs and designs.

Contextual characteristics

These three rock art panels are an interesting group, which could help illuminate the place and meaning of rock art in prehistoric life. Researchers have suggested that rock art panels are components of wider ritual landscapes and may have functioned at various levels: from the rock surface and decorated panel as an ancestral space; to the immediate area as a venue for ritual or ceremonial activity; to the wider landscape in which the panels are located and the likely connections they had with other broadly contemporary monuments. In this case, the presence of rock art motifs on a standing stone adds to the interest of this ceremonial monument.

The cup-mark motif is a Scotland-wide phenomenon. This group forms part of an unusually rich, regional concentration of rock art in Argyll, but the monolith includes some relatively uncommon motifs. Locally, these panels are part of a wider contemporary landscape along Kintyre, which includes similarly carved panels on monoliths and outcrops to the N and S, as well as other types of broadly contemporary monument, such as standing stones and chambered cairns (for example, 1.5km to the N). Along the Kintyre ridge alone, there are 25 or more recorded panels bearing similar motifs. Further N, in the wider Kilmartin area, there is an exceptionally dense concentration of over 250 panels. This rich assemblage of rock art indicates something of the significance which these enigmatic designs held for the prehistoric communities inhabiting Argyll. The North Beachmore carvings are located close to a water course and the two outcrops overlook natural land and seaward route-ways. These characteristics are common at rock art sites in Scotland, suggesting that landscape context and

the proximity of natural resources were important factors in the positioning of rock art. Rock art is often sited at the junction of farmland and upland areas and may have marked the boundary between domesticated and wild landscapes. The North Beachmore carvings have the potential to enhance our understanding of the role of rock art in prehistoric life, both for those who carved the designs and those who used the sites.

National Importance

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular, prehistoric rock art studies in Scotland and the context of rock art motifs in archaeological landscapes where contemporary burial and ceremonial monuments survive. The monument has the potential to enhance our understanding of the placing, meaning and function of decorated panels. The loss of the monument would significantly diminish our future ability to appreciate and understand rock art and its place in prehistoric society.

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RCAHMS records the site as NR64SE 6, 7 and 31. The West of Scotland Archaeology Service SMR PIN reference is 3171, 3180 and 3181.

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Asset/Event Number	18
Asset/Event Name	Dun Beachaire,dun
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3143; NR64SE 21
HER Number	
Status	Scheduled Monument
Easting	169203
Northing	643192
Parish	Killeen and Kilchenzie
Council	Argyll and Bute
Description	This dun is situated at a height of 75m OD on a low ridge. Roughly rectangular on plan, it measures 17.5m by 13.5m within a wall 3.0m thick. The core of the wall has been severely robbed, but the outer face, which is composed of large blocks of stone up to 1.2m in length, can be traced intermittently on all four sides, while two short stretches of the inner face are visible on the NW. A gap in the centre of the SE side probably represents the original entrance, and a slab nearby, measuring 1.5m in length and 0.7m in thickness, may have been a lintel-stone. RCAHMS 1971, visited 1965. Dun Beachaire (name verified) is as described and planned by RCAHMS. Surveyed at 1:2500.

Visited by OS (J B) 12 December 1977.

Asset/Event Number	19
Asset/Event Name	Beacharr, standing stone & long cairn
Type of Asset/Event	Prehistoric ritual and funerary: long cairn; standing stone
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM182; NR64SE 14; NR64SE 2
HER Number	
Status	Scheduled Monument
Easting	169266
Northing	643336
Parish	Killeean and Kilchenzie
Council	Argyll and Bute
Description	The remains of the Beacharra chambered long cairn, type- site for the round-bottomed pots which form one of the basic groups of Scottish Neolithic pottery. It stands on the spine of a ridge and was excavated in 1892 and re-examined by Scott in 1959 and 1961. At the present time the cairn is an oval grassy mound measuring about 21m by 15m, but it seems likely that it was originally trapezoidal on plan. The chamber was aligned approximately N and S and most of the stones are still visible protruding above the turf. On either side of the entrance, excavation revealed stretches of the facade which was built of dry-stone walling without orthostats, and was generally straight, although a slight outward curve visible towards the W end was probably repeated on the E. Similar walling was found over a distance of 7.3m on the W side of the cairn, and the platform on which it was set appeared to have been revetted with boulders to ensure stability. The burial-chamber, which was 6.25m long and between 1.2m and 1.5m broad, was divided into four parts, comprising three burial-compartments and a short passage or porch immediately inside the entrance. The entrance had probably been sealed with dry-stone walling, and in front of the facade there was a blocking of boulders and earth. It seems likely that during the final blocking the chamber, too, had been deliberately filled with earth. The burials, which may have been inhumations, had left no trace, but two pots were found in each of the three compartments. RCAHMS 1971, visited 1965; J G Scott 1964; A S Henshall 1972. This chambered cairn is generally as described by the previous authorities. The chamber and kerb no longer survive to the degree illustrated on the plan. Surveyed at 1:2500. (NR 6926 4330) Standing Stone (NR) OS 6" map, (1924) The tallest standing stone in Kintyre, facing east and west and measuring 5.03m high and 1.4m by 0.8m at the base. The top has an irregular profile, falling in successive steps from the peak on the south. RCAHMS 1971. This standing stone is as described by RCAHMS.

Visited by OS (J B) 13 December 1977.

Said to be a 1st millenium BC Lunar Observatory by Thom

A Thom 1971.

Asset/Event Number	20
Asset/Event Name	Blary,dun ENE of
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3077; NR73NW 8
HER Number	
Status	Scheduled Monument
Easting	170278
Northing	637679
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	OS 6" map, Argyllshire, 2nd ed., (1924)

On a rocky knoll (75m OD) there is an oval dun which measures internally about 21.5m by 15m. The debris of the wall, which was probably some 4.3m thick, forms a low bank round the margin of the summit area of the knoll and a scree-like spread down the S and E flanks. Two short stretches of the outer face are visible, on the S and E respectively, and the entrance is indicated by a gap in the wall debris on the W.

RCAHMS 1971, visited 1960.

The dun is as described and planned by RCAHMS (1971).

Resurveyed at 1:10 000.

Visited by OS (NKB) 30 January 1978.

Asset/Event Number	21
Asset/Event Name	Ballochroy,three standing stones & cist 400m NE of
Type of Asset/Event	Prehistoric ritual and funerary: cist; standing stone
Date and/or Period	PREHISTORIC- BRONZE AGE
Listing No./NRHE Number	SM175; NR75SW 2; NR75SW 3
HER Number	
Status	Scheduled Monument
Easting	173078
Northing	652421
Parish	Kilcalmonell
Council	Argyll and Bute

Description

OS 6" map, (1924)

This cist is constructed of five slabs, four forming the sides and ends, while the fifth is a massive cap-stone 2.1m x 1.5m x 0.3m. Oriented NE-SW, it measures internally 1.7m x 0.8m x 0.6m. Much of the cist is above ground level.

That it was formerly covered by a large cairn is evident from a 17th century sketch (Campbell and Thomson 1963) and from former place-names, but no certain cairn material is now visible.

It is hardly fortuitous that this cist is in close proximity to standing stone NR75SW 3, and on the same alignment; possibly all four monuments are contemporary.

RCAHMS 1971, visited 1961; J L Campbell and D Thomson 1963.

As described by RCAHMS.

Surveyed at 1/10 000

Visited by OS (D W R) 13 August 1973.

Field Visit (May 1961)

RCAHMS Inventory; Argyll Volume 1 - Kintyre

Cist and Standing Stones, Ballochroy.

In a level field 400 m NE. of Ballochroy farmhouse, and at a height of a little over 30 m O.D., there is a remarkable group of monuments consisting of a stone cist and three standing stones (Pl. 10A, B), all situated in a straight line running approximately NE. and SW.

The cist lies at the SW. end of the alignment and is constructed of five slabs, four of which form the sides and ends while the fifth is a massive cap-stone measuring 2.1 m by 1.5 m and 0.3 m in thickness. The internal dimensions are 1.7 m in length by 0.8 m in average breadth and about 0.6 m in depth; the longer axis is aligned NE. and SW. Much of the cist is visible above the surface of the field, the top of the cap-stone being 0.9 m above ground level. That the cist was formerly covered by a large cairn is evident from a sketch of the site made at the end of the 17th century (Lhuyd, pl. v(a)) and from former place-names (Colville 1930, 302 f), but no certain cairn-material is visible at the present time.

The most southerly of the three standing stones is situated 36.5 m NE. of the cist. It measures 0.6 m by 0.6 m at the base and rises fairly evenly to a height of 2.4 m before tapering to a pointed top at a maximum height of 3.4 m. The centre stone stands 3 m to the NE. and is 3 m high; it is a thin slab measuring 1.5 m by 0.3 m at ground level, with the longer axis aligned NW. and SE. The top slopes down steeply towards the NW. The NE. stone, which stands 2 m further to the NE., appears to have been broken off at the top. It measures 0.9 m by 0.3 m at the base and rises with a slight taper to a height of 2 m.

The fact that the cist is situated in close proximity to the standing stones, and on the same alignment, is hardly likely to be fortuitous, and it is possible that all four monuments are contemporary. For a possible analogy see No. 42 (Cairn, Machrihanish, NR62SW 2).

RCAHMS 1971, visited May 1961.

730523 ccxxiii

(NR 7309 5241) Standing Stones (NR)

OS 6" map, (1924)

The most southerly of these three standing stones is situated 36.5m NE of cist NR75SW 2 (qv.). It measures 0.6m x 0.6m at the base, and rises fairly evenly to a height of 2.4m, before tapering

to a pointed top, 3.4m high. The centre stone, 3.0m high, is 3.0m to the E. It is a thin slab, 1.5m x 0.3m at base, oriented NW-SE. The third stone, 2.0m NE appears to have been broken off at the top. It measures 0.9m x 0.3m at base, and rises with a slight taper to a height of 2.0m.

RCAHMS 1971, visited 1961.

As described by RCAHMS

Surveyed at 1/10 000

Visited by OS (D W R) 13 August 1973.

3 flint pebbles, 2 flint flakes, and 1 flint core from this site, are in Campbelton Museum

DES 1977.

Discussions on the use of these stones and the cist (NR75SW 2) as a 1st millenium BC Solstitial Observatory

E W MacKie 1975; A Thom 1979; G Moir 1981.

Asset/Event Number	22
Asset/Event Name	Crois Mhic Aoidh, standing stone
Type of Asset/Event	Prehistoric ritual and funerary: standing stone
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM251
HER Number	
Status	Scheduled Monument
Easting	173381
Northing	635115
Parish	Killeean and Kilchenzie
Council	Argyll and Bute
Description	The monument is a single standing stone situated in a forestry clearing on the southern slopes of Doire na h-Earbaige. It dates probably to the Neolithic or Bronze Age period, sometime between 4000 BC and 1500 BC. The monument was first scheduled in 1936, but the documentation does not meet modern standards: the present rescheduling rectifies this. This stone stands at an angle, but measures 1.6m high (and would be as much as 1.8m if erect). It is 1.4m wide by 0.3m deep and its top is pointed. Traditionally known as Mackay's Cross (Crois Mhic Aoidh), the stone bears what appear to be two large 'M' characters carved in bold relief on its broad faces. The stone is aligned ENE to WSW. The area to be scheduled is circular on plan, to include the monument described above and an area around it within which evidence relating to the monument's construction, use and abandonment may survive, as shown in red on the accompanying map. Cultural Significance The monument's cultural significance can be expressed as follows: Intrinsic characteristics Given the lack of any apparent disturbance to the stone or its immediate surroundings, Crois

Mhic Aoidh represents a well-preserved example of its type and offers excellent potential for the survival of evidence relating to the erection of the stone and traces of the activities and rituals that may have been focussed here.

The role of standing stones in prehistoric society and belief is presently not well understood and sites such as this offer excellent potential to enhance our understanding of the function and meaning of these monuments. In the case of Crois Mhic Aoidh, which survives within a well-preserved prehistoric landscape, there is also the potential to ascertain how this standing stone relates to domestic settlements and funerary sites, as well as other standing stones and stone circles in the vicinity.

Contextual characteristics

Crois Mhic Aoidh stands about 0.6km to the SW of a stone circle on Beinn an Tuirc and there may have been a temporal and/or functional relationship between the two sites. This might simply have depended on their inter-visibility within the landscape or, alternatively, Crois Mhic Aoidh may have played some role in the function of the Beinn an Tuirc stone circle.

Various theories have been put forward to explain the purpose of standing stones, which are distributed widely across Britain. These include that they were markers for astrological phenomena, or defined territorial boundaries, or commemorated significant events or individuals. The landscape surrounding Crois Mhic Aoidh contains a wide range of remains of prehistoric domestic settlement in the form of hut circles and field systems, as well as funerary and ritual monuments such as cairns, stone circles, standing stones and many cup-marked and cup-and-ring marked rock outcrops. Although not all contemporary, this dense distribution of prehistoric monuments highlights the considerable time-depth of the surrounding landscape and indicates that this area appears to have been of importance for many generations of people.

Associative characteristics

Local tradition recounts that when a disguised King Robert the Bruce was a fugitive in Kintyre, he was hospitably entertained by a farm tenant named Mackay, who proceeded to escort him to the ferry for Arran. On the way, they rested on a hill, where this standing stone now marks the spot, and the farmer pointed out the lands of Arnicle and Ugadale, noting them to be Crown lands. When the pair reached the ferry, the King revealed his true identity and thanked the man for his hospitality, giving him his brooch. Bruce added that should he come into his rights, he would give the farmer the lands of Arnicle and Ugadale. Bruce subsequently granted the lands to the man and his heirs and these estates remained the property of Mackay's descendants, the MacNeals of Losset, up to 1927. The Macneals still have in their possession the 'Bruce Brooch'. This is why the standing stone is known by the name 'Crois Mhic Aoidh', the Cross of Mackay.

Statement of National Importance

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular the ritual life of Neolithic and Bronze Age communities. Apparently undisturbed, the stone and its immediate surroundings offer excellent potential for the preservation of archaeological deposits relating to its erection and use, including any activities that may have been focussed on the site. There is also potential for the survival of evidence of the relationships between this monument and nearby standing stones and stone circles. The loss of the monument would diminish our future ability to appreciate and understand the beliefs and rituals of Neolithic and Bronze Age communities.

References

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Asset/Event Number	23
Asset/Event Name	Corrieckrevie,cairn
Type of Asset/Event	Prehistoric ritual and funerary: cairn (type uncertain)
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM2487; NR75SW 1
HER Number	
Status	Scheduled Monument
Easting	173849
Northing	654051
Parish	Kilcalmonell
Council	Argyll and Bute
Description	This site was included within the RCAHMS Emergency Survey (1942-3), an unpublished rescue project. Site descriptions, organised by county, vary from short notes to lengthy and full descriptions and are available to view online with contemporary sketches and photographs. The original typescripts, manuscripts, notebooks and photographs can also be consulted in the RCAHMS Search Room. Information from RCAHMS (GFG) 10 December 2014. Cairn, Corrieckrevie. This impressive cairn (Pl. 9A), the largest surviving example in Kintyre, stands 200 m NW. of Corrieckrevie at a height of about 30 m O.D. It occupies the summit of a slight knoll situated on the brink of the scarp that overlooks the Tarbert-Campbeltown road to the W. Circular on plan, it measures 27.5 m in diameter and 5 m in height; no kerb is visible. Numerous quarry-scoops round the foot of the cairn, and several depressions on the top, indicate that a considerable quantity of stones has been removed from the original structure. But the damage so caused appears to be merely superficial, and the main body of the cairn material and any internal features are probably still undisturbed. RCAHMS 1971, visited May 1961 738540 CCXXiii

Asset/Event Number	24
Asset/Event Name	Ronachan Bay,fort S of
Type of Asset/Event	Prehistoric domestic and defensive: fort (includes hill fort and promontory fort)
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3185; NR75SW 7

HER Number**Status** Scheduled Monument**Easting** 174073**Northing** 654799**Parish** Kilcalmonell**Council** Argyll and Bute**Description** OS 6" map, (1924)

This fort, occupying the summit of an isolated rocky knoll, measures 24.5m x 18.5m within a 6.1m thick wall, now reduced to a grass-covered stony bank, not more than 1.0m high. A number of facing stones are visible in situ as shown in plan. A subsidiary crest line, traceable all round the knoll except on the W, may represent the edge of a terrace made as a seating for the outer face of the wall. The exceptional wall thickness would allow for mural chambers and galleries but no trace of such structures are now visible. The entrance is in the E. A D-shaped enclosure, formed by a low bank, and measuring 27.5m x 9m internally is situated at the base of the knoll, immediately SE of the entrance. Without excavation it is impossible to assess its relationship to the fort.

RCAHMS 1971, visited 1961.

A dun, measuring 17.5m NE-SW by 9.0m within a wall up to 4.0m thick. Otherwise as described by RCAHMS.

Surveyed at 1:10,000

Visited by OS (D W R) 13 August 1973.

Dun: NR 740 547. From mole disturbance on interior of dun, bones, mica schist polisher (or lid?) and translucent green glass dumb-bell bead.

L Masters and E Peltenburg 1979.

Asset/Event Number 25**Asset/Event Name** Dun Ronachain, dun 400m NE of Ronachan House**Type of Asset/Event** Prehistoric domestic and defensive: dun**Date and/or Period** PREHISTORIC**Listing No./NRHE Number** SM3673; NR75NW 2**HER Number****Status** Scheduled Monument**Easting** 174737**Northing** 655522**Parish** Kilcalmonell**Council** Argyll and Bute**Description** OS 6" map, (1924)

The rocky boss on the summit of Dun Ronachain is occupied by the slight remains of an oval dun. Its wall, much reduced by stone-robbing and quarrying, encloses an area 18.5m x 10.5m. The entrance, not now visible, may have been on the NE. At the present time approach from the SW is obstructed by a ditch-like hollow, 2.4m in depth. Though obviously artificial, it is not

clear whether this feature is contemporary with the dun, or a surface quarry of no great age. It does not form an effective defence-work for the main structure, and if it is contemporary, it must have been left unfinished.

RCAHMS 1971, visited 1962.

The remains of a dun, generally as described by RCAHMS. The ditch on the SW is probably a contemporary unfinished work.

Revised at 1:2500.

Visited by OS (D W R) 16 July 1973.

NR 7474 5552. No change to the report of 16 July 1973.

Surveyed at 1/10,000.

Visited by OS (B S) 23 February 1977.

Asset/Event Number	26
Asset/Event Name	An Dunan, dun 70m SW of Minen
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3184
HER Number	
Status	Scheduled Monument
Easting	175628
Northing	652049
Parish	Kilcalmonell
Council	Argyll and Bute
Description	The monument comprises a prehistoric dun likely to date to the Iron Age (between 500 BC and AD 500). It survives as the remains of a substantial sub-circular enclosure wall occupying the summit of a low knoll. The visible footprint of the monument covers an area approximately 21m in diameter, with the interior measuring around 13.5m by 12m. The monument is located at a height of 115m above sea level on a S-facing slope, to the NE of Ballochroy Glen, in an area of rough grazing. The monument was first scheduled in 1972, but the documentation does not meet modern standards: the present rescheduling rectifies this. The area to be scheduled is an irregular polygon on plan, defined in its southern half by the base of the rock outcrop on which the monument is sited and in its northern half by a modern fence line. The scheduled area includes the remains described above and an area around them within which evidence relating to the monument's construction, use and abandonment may survive, and adjoining land essential for the monument's support and preservation, as shown in red on the accompanying map. The scheduling specifically excludes the above-ground elements of the post-and-wire fence to the N, to allow for its maintenance. Statement of National Importance Cultural Significance The monument's cultural significance can be expressed as follows: Intrinsic characteristics

The dun occupies a rocky knoll with steep sides on the E, S, and SW, overlooking the right bank of an unnamed tributary of the Ballochroy Burn. It exploits the natural rock outcrop as its base and in the NE arc of its wall-circuit. Elsewhere the dun is defined by a low sub-circular, turf-covered stone wall, which is over 4m wide in places. A number of outer facing-stones have been reported protruding from the knoll some 1.8m below the summit. There are two breaks in the wall circuit, in the N and E arcs: that in the N is the likely position of the entrance. Several stones of the internal wall-face are visible through the vegetation. In the SE of the interior, a crescent-shaped stony bank is probably secondary; no other features are visible on the uneven surface of the interior. Material from the wall and the occupation of the dun is likely to survive both in buried layers on the knoll and down slope around the southern half of the monument.

Overall, the footprint of the monument is intact and it survives in good condition. There is high potential for the survival of buried deposits and features beneath and beyond the wall and within the dun interior. Future examination of the dun could provide information about its date, form and construction, and investigation of the interior could contribute to our understanding of how it was used and how this may have changed over time. Buried artefacts and palaeoenvironmental evidence can contribute to our understanding of how people lived and worked, the extent and nature of trade and exchange, and the nature of the agricultural economy in this vicinity. The monument has the potential to contribute to our understanding of the nature of Iron Age settlement and the design and development of these small defended settlements.

Contextual characteristics

This dun is a type of defended settlement which characterises much of the coastal occupation of Argyll and Atlantic Scotland in later prehistory. These duns belong to a much broader category of later prehistoric settlement, which includes brochs, forts, crannogs, duns and hut circles. Altogether, over 500 later prehistoric settlements are known in Argyll. It is believed that duns represent the remains of living spaces of small groups or single families.

Duns are mainly a coastal phenomenon and tend to be located on locally high ground along prominent coastal routes or within easy reach of the coast. This example is unusual in having an inland position behind a network of duns along the western Kintyre coast. However, it is located on a natural route-way connecting the E and W coasts of Kintyre and has good views over the approaches to the dun. Researchers have suggested that duns did not exist in isolation, but were sited where they would be visible in the landscape and were often inter-visible with other duns or settlements. An Dunan may also have been part of a network of broadly contemporary sites spread across the Kintyre peninsula and with connections to similar strongholds beyond. The monument has good potential to contribute to our understanding of the later prehistoric occupation of Kintyre and further afield.

National Importance

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, in particular, the design and construction of later prehistoric defended settlements and their place in the wider economy and society. There is good potential for well-preserved archaeological remains to survive within the site. These buried remains can tell us much about the people who built and lived here and the connections they had with other groups. The loss of the monument would significantly diminish our future ability to appreciate and understand the occupation of Argyll in the later prehistoric period.

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RCAHMS 1971, The Royal Commission on the Ancient and Historical Monuments of Scotland. Argyll: an inventory of the ancient monuments: volume 1: Kintyre, p 91, no 226. Edinburgh.

Asset/Event Number	27
Asset/Event Name	Clachan Churchyard, Cross, Cross Slabs & Tombstones
Type of Asset/Event	Crosses and carved stones: cross (free-standing); cross slab; tombstone
Date and/or Period	MEDIEVAL- EARLY MODERN
Listing No./NRHE Number	SM3676
HER Number	
Status	Scheduled Monument
Easting	176426
Northing	656056
Parish	Kilcalmonell
Council	Argyll and Bute
Description	The monument consists of carved stones situated in Clachan churchyard. Seven stones and several fragments are standing within a stone shelter situated against the north wall of the graveyard. Other carved stones are situated throughout the graveyard. The monument is being rescheduled in order to define more clearly the extent of the scheduling. The present parish church at Clachan was erected in c.1760 and probably replaces an earlier building on the same site. The church appears to have been dedicated to St Colmanea or Columbanus, a contemporary of St Columba. All the stones apparently derive from the churchyard, although none are in their original positions. Within the stone shelter there are seven carved stones. Going from west to east there are: 1. A West Highland grave slab, dated to the 14th-15th century, fractured in the middle, with the top right and bottom left corners missing. It is decorated with a sword with a lobated pommel and inclined quillions. 2. A West Highland grave slab, dated to the 14th-early 16th century, fractured in the middle. It is decorated with a narrow panel filled with a leaf-scroll; the individual leaves with their stalks forming circles which fill the entire width of the panel. 3. A West Highland grave slab dated to the 14th-15th century, decorated with a sword with straight quillions and bulbous terminals. 4. A West Highland grave slab of the Kintyre School, dated to the 15th century. This is the best preserved of the carved stones within the graveyard. Within a double plain moulding there is a sword with lobated pommel and inclined quillions. On the right of the sword is foliage springing from two intertwined stems and terminating in twin beasts, and on the left a plain slip for an inscription. Below the slip there are a pair shears and two plain tablets. A secondary inscription has been cut into the stone in the late 17th or 18th century: it reads HERE L[YES] ARCHIBALD [?BROTHER] / TO RONALD MCALISTER OF DUN SKEIG. 5. A West Highland grave slab of the Iona School, dated to the 14th-early 16th century. The slab has a bevelled edge with nail-head moulding. It is decorated with a single row of foliage ornament. Cut around three sides of the margin of the stone there is a secondary inscription reading: THIS IS THE BURIEL PLACE OF RONALD MCALISTER OF DUN AND MARY MCNILL AND THEIR CHILDREN 1707. 6. A West Highland grave slab of the Kintyre School, dated to the 15th century. The stone has been covered with elaborate decoration but is now extremely worn. 7. An early Christian cross slab bearing a Latin cross and a ring cross, badly worn. Within the churchyard there are other early Christian and Medieval carved stones:

1. In the NE corner of the graveyard, there is a recumbent early Christian cross slab below the gravestone of John Taylor, late tenant at Dalchairy. The cross is a hammerhead cross, with open arms and stem.
 2. In the SW of the graveyard is an undecorated cruciform stone that serves as a headstone. This stone may be early Christian in date.
 3. In the SW of the graveyard, below a head stone to Helen MacCallum, there is a recumbent West Highland grave slab with a plain border. Within the border is a crudely incised sword with lobated pommel and inclined quillions with bulbous terminals.
 4. In the NE of the graveyard, there is a slab decorated with a crudely incised sword, now almost covered with turf.
- Among the post-medieval churchyard monuments, one is of note. It bears a representation of a four-horse plough-team and commemorates Donald McGill, tenant in Cairnmore, who died in 1757.

The area to be scheduled measures 40m W-E by 35m N-S, as defined in red on the enclosed map. The scheduling excludes the modern structure of the stone shelter, the church and all modern burial lairs still in use.

Asset/Event Number	28
Asset/Event Name	Ballinakill House, cross by entrance to drive
Type of Asset/Event	Crosses and carved stones: cross (free-standing)
Date and/or Period	PREHISTORIC; MEDIEVAL
Listing No./NRHE Number	SM3695
HER Number	
Status	Scheduled Monument
Easting	176697
Northing	656126
Parish	Kilcalmonell
Council	Argyll and Bute
Description	OS 6" map, (1925) A number of urns were found in this small mound a few years before 1875 (Ordnance Survey Name Book [ONB] 1875). It is very heavily overgrown with shrubs, but appears natural (RCAHMS 1971). A mutilated disc-headed cross stands on the summit of the mound. The only visible decoration on the opposite side of the stone is an incised line which may have formed part of a circle. (See also NR75NE 9) Name Book 1875; RCAHMS 1971, visited 1961 and 1962. Burials, Balinakill (Sites). Immediately S. of the junction of the public road with the drive leading to Balinakill there is a small mound on which stands the stone cross (RCAHMS 1971) No. 260. The mound is very heavily overgrown with shrubs, but appears to be a natural feature. It is reported (Name Book No. 11, p.47) that a number of "urns" were found in it during the 19th century, but no further details are known.

RCAHMS 1971, visited May 1961.

767561 ccxii ("Tumulus")

Reference (2001)

RCAHMS; Early Medieval Sculpture in the West Highlands and Islands

On a natural mound stands a mutilated cross, about 0.83m in visible height by 0.25m at base. The solid disc, about 0.6m in diameter, had square sunken armpits, but the arms are lost.

I Fisher 2001.

Asset/Event Number	29
Asset/Event Name	Talatoll, shielings 1400m SE of, Kintyre
Type of Asset/Event	Secular: shieling
Date and/or Period	MEDIEVAL-EARLY MODERN
Listing No./NRHE Number	SM3817
HER Number	
Status	Scheduled Monument
Easting	177585
Northing	653031
Parish	Kilcalmonell
Council	Argyll and Bute
Description	The monument comprises two groups of shieling huts of pre-Improvement date. The huts represent the remains of temporary dwellings used on a seasonal basis by farm-workers who migrated to upland pastures with their cattle during the summer months. It is likely that these dense concentrations of features represent the remains of seasonal activity that took place over a considerable period of time. This monument occupies an upland location on three small hillocks in forestry clearings at approximately 140m above sea level. The monument was originally scheduled in 1976, but the documentation does not meet modern standards: the present rescheduling rectifies this. The westernmost group of shieling huts consists of an extensive cluster of at least 42 small foundations, varying from approximately 2.7 by 2.1m to about 6.1 by 4.9m, within walls up to 0.9m thick. The foundations appear to be composed mainly of turf and stone. The majority of the huts are grouped around two small hills near an unnamed stream. In the SW section of the group lie the remains of a probable prehistoric roundhouse, about 12m in diameter. A later shieling hut constructed inside the roundhouse made use of its SE side. The easternmost group is located 180m to the SE, on the other side of the stream, and consists of the remains of at least 25 shieling huts located on a small hill. These again vary in size from around 2m by 2m to about 8m by 5m, within walls up to 0.9m thick. At least half of the hut foundations are built on small mounds, which themselves probably represent the remains of successive earlier huts. The area to be scheduled is irregular on plan and consists of two separate polygons to include the remains described above and an area around them within which evidence relating to the monument's construction, use and abandonment may survive, as shown in red on the accompanying map. The scheduling specifically excludes the post-and-wire fence on the W side of the westernmost group of shielings. Statement of National Importance Cultural Significance

The monument's cultural significance can be expressed as follows:

Intrinsic characteristics

By their very nature, shieling huts tend to be less substantial than other types of structure and, therefore, less likely to survive. Overall, this group of shieling huts survives in reasonable condition, with the stone and turf-covered footings of the hut walls clearly visible. This cluster of features testifies to the practice of transhumance (seasonal agricultural activity) in the medieval and later period, which occurred over many decades and, possibly, centuries. Given the presence of so many huts in these two areas, the site may represent a larger summer settlement than usual, with a long duration of occupation and re-occupation. Many of the turf footings are sited on small mounds, which suggests that shieling huts may have been built and re-built on the same spots, in which case this site may have a longer and more complex development sequence than at first appears. Some of the huts have two 'rooms' and two seem to have three conjoined 'rooms'; these either represent multi-roomed huts or they may indicate different phases, with later huts built next to, rather than on top of, earlier structures. Future investigation of the site could enhance our understanding of the origins, use and re-use of seasonally occupied places and associated agricultural practices over a considerable length of time.

It is likely that important archaeological deposits survive in and around the shieling huts, which could contribute towards our understanding of rural transhumance practices in Argyll and more generally in Scotland during the medieval and later period. Archaeological evidence for the internal layout of the huts, the remains of any fittings and furniture, and for the construction, use and re-use of the shieling huts is likely to survive below ground. As an example, excavated shieling huts elsewhere have produced accumulated deposits of ash near their entrances, resulting from the periodic cleaning out of internal hearths. Scientific analysis of such remains could greatly enhance our understanding and appreciation of the dating and occupation sequence of the site. The probable prehistoric roundhouse is likely also to preserve important information about the nature of domestic life and agricultural practices carried out on this same hillside a thousand years or more before it began to be used for summer shielings.

Contextual characteristics

The monument represents the remains of an important group of shieling huts, which can be compared with other examples in Argyll. Shieling huts and the use of summer pastures were part of a long-lived seasonal practice in parts of rural Scotland. Occasionally, whole villages would relocate from their 'winter town' to the shielings or 'summer town'. Because of their function and seasonality, shielings are often located in remote upland regions. The huts were normally sited on small hills near fresh water, in good positions for monitoring the whereabouts and wellbeing of cattle and carrying out dairying activities. The huts themselves were built of wood or stone, and covered in turfs dug from the hill. They often contained a room with a hearth on one side and a sleeping area on the other; a separate room or cupboard was often used to store dairy produce and supplements, such as fish bones for the cattle. Textual sources suggest that children and young women primarily carried out these activities, and that time spent at the shieling was often welcomed as the occupants were away from the watchful eye of parents and village elders.

Shieling traditions and, specifically, hut construction seem to vary regionally, which at least partly reflects the availability of different building materials. The shieling huts at Talatoll survive as stone and turf footings, which suggests they were constructed primarily from timber and turf. Typically, they are grouped on a small hill in a wide valley and located next to a stream. Comparative study of the form, construction and location of this group of shieling huts with others across Argyll and further afield can enhance our knowledge and understanding of regional and national variations in transhumance practices and the range of vernacular buildings.

National Importance

The monument is of national importance because it has an inherent potential to make a

significant addition to our understanding of the past, in particular the positioning, function and construction of upland shielings, their place in the social and economic organisation of the time, and changes in rural land-use and agricultural practices from the medieval period to the early 19th century. The relatively good state of preservation of this group of shieling huts enhances this potential. The probable inclusion of a prehistoric roundhouse within the shieling group adds to the archaeological interest and importance of the monument. The loss of the monument would affect our ability to understand rural settlement and land-use from the pre-Improvement period in both Argyll and Scotland.

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Asset/Event Number	30
Asset/Event Name	Loch Ciaran, standing stone 1430m SW of Achaglass
Type of Asset/Event	Prehistoric ritual and funerary: standing stone
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM212
HER Number	
Status	Scheduled Monument
Easting	178042
Northing	654796
Parish	Kilcalmonell
Council	Argyll and Bute
Description	The monument is a prehistoric standing stone likely to date to the third or second millennium BC. It survives as an upstanding monolith which tapers towards its top. The stone stands c 2m high with a slight lean and measures approximately 0.8m by 0.4m at its base. The standing stone is located in a conifer plantation on the N side of a metalled track. It sits at 130m above sea level and overlooks Loch Ciaran to the S. The monument was first scheduled in 1936, but the documentation does not meet modern standards: the present rescheduling rectifies this. The area to be scheduled is circular on plan, measuring 8m in diameter, centred on the standing stone. The scheduling includes the remains described above and an area around them within which evidence relating to the monument's construction, use and abandonment may survive, as shown in red on the accompanying map.

Statement of National Importance Cultural Significance

The monument's cultural significance can be expressed as follows:

Intrinsic characteristics

This standing stone survives in good condition and is a fine representative of its class. The stone appears intact, undisturbed and in its original position. Lichens cover approximately 60% of the visible surface. An inscription carved relatively recently on its E face comprises five, capitalised and punctuated serif letters: J.K.S.M.T.

There is good potential for the survival of archaeological deposits and features relating to the stone's erection and use, possibly including burial deposits and associated artefacts, and environmental information. It is highly likely that the stone's socket and related archaeological deposits are undisturbed.

This standing stone has the potential to enhance our understanding of the function of standing stones in the later Neolithic and Bronze Age, and to provide important information about the landscape, climate and vegetation at the time the stone was erected. Its position within the landscape is undoubtedly significant and merits further analysis. It could further our understanding of the positioning of standing stones and other ritual monuments in relation to each other and in the landscape, and of the significance of these monuments to the societies that built and used them.

Contextual characteristics

Standing stones are a widespread and long-lived phenomenon in Scotland, and are sometimes all that survives of more elaborate and extensive monuments, such as stone circles, alignments or avenues. Single standing stones are particularly numerous in Argyll, with more than 180 recorded.

Significant effort would have been required to transport, position and erect the stone, which suggests that both this activity and this location were important to those who erected it here. The locations of standing stones often appear to have been selected to take advantage of views and inter-visibility with other monuments, or on natural route-ways. Many are visible from great distances and perhaps mark a significant area or territory. Standing stones may have been part of a network of related landmarks. They are often located with reference to other ritual or burial monuments, such as henges, stone circles or cairns, and may themselves have formed part of some ceremonial or ritual activity. Together these types of monuments appear to reflect a complex system of belief and ritual practices involving burial and commemoration of the dead, spiritual ceremonies and celestial observations.

The Loch Ciaran standing stone is unusual in that it appears to be a relatively isolated example, with few recorded prehistoric monuments in the vicinity, although its current location within a conifer plantation probably masks its full context and associations. It lies 180m W of the NE end of Loch Ciaran, and around 4km from the nearest coastline on the Sound of Gigha.

Associative characteristics

The inscription on the E face is relatively recent, but testifies to people's continuing interest in the stone through the ages. The standing stone is shown adjacent to a track or roadway on the Ordnance Survey 2nd edition map.

This monument is of national importance as a well-preserved example of a common type of ritual or ceremonial monument dating to the late Neolithic or Bronze Age. The standing stone has the potential to tell us more about the activities that took place at sites such as this, as well as the wider beliefs and lifestyles of the prehistoric people who erected and used standing stones. The loss of this example would significantly impede our ability to understand the nature of prehistoric ritual practices, activities, beliefs and social organisation in Argyll and further afield.

References

Bibliography

The Royal Commission on the Ancient and Historical Monuments of Scotland, 1971, An inventory of the ancient monuments of Argyll, volume 1: Kintyre. Edinburgh.

Asset/Event Number	31
Asset/Event Name	Saddell Abbey
Type of Asset/Event	Ecclesiastical: abbey; burial ground, cemetery, graveyard
Date and/or Period	MEDIEVAL
Listing No./NRHE Number	SM3645; NR73SE 1
HER Number	
Status	Scheduled Monument
Easting	178472
Northing	632056
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	The monument comprises the fragmentary remains of the Cistercian Saddell Abbey, which lie on a slightly raised promontory immediately above the confluence of Saddell Water and Allt nam Manach. The proximity of the conventual buildings to the latter stream suggest that it was used for drainage purposes. The monument is being rescheduled better to define the extent of the scheduled area, to increase the area up to the bank of the river, and to exclude the footprint of the house known as Allt Nam Manach. The buildings originally consisted of a church, with an aisleless nave and choir and north and south transepts, together with three main ranges of conventual buildings grouped around a cloister on the south side of the church. Only the presbytery and the north transept of the church, and part of the south claustral range, survive as standing remains. All the exposed masonry is constructed of random rubble laid in lime mortar. The presbytery measures 7.5m in length and 5.5m in width within walls some 0.9m in thickness. Part of the south wall rises to a height of 4.6m but elsewhere the walls are reduced to a height of between 0.9m and 1.5m above the existing ground-level. The surviving, north, transept measures 7.2m in length by about 6.1m in width within walls some 1.2m thick. Apart from the remains of a large window-opening in the north gable, there appear to have been two smaller windows in the east wall. The discrepancy in thickness between the walls of the presbytery and transept, coupled with the fact that the east wall of the transept abuts the north wall of the presbytery, indicates that the transept is an addition. Of the claustral buildings only the central portion of the south range now survives. This structure, which probably represents the undercroft of the refectory, measures about 7m E/W by 4.6m transversely within walls some 1.1m thick. There are the remains of a small deeply-splayed window in the south wall and of opposed entrance doorways at the east end, where a transverse wall has been built at a comparatively recent period. The north doorway is represented by its west jamb and draw-bar socket, together with part of the arch-springing. The south doorway retains its west jamb and draw-bar socket. The building was used as a burial-place in the post-Reformation period. What little is known of the history of Saddell Abbey comes largely from a 16th-century confirmation charter of a number of early writs. The founder is usually said to have been Reginald, son of Somerled, who succeeded his father in the lordship of Kintyre in 1164 and died in 1207. A 13th-century list of Cistercian houses, however, which in other respects seems to be

reliable, attributes the foundation to the year 1160, when the founder would presumably be Somerled. The character of Romanesque ornament on some fragments preserved in Campbeltown Museum suggests that building operations began well before the end of the 12th century. A late 14th-century document in the Vatican archives shows that Saddell was a daughter house of Mellifont, in the diocese of Armagh, itself founded in about 1142. The community was probably small in numbers and the recorded endowments are not extensive. Most of the property held was in Kintyre, but the monastery also had possessions in Gigha, Knapdale, Carrick and Arran.

In or before 1507 James IV proposed that the Abbey should be united to the bishopric of Argyll, claiming that the place had seen no monastic life within living memory. This step having been taken, the lands of Saddell were erected into a free barony and David Hamilton, Bishop of Argyll, began the construction of a castle on a site adjacent to the monastery. Considerable remains of the abbey buildings seem to have survived until about 1770, when they were extensively quarried to provide building materials for a court of offices at Saddell Castle and for other estate purposes.

Fourteen graves slabs, dating to the 14th to early 16th century, are as described in the Royal Commission Argyll Inventory Vol 1 (1971), 296, nos 2 to 15. Numbers 2 to 13 are in the recently constructed stone shelter along with a recently discovered stone of blonde sandstone which was uncovered during conservation works. The latter is a 14th-century graveslab, broken into two pieces (50cm long by 49cm wide and 82cm long and 46cm wide, and 0.15m thick). There is a relief figure of a warrior carrying a spear, shown standing in profile within a niche centrally placed on the stone. Underneath the warrior figure are the remains of a sword on a stepped base. There are traces of foliate and interlace design on the stone but it is very weathered and the details could not be deciphered.

The area to be scheduled is an irregular area with maximum dimensions 212m E/W by 82m N/S, as marked in red on the accompanying map. It includes the remains of the abbey and the graveyard and the collection of stones in the stone shelter, along with an area within which archaeology associated with the abbey and the graveyard might be expected to survive. An area is marked in red within the scheduled boundary, showing the exclusion of the footprint of the house named Allt Nam Manach. Also excluded from scheduling are the stone shelter for the stones; the boundary walls; any burial lairs within the graveyard which are still in active use; the top 30cm of all paths and tracks; and the top 30cm of deposits of the area outside the graveyard boundary.

Statement of National Importance

The monument is of national importance as the only Cistercian abbey to be founded from Ireland, and for its connections with Somerled, first Lord of the Isles. The archaeological remains have the potential to provide important information about the ecclesiastical architecture and monastic life of a small 12th-century Cistercian abbey. The site is also important for its outstanding collection of 14th to early 16th-century carved stones which have the potential to contribute to our understanding of ecclesiastical organisation, funerary practices and the production of monumental sculpture in western Scotland in the medieval period.

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Asset/Event Number	32
Asset/Event Name	Saddell House, fort 450m NE of
Type of Asset/Event	Prehistoric domestic and defensive: fort (includes hill fort and promontory fort)
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3539; NR73SE 5
HER Number	
Status	Scheduled Monument
Easting	179485
Northing	632077
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	OS 6" map, Argyllshire, 2nd ed., (1924) A fort measuring about 27.5m by 23m within a single wall is situated at a height of 50m OD in Pluck Wood. From the N the approach is almost level, while on the other three sides the fall of the ground is not particularly steep. Round the NW half of the perimeter the wall has been reduced to a stony scarp, but elsewhere it is represented by a band of debris up to 4.3m thick, in which two stretches of the outer face are visible. On the E the face still stands to a height of 1.1m in three courses and is constructed of large slabs. The position of the entrance is not apparent. The only features in the interior are a comparatively recent wall, itself now ruinous, and a cairn which was erected in 1935. RCAHMS 1971, visited 1960. The fort is as described and planned by RCAHMS (1971). A further length of ruinous, relatively recent walling is to be seen immediately N of the modern cairn. Surveyed at 1:10 000. Visited by OS (JB) 23 February 1978. Note (13 October 2014 - 23 May 2016) Atlas of Hillforts of Britain and Ireland

This small oval fortification measures only 27m by 23m internally (0.05ha) within a wall reduced to a band of rubble about 4.3m in thickness, and while two runs of outer facing constructed of large slabs can be seen, it occupies a weak position and should not be considered a fort. Its identification by RCAHMS investigators is a manifestation of the problems of morphological classification of small drystone structures in an area where the only categories available were fort and dun, and the interior of this example exceeds the size range they employed to define duns. Had it been situated on a strong topographical feature it would have qualified under the definitions employed by the Atlas. In essence this is a fortified settlement enclosure.

Information from An Atlas of Hillforts of Great Britain and Ireland – 23 May 2016. Atlas of Hillforts SC2266

Asset/Event Number	33
Asset/Event Name	Rudha nan Sgarbh,dun
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3100; NR73SE 4
HER Number	
Status	Scheduled Monument
Easting	179754
Northing	634017
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	OS 6" map, Argyllshire, 2nd ed., (1924)

On a steep-sided rocky knoll 12m high, situated a few metres inland from high-water mark at Rubha nan Sgarbh, there is a dun measuring internally 27.5m in length by 10.5m in maximum width. The dun has been defended by a wall 3.7m in thickness, of which one stretch of the inner face and several stretches of the outer face are preserved in situ as shown on the plan. In some places the outer facing-stones lie as much as 2.1m below the margin of the summit area, while at one point on the NNE the wall is carried across a natural cleft in the knoll on a foundation of stones 5m in depth.

The entrance, which is on the E is well preserved and measures 1.5m in width. Originally access to it was gained by means of a gully which leads up to the steep ESE flank of the knoll, but at the present time the gully is choked with tumbled debris and terminates in a sheer drop of 3m to the shore below. The interior of the dun is featureless.

Part of the flat upper stone of a rotary quern found in the debris of the wall on the date of visit is now in Campbeltown Museum.

RCAHMS 1971, visited 1960.

The dun is as described and planned by RCAHMS (1971).

Surveyed at 1:10 000.

Visited by OS (JB) 24 Febr

NR 7975 3402 Site identified as part of a coastal zone assessment survey.

M Cressey, S Badger, 2005.

Asset/Event Number	34
Asset/Event Name	Portrigh Strip,earthwork
Type of Asset/Event	Prehistoric domestic and defensive: enclosure (domestic or defensive, rather than ritual or fune
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3672
HER Number	
Status	Scheduled Monument
Easting	181414
Northing	637806
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	(Centred NR 8137 3784) Earthwork, Portrigh Strip (Site). An earthwork consisting of a rampart and external ditch is revealed by crop markings on National Survey RAF air photographs (106G Scot/UK 46 3058-9) in the level field that borders the E side of Portrigh Strip, 640m S of Carradale. The work was probably oval on plan with maximum internal measurements of 70m from N to S by 61m from E to W, but the W side lies within the wood and is not visible on the photographs. At the time of the visit, shortly after the hay had been cut, the ditch was clearly marked by a belt of clover about 3.5m in width. RCAHMS 1971, visited 1955; Information from RCAHMS 6" map. No trace of this feature was seen at the time of visit, when the field was in pasture. Visited by OS (JB) 26 February 1978.

Asset/Event Number	35
Asset/Event Name	Carradale,fort,Kilbrannan Sound
Type of Asset/Event	Prehistoric domestic and defensive: fort (includes hill fort and promontory fort)
Date and/or Period	PREHISTORIC- IRON AGE
Listing No./NRHE Number	SM2180; NR83NW 1
HER Number	
Status	Scheduled Monument
Easting	181516
Northing	636504
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	(NR 8151 3646) Fort (NR) (Vitriified) (NR) OS 6" map, Argyllshire, 2nd ed., (1924)

On the summit of Carradale Point, at a height of 15m OD, there is a vitrified fort measuring 56.5m by 23m internally. The site occupies the middle of an elongated peninsula which is cut off from the adjacent mainland at high tide.

The fort defences comprise a continuous wall (A on the RCAHMS {1971} plan) with outworks (B-H) presumably designed to restrict access to the site. Wall A is now represented for the most part by a low grass-grown bank about 4.5m in thickness, from which large masses of vitrified core-material protrude as shown on the plan. A stretch of the outer face of the wall, measuring 8m in length, has survived in situ on the WNW, while, on the date of visit, it was found that the outer facing-stones at the SE angle of the fort had recently been exposed. Christison (1898) noted a considerable length of the outer face on the NW, but this is no longer visible. The masses of vitrified wall-core on the E side of the fort present a striking appearance attaining in some cases a height of 1.5m above the level of the exterior; on the SW, however, where no vitrified material is evident on the surface of the bank, six separate masses have been dislodged from the wall and lie a short distance away in the interior of the fort.

A gap in the bank between two large vitrified masses on the SE may indicate the position of the entrance. The interior contains several sinuous scarps which may be the result of surface quarrying undertaken during the construction of the fort.

Outside the fort a grass-grown stony bank (B), measuring 5.5m in thickness and 0.6m in height, runs up the slope from a rocky gully on the SE to join the fort wall a few yards S of the supposed entrance. That this bank represents a later development is suggested by the discovery, referred to above, that the two structures are not bonded together but meet in a straight joint; the purpose of this addition was possibly to secure the entrance against attack from the S. Approach to the fort from this and other directions was likewise impeded by short lengths of walling which blocked the natural gullies leading up from the shore; these are now represented either by stretches of outer facing-stones (C, D and F) or merely by bands of rubble core (E, G and H). An oval depression, some 7.5m outside the N end of the fort, is not mentioned by Christison (1898) in his account of the site, and is probably of recent origin.

D Christison 1898; RCAHMS 1971, visited 1960.

The vitrified fort is as described and planned by RCAHMS (1971).

A small, possibly natural, penannular enclosure 4.0m internal diameter, lies just outside the south wall of the fort. It incorporates on the S side the lump of vitrification shown by the RCAHM, but this may be simply tumble from the fort wall.

Surveyed at 1:10 000.

Visited by OS (JB) 24 February 1978.

NR 8151 3649 Site identified as part of a coastal zone assessment survey.

M Cressey and S Badger 2005.

Note (28 October 2014 - 18 October 2016)

Atlas of Hillforts of Britain and Ireland

This heavily vitrified fort is situated on the summit of Carradale Point, a narrow spit of land projecting southwards on the E side of Carradale Bay. Oval on plan, it measures 56.5m from N to S by 23m transversely (0.1ha) within a wall reduced to a bank of rubble which is up to 4.5m thick and contains large masses of vitrified wall core, particularly along its E side. A gap on the SSE is possibly an entrance, shielded on the southern side by a spur wall dropping down from the S end of the fort to the rocks on the shore, though a line of transverse face within the body of this spur possibly indicates that it is an addition. There are also other fragments of walls visible blocking gullies that would otherwise have provided access at several points on the N, W and S, effectively creating an outer fortified enclosure measuring about 140m in length from N to S by 45m in breadth (0.5ha). It is assumed that these walls are contemporary with the

inner fort.

Information from An Atlas of Hillforts of Great Britain and Ireland – 18 October 2016. Atlas of Hillforts SC2452

Asset/Event Number	36
Asset/Event Name	Airds Castle, 235m SE of Barncluith, Carradale
Type of Asset/Event	Secular: castle
Date and/or Period	MEDIEVAL
Listing No./NRHE Number	SM3177
HER Number	
Status	Scheduled Monument
Easting	182040
Northing	638314
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	The monument is the remains of a medieval castle located on the summit of a rock outcrop looking E over Kilbrannan Sound towards Arran. The visible remains comprise the fragments of a stone curtain wall that appears originally to have enclosed the entire summit, an irregular pentagonal area measuring 67m N-S by 24m transversely. The curtain wall has a thickness of about 1.5m and now rises to a maximum height of 3.4m where it acts as a retaining wall on the E side of the site. The ground falls away steeply from the summit on all sides except the NW, where there is a hollow that probably represents a broad flat-bottomed ditch. The castle lies about 300m S of Carradale Harbour and 100m inland at about 20m above sea level. The monument was originally scheduled in 1972, but an inadequate area was included to protect the remains and the documentation did not meet modern standards: the present scheduling rectifies this. The scheduled area is an irregular shape on plan, to include the remains described above and an area around them in which evidence for the monument's construction, use and abandonment may survive, as shown in red on the accompanying map. Statement of National Importance National Importance The monument's cultural significance can be expressed as follows: Intrinsic characteristics Airds Castle was held by the Lords of the Isles until its forfeiture to the Crown in the late 15th century. Although its date of construction is not known, researchers believe all the existing remains are of medieval character. The principal entrance was probably situated towards the centre of the W side and reached by a track that climbs the W slopes of the outcrop; an apparent gap in the E wall may mark the site of a postern-gateway. Although there are no visible traces of any internal buildings, it is highly likely that significant archaeological deposits and features survive below ground level. These have high potential to inform us about the construction, use and development of the castle, including the layout, character and date of the buildings. The site has considerable potential to provide information about the daily lives of the occupants and about the changing character of structures and occupation over several hundred years. The likely survival of artefacts and ecofacts would also enhance our knowledge: there is particular potential for their recovery in a small circular reed-grown depression on the summit that may represent the site of a well, in the ditch to the NW, and in the deep hollow below the curtain wall to the E.

Contextual characteristics

The castle stands in a commanding position on the E coast of Kintyre; a strategic location that would have enabled its occupants to control the Kilbrannan Sound between Kintyre and Arran, which is particularly significant given the importance of the sea during the medieval period. It lay close to the boundary between lands controlled by the Lords of the Isles and those held by the Scottish king. There is particular potential to compare Airds Castle with Skipness Castle, which is located about 20 km away at the N end of the sound and was the administrative centre of a considerable barony, one of the great medieval lordships of Kintyre. There is also potential to study this monument in the context of several other important W coast castles, among them Castle Sween, Lochranza Castle, Dunstaffnage Castle and Rothesay Castle. Such comparisons give this monument considerable potential to inform our understanding of the nature of lordship, control and the wider operation of medieval society.

Associative characteristics

The castle seems to have come into the possession of the Crown at the end of the 15th century following the forfeiture of John, Lord of the Isles. In 1498 James IV granted the 'Fortalicium de Ardcardane', together with other property in the same area, to an Ayrshire landholder, Sir Adam Reid of Stairquhite and Barskimming. In the middle of the 16th century the same lands formed part of the barony of Bar, in North Kintyre, then held by the MacDonalds of Dunnyveg. In 1605 they were again in the possession of the Reids of Barskimming.

The site of the castle is marked 'Airds Castle (Ruin)' on the Ordnance Survey 1st edition map.

National Importance

This monument is of national importance because it has an inherent potential to make a significant addition to our understanding of the past, particularly the construction, defences and domestic life of a west coast medieval castle. The visible remains of the curtain wall are augmented by buried archaeology, and there is potential for the survival of organic remains that may be preserved in a well and ditch. The monument can enhance the written history of the Lords of the Isles by providing data on trade and exchange, economy and the details of everyday life. Its loss would impede our ability to understand the medieval castles of Argyll and Bute and their role in the exercise of power by the Lords of the Isles.

References

Bibliography

RCAHMS records the monument as NR83NW2. The West of Scotland Archaeology Service (WoSAS) Sites and Monuments Record reference is WoSASPIN 3813.

References

RCAHMS, 1971, The Royal Commission on the Ancient and Historical Monuments of Scotland. Argyll: an inventory of the ancient monuments, vol 1: Kintyre, p 157, no 308. Edinburgh.

Asset/Event Number	37
Asset/Event Name	Killean House
Type of Asset/Event	Listed Buildings
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB12005
HER Number	
Status	Listed Building- Category A
Easting	169659

Northing	644281
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	Original design John Burnet Snr 1876, revised before execution by John James Burnet c.1877-78, completed early 1880s; lower S wing 1907. Large asymmetrical mansion, mixed French, English and Scottish late Gothic and Early Renaissance motifs, 2 and 3-storey main block with lower wings, single storey and 2-storey with dormerheads forming L-plan forecourt facing E and service court to S. Coursed rubble with ashlar dressings. Battered basecourse, crowstepped gables with segmentally pedimented finials at main block. Slated roofs, big stacks with flues demarcated by V-chamfers and deep battered copes. E (ENTRANCE) ELEVATION: crenellated 2-bay entrance tower with marked entasis, crenellated parapet and tall French roof, open timber porch with baluster columns on stone base. 2 mullioned and transomed windows above. Hall-staircase elevation to left, irregular fenestration with monogrammed roundel. Broad circular angle tower with tall conical roof. Single storey service wing at right angles to SE ending in taller pavilion, pyramid roof truncated by louvered ventilator superstructure. N ELEVATION: circular angle tower on left with simple corbel course at 1st floor level, 3 Georganised windows at ground floor, 3 pedimented dormerhead windows above. Single bay link to gabled section, mullioned and transomed 3-light at ground floor, 2-light above. W (GARDEN) ELEVATION: canted bay of 1-3-1 lights at ground floor corbelled to square in 2 stages at 1st floor, 3-light 1st floor window, central bay with 2-light window at ground floor, low single light above linking to 3-storey angle tower with marked entasis, 3-light windows at ground floor W and S, 2-light on W and 2 single lights on S at 1st, 3 transomed windows on W at 2nd, 4 on W, westmost with bold machicolated-like balcony pierced by quatrefoils at ends only. Elaborately stepped and moulded parapet with waterspouts. Slim angle towerlet at SE rising a storey higher on deep curvilinear corbelling, 2- and 3-light windows with colonnettes at top stage, tall roof clasped by chimney. Half-gable links to lower S wing with 1, 2 and 3-light windows, that at centre 1st with dormerhead, W gable of S wing to right. SERVICE COURT: entered by segmental archway with boldly stepped court and ball finial on east, elevations of court simple with chamfered openings and gabled masonry dormerheads, east gable is clasped by twin towerlets with corbelled top stages and pyramid roofs with ball finials. INTERIOR: hall-staircase largely original, hall is galleried on all sides with convex angles, elegant turned balusters, now painted; interior largely Georganised, drawing room at NW has imported Jacobethan chimneypiece, dining room at SW has an enriched triglyph entablature and consoled chimneypiece, and the circular library in the NE tower has bookcases between the openings. Statement of Special Interest Built for James Macalister Hall of Tangy and Killean, who purchased the estates in 1873 and 1875 respectively. The old house at Killean had stood on the site of the garden cottages and was burned whilst under reconstruction in 1875. Upgraded to Category A 27 April 1992.

Asset/Event Number	38
Asset/Event Name	Killean Home Farm
Type of Asset/Event	Listed Buildings

Gazetteer of Heritage Assets and Events

Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB12006
HER Number	
Status	Listed Building- Category B
Easting	169575
Northing	644538
Parish	Killeean and Kilchenzie
Council	Argyll and Bute
Description	Later 19th cent. Victorian. Large steading along road. 1 storey and loft. Random rubble. Slated roof. Segmental arch to pend in centre, with pyramidal roof. Gablets. Piended wings to rear (with outbuilding in yard). 1 house of 1 1/2 storeys and another of 2.

Asset/Event Number	39
Asset/Event Name	Ballure
Type of Asset/Event	Listed Buildings
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB12013
HER Number	
Status	Listed Building- Category C
Easting	171544
Northing	649517
Parish	Killeean and Kilchenzie
Council	Argyll and Bute
Description	Early 19th cent. mansion. 2 storeys; 3 bays wide, central bay projecting and pedimented, with round-headed doorway framed by architrave-cornice and pilasters; windows altered. Harled. Piended slated roof. Additions at N. end. Statement of Special Interest Built as dower-house of Macdonalds of Largie. References Bibliography RCAHMS Vol 1 No 325

Asset/Event Number	40
Asset/Event Name	Gortinanane House
Type of Asset/Event	Listed Buildings

Gazetteer of Heritage Assets and Events

Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB12014
HER Number	
Status	Listed Building- Category C
Easting	170592
Northing	647451
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	Early 19th cent. Plain 2-storeyed house; 3 bays wide. Harled. Piended slated roof. Large additions at rear.

Asset/Event Number	41
Asset/Event Name	Killean Home Farmhouse
Type of Asset/Event	Listed Buildings
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB13073
HER Number	
Status	Listed Building- Category B
Easting	169550
Northing	644452
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	Mid 19th century, 2-storey, 3-bay farmhouse with classical porch. Squared and coursed rubble with cherry caulking, ashlar dressings. ENTRANCE ELEVATION: pilastered ashlar porch to centre (glazed in). Windwos flanking, 3 windows at 1st floor. SIDE ELEVATION: canted window to right. 4-pane sash and case windows. Grey slate roof with overhanging eaves; rendered coped end stacks with moulded cans.

Asset/Event Number	42
Asset/Event Name	Lodge, Killean House
Type of Asset/Event	Listed Buildings
Date and/or Period	
Listing No./NRHE Number	LB13074; NR64SE 34.01
HER Number	
Status	Listed Building- Category B
Easting	169511

Northing	644422
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	No description held at https://portal.historicenvironment.scot/designation/LB13074 or by Canmore

Asset/Event Number	43
Asset/Event Name	Cour House
Type of Asset/Event	Listed Buildings
Date and/or Period	20TH CENTURY
Listing No./NRHE Number	LB18360
HER Number	
Status	Listed Building- Category A
Easting	182342
Northing	648147
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	1921-2. Oliver Hill, architect. Large, outstanding Arts and Crafts house in an English Mediaeval style. Two storeyed. Whinstone rubble walls and chimneys. Purbeck stone slates. Steel casement windows. Roughly symmetrical entrance front, flanked by round towers and short wings, has door to entrance lobby behind which is a large Hall. There is a Library to the East of the Hall and a long rear wing to the West. In the re-entrant angle is a terrace. Statement of Special Interest An astonishing country house designed by the English architect, Oliver Hill, for J B Gray, a shipping magnate, on the site of an old farmhouse. Hill's drawings at the RIBA include unexecuted drawings for the house by H E Clifford (who built the replacement farmhouse nearby). The house is built of grey-green whin stone, which was quarried on site and appears to grow out of the landscape, especially the entrance elevation where the roofs of low single-storey side wings contrive to give the impression that the house is rising out of the ground. The rear elevation, which faces over steeply falling ground towards the sea, has a more monumental aspect. The architectural massing and composition is vigorously well-handled and strongly influenced by the works of Lutyens, who was a family friend, with heavy battered masonry, horizontal bands of mullioned windows and a strong and varied roof line. Yet while the house is a powerful example of Arts and Crafts architecture, it also looks forward to the modernism that was to mark out Hill's career in the 1930's. While the stone slates and thick masonry give the impression of a traditional building, modern materials were also employed, such as steel window frames and cement pointing (the latter causing severe problems of water penetration). The interior is notable for its generosity of space and Arts-and-Crafts detailing. A perspective drawing of the house was commissioned from F L Griggs by Hill, and exhibited at the Royal Academy. Change of category from B to A, 25 September 2006. References Bibliography ARCHITECTURAL REVIEW 64, 1928. F. A. Walker, The Buildings Of Scotland: Argyll And Bute, (2000) pp 200-1. Oliver Hill's drawings for Cour, Benjamin Tindall Architects (at 2009). RIBA Drawings collection (Oliver Hill with Clifford drawings in collection). Benjamin Tindall Architects CONDITION REPORT, August 1991. Information courtesy of H Nickerson, re material found by Alan Powers at RIBA on original commission.

Gazetteer of Heritage Assets and Events

Asset/Event Number	44
Asset/Event Name	Saddell Parish Church, Dippen
Type of Asset/Event	Listed Buildings
Date and/or Period	19TH CENTURY; 20TH CENTURY
Listing No./NRHE Number	LB18392/ NR73NE 3.00
HER Number	
Status	Listed Building- Category C
Easting	179595
Northing	637701
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	c.1900 Plain Gothic Revival. Coursed rubble; dressed face-work Gabled. Slate roofs Small spire at end. Skews. Lancets. Wheel window. Plain interior. Gallery. Statement of Special Interest Ecclesiastical in use as such. On site of earlier Parish Church (1771). Saddell and Skipness Parish was formed in 1753.

Asset/Event Number	45
Asset/Event Name	Dippen Bridge, Carradale
Type of Asset/Event	Listed Buildings
Date and/or Period	18TH CENTURY
Listing No./NRHE Number	LB18393/NR73NE 16.00
HER Number	
Status	Listed Building- Category B
Easting	179795
Northing	637612
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	18th (?) century Segmental span. Rubble. Flat slab coping to parapets.

Asset/Event Number	46
Asset/Event Name	Grogport Old Manse, Grogport
Type of Asset/Event	Listed Buildings
Date and/or Period	18TH CENTURY
Listing No./NRHE Number	LB18405
HER Number	
Status	Listed Building- Category B
Easting	181053

Gazetteer of Heritage Assets and Events

Northing	643410
Parish	Saddell and Skipness
Council	Argyll and Bute
Description	1772. Plain Georgian. 2 storeys; 3 windows wide. Harled Gabled slate roof. Band-courses. Porch (later). 1-storey piended addition at rear. Statement of Special Interest Farmhouse. Originally the Manse of united parish of Saddell and Skipness. Disused as Manse since c.1940.

Asset/Event Number	47
Asset/Event Name	Hall, Killean
Type of Asset/Event	Listed Buildings
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB43250
HER Number	
Status	Listed Building- Category B
Easting	169578
Northing	644620
Parish	Killean and Kilchenzie
Council	Argyll and Bute
Description	Circa 1895, JJ Burnet. Single storey, 5 bay, cream sandstone ashlar dressing, carefully random schist rubble, rounded corners. Prominent eaves. WEST ELEVATION: to right, 3 tall windows, 8 pane upper sashes 12 pane lowerm regularly spaced. To left, catslide roof over low porch with glazed corner screen and canted bay window with multipane casement glazing. SOUTH ELEVATION: plain bargeboard, jettied canted bay window at upper level, S face tripartite, 18 pane windows lower part of centre opening of casement. Section of eaves above window advanced, half timbering in gabley, terra-cotta finial. One chimney stack on cross wall towards N end with prominent cope, extended in concrete. Roof rosemary tiles. Interior and rear elevation not seen. Statement of Special Interest Part of A group with "Dolls' Houses", steading, ruined medieval chuch and Killean House and lodge.

Asset/Event Number	48
Asset/Event Name	The Doll's Houses, Killean
Type of Asset/Event	Listed Buildings
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB43266

HER Number**Status** Listed Building- Category A**Easting** 169581**Northing** 644687**Parish** Killean and Kilchenzie**Council** Argyll and Bute**Description** Circa 1895, JJ Burnet. Pair of storey and attic semi-detached blocks of U-plan Arts and Crafts cottages. Cream sandstone ashlar dressings and carefully random schist rubble. Each block has mirror-image cottages.

FRONT ELEVATION: LEFT-HAND TYPE, 4 gable prominent eaves, with plain bargeboard supported on corbels, small 4-pane window at attic, with roof extended and piended on left to ground floor which has bipartite corner casement glazing. To right roof carried down on bracket to form porch, with baluster on dwarf wall supporting bargeboard. Porch continues under deep eaves, with tripartite casement window in brick wall. Wooden bench seats below window. Chimney stacks with plain copes and blocking course on gable heads and was wall between houses. 3-pane skylight on upper slope of main roof.

SIDE ELEVATION: single storey, with quadripartite casement corner glazing to right. Small piend above this window, full piend to left, skylight to left. All casements 6-pane.

RIGHT-HAND COTTAGES: mirror images of left.

Interiors not seen.

References**Bibliography**

A remarkably distinguished group of Arts and Crafts buildings housing workers on Killean Estate. Part of A group with school, steading and ruined mdieval church and Killean House and lodge.

Asset/Event Number 49**Asset/Event Name** Killean And Kilchenzie Parish Church, A' Chleit**Type of Asset/Event** Listed Buildings**Date and/or Period** 18TH CENTURY**Listing No./NRHE Number** LB12035**HER Number****Status** Listed Building- Category A**Easting** 168125**Northing** 641806**Parish** Killean and Kilchenzie**Council** Argyll and Bute**Description** 1787. Georgian. Oblong. Harled. Piended slated roof. Round-headed windows. Pedimented projection on E. side; with pilastered and pedimented doorway flanked by round-headed niches.

Belfry Interior: Coombed ceiling. 3 lofts on wooden columns. Mural tablet (1818) to Colonel Norman MacAlister of Clachaig, Governor of Prince Edward Island.

Statement of Special Interest

In ecclesiastical use. On A'Chleit a promontory in Sound of Gigha. Repaired 1945. Upgraded from B to A, 9 June 1995.

References

Bibliography

Groome

T.S.A.

Hay 'Post Reformation Churches'

RCAHMS INV.258.

Asset/Event Number 50

Asset/Event Name Saddell Castle

Type of Asset/Event Listed Buildings

Date and/or Period 16TH CENTURY

Listing No./NRHE Number LB18403

HER Number

Status Listed Building- Category A

Easting 178906

Northing 631545

Parish Saddell and Skipness

Council Argyll and Bute

Description Dated 1508. Restored 1650-2 and in 1890's.

KEEP: Oblong. 4 storeys. Harled. Gabled slate roof; crowsteps. Crenellated and corbelled parapet. Angle-turrets. Cape-house. Doorway with rope-moulding; inset over with date '1508'. Inset, above, of Galley of Lorne. Interior refitted c. 1650. Turnpike stair. Barrel-vaulted ground floor. Kitchen and Hall on 1st floor. Small apartments on upper floors.

OUTBUILDINGS. Of various kinds. Rubble; roofless. Mainly of late 18th and early 19th cents.

CURTAIN WALLS: Harled. Round archway (1 with insets over with date MDCCCXCV) and belfry above).

Statement of Special Interest

Derelict. Built for David Hamilton, Bishop of Argyll (1506-23) when Abbey lands were annexed to Bishopric. Burned by Earl of Sussex 1558. Given in 1650 by Marquis of Argyll to William Ralston of that Ilk, (the pioneer of the plantation of Lowland lairds in Kintyre) who restored it.

References

Bibliography

Groome's Gazetteer A McKerral 'Kintyre' Argyll C.C. 'List' C & D Arch Vol III pp 197-200 (plans, ill) Country Life. Sept. 19, 1947 p.572 (ill) INV 313 RCAHMS.

Asset/Event Number 51

Asset/Event Name LAG KILMICHAEL

Gazetteer of Heritage Assets and Events

Type of Asset/Event	CHURCH (PERIOD UNASSIGNED)(POSSIBLE)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 2.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178600
Northing	640800
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	There appears to have been a church or chapel at Kilmichael (OPS 1854). Lag Kilmichael (NR 786 408) was known as Kilmichael (information from Estate map). Orig Paroch Scot 1854; Name Book 1869. No local information could be obtained regarding church or chapel. Visited by OS (J M) 24 February 1978.

Asset/Event Number	52
Asset/Event Name	GLEANN DROCHAIDE
Type of Asset/Event	SHIELING HUT(S) (POST MEDIEVAL)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 3.00
HER Number	
Status	Non-designated Heritage Asset
Easting	175400
Northing	644300
Parish	KILLEAN AND KILCHENZIE
Council	Argyll and Bute
Description	Centred at NR 754 443, along the banks of a stream, are turf and stone footings - turf predominating - of fourteen shielings. Dimensions range between 3.0 by 2.5m and 4.0 by 3.0m and give a roughly sub-oval plan. Several of the footings surmount pronounced mounds that are almost certainly the remains of earlier shielings. Surveyed at 1:10 000. Visited by OS (J M) 28 February 1978.

Asset/Event Number	53
Asset/Event Name	GLEANN DROCHAIDE
Type of Asset/Event	SHIELING HUT(S)
Date and/or Period	EARLY MODERN

Gazetteer of Heritage Assets and Events

Listing No./NRHE Number NR74SE 4.00

HER Number

Status Non-designated Heritage Asset

Easting 175000

Northing 643700

Parish SADDELL AND SKIPNESS

Council Argyll and Bute

Description Centred at NR 750 438, on level ground above the south side of a stream, are turf and stone footings of about six shielings. The average dimensions are 4.0 by 3.0m giving a roughly sub-oval plan.

Surveyed at 1:10 000.

Visited by OS (J M) 28 February 1978.

Asset/Event Number 54

Asset/Event Name GLEANN DROCHAIDE

Type of Asset/Event SHIELING HUT(S)

Date and/or Period EARLY MODERN

Listing No./NRHE Number NR74SW 17.00

HER Number

Status Non-designated Heritage Asset

Easting 174980

Northing 643720

Parish SADDELL AND SKIPNESS

Council Argyll and Bute

Description Centred at NR 7498 4372, above the east side of a stream, are turf and stone footings of two shieling huts. Each measures approximately 5.0 by 3.0m and is sub-rectangular in plan.

Surveyed at 1:10 000.

Visited by OS (J M) 28 February 1978.

Asset/Event Number 55

Asset/Event Name GROGPORT

Type of Asset/Event CIST

Date and/or Period

Listing No./NRHE Number NR84SW 2.00

HER Number

Status Non-designated Heritage Asset

Easting 180790

Northing 644350

Gazetteer of Heritage Assets and Events

Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	(NR 8079 4435) About 90m NW of the bridge that carries the public road over the Allt Sunadale at Grogport, and at a height of 10m OD, there are the remains of a cist known locally as "The Sailor's Grave". It measures 1.2m by 0.74m internally with the long axis aligned roughly N and S, and is built of thin slabs, measuring between 0.08m and 0.18m in thickness; the side slabs are each 1.4m long and slightly overlap the N and S end-slabs, which are 0.7m and 0.5m long respectively. The cap-stone, which projects about 0.05m above ground, is broken, and two portions of it now partially cover the cist, one at either end, with a gap of 0.4m between them. The interior is filled with rubble and the remaining fragments of the cover slab. RCAHMS 1971, visited 1963; Information from D Colville 1960; Information from RCAHMS 6" map. No change to RCAHMS (1971) report. Surveyed at 1:10 000. Visited by OS (JM) 23 February 1978.

Asset/Event Number	56
Asset/Event Name	GROGPORT
Type of Asset/Event	CAIRN, CIST
Date and/or Period	
Listing No./NRHE Number	NR84SW 3.00
HER Number	
Status	Non-designated Heritage Asset
Easting	180810
Northing	644300
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	(NR 8081 4430) Cairn with cist exposed. Information from RCAHMS 6" map; Information from R B K Stevenson September 1972. A turf-covered cairn, with a cist exposed, it situated on the edge of a steep bank along the NE side of a stream. It measures 10.5m NW-SE by 9.0m transversely and 0.7m high. Slightly mutilated in the SE quadrant, but the centre appears undisturbed. Part of the SW quadrant of the cairn has slipped into the stream revealing a cist measuring 0.8m NE-SW by 0.5m transversely, and 0.5m deep. It is placed on the pan with no apparent bottom lining. The SW end-stone is missing, but the remaining sides and capstone are in situ. Surveyed at 1:10 000. Visited by OS (JM) 24 February 1978.

Asset/Event Number	57
Asset/Event Name	DIPPEN HILL

Type of Asset/Event	PLATFORM(S)
Date and/or Period	
Listing No./NRHE Number	NR73NE 1.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179700
Northing	636800
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 797 368. About twenty scooped platforms occur on the south and south-east slopes of the hill. Ten platforms cut into the hillside cover an area quarter of a mile square between 30m and 100m asl. Diameters vary from 8m to 10.5m. A narrow trench cut on one platform revealed a hard gritty floor. A post-hole, 25cms deep, and two socket holes each 8cms deep were cut into it. E B Rennie 1974a; 1974c; M Daniels 1974. Centred at NR 797 368, along the east and south-east slopes of Cnoc na Dippen in an area of heather and scrub, some fifteen circular or oval platforms, scooped into the hill-slope, can be identified. They vary in size from 7.5m by 6.5m to 10.0m by 8.5m; the longer axis of the oval platforms is in each case parallel to the contour. In a number of instances a 'gap' between the back and front scarps, at the change of slope, probably indicates the entrance. The back and front scarps achieve a maximum height of 0.8m. In a few examples some stone, possibly of a revetment, is visible in the front scarp. The date and purpose of these platforms remains uncertain. In their size, shape and disposition they strongly resemble early hut platforms similar to the 'unenclosed' settlements of Peeblesshire. The trial excavations of E B Rennie and M Daniels (1974) revealing 'a hard gritty floor... a post hole... and two socket holes' tend to corroborate this classification. There appear to be a number of lynchets associated with the platforms, and there is a possibility that some of the natural terracing of the hillslope, noticeably at NR 797 370, may have been accentuated by cultivation. Conversely in a number of the platforms the back scarp is unusually sharp inferring a more recent construction. This possibility is further supported by the apparent breaching of a medieval or post-medieval field bank by one of the scooped platforms at NR 797 3665. The margins of this platform, however, are ill-defined compared with the others, and it may in fact be the result of surface quarrying. They may be charcoal- burning platforms, but there is a marked absence of black earth which one might expect. Surveyed at 1:2500. Visited by OS (JB) 16 March 1978. There are 19 Platforms within an area of 1 hectare. They are all apparently earth banked. They are graded in size - viz 1 of 10m, 2 of 9.1m, 5 of 8.2m, 5 of 7.3m, 4 of 6.4m, and 1 of 5.5m. They all lie between the 50m contour and the 120m contour. 1 quadrant of Platform 12 was excavated in July. It had a diameter of 9.1m, and lay at 80m OD under a heather cover. On excavation there was no evidence of burning to make charcoal but an extremely hard floor with charcoal patches was uncovered. Post holes were found above the lip at the front and sides but no post holes were centrally placed in the floor. However the charcoal patches were in the position, where roof-support post holes would have been expected. There was a probable palisade ledge below the front lip forming a 'stepped' construction.

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No finds were collected but charcoal was taken from the floor and will be sent for dating.

E Rennie 1988.

Asset/Event Number	58
Asset/Event Name	RHONADALE WOOD
Type of Asset/Event	PLATFORM(S)
Date and/or Period	
Listing No./NRHE Number	NR73NE 10.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178700
Northing	638000
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	A possible charcoal burner's platform has been found in the plantation on the hillslope opposite NR73NE 9. G Siggins 1986. NR73NE 10 787 380 and 788 378 Grid reference of NR 788 382, quoted in DES (1986), is erroneous; there are two platforms, at approximately NR 787 380 and NR 788 378. Information from G Siggins to Dr J N G Ritchie, 8 May 1989.

Asset/Event Number	59
Asset/Event Name	CHURCH WOOD
Type of Asset/Event	PLATFORM(POSSIBLE)
Date and/or Period	
Listing No./NRHE Number	NR73NE 11.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179200
Northing	637800
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	There is a possible platform in the fire lane at approximately NR 792 378. Information from G Siggins to Dr J N G Ritchie, 8 May 1989.

Gazetteer of Heritage Assets and Events

Asset/Event Number	60
Asset/Event Name	CARRADALE
Type of Asset/Event	FINDSPOT, KNIFE (FLINT), SCRAPER (TOOL) (FLINT)
Date and/or Period	
Listing No./NRHE Number	NR73NE 12.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179200
Northing	638700
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	A large flint end-scraper and a flint knife were found in 1957 in the field adjoining NR73NE 9, at that time used as a forestry nursery. E R Cregeen 1956; G Siggins 1988

Asset/Event Number	61
Asset/Event Name	RHONADALE
Type of Asset/Event	MILLSTONE QUARRY
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR73NE 6.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178580
Northing	639230
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	An unfinished millstone measuring about 1.5m in diameter and 0.3m. in thickness lies in the turf 400m N of Rhonadale farmhouse and just outside a Forestry Commission plantation. The exposed face of the stone and the central orifice show drill-marks, and this suggests that the millstone is of 18th or 19th century date. Part of what appears to be a second millstone may be seen protruding through the turf in the immediate vicinity of the first. Both stones were probably quarried from the adjacent rock-face to the N; they may have been intended for use at the mill that formerly existed at Rhonadale. Visited June 1967. RCAHMS 1971. As described. Visited by OS 16 March 1978.

Asset/Event Number	62
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Asset/Event Name	CARRADALE
Type of Asset/Event	PIT(S), ORGANIC MATERIAL (CHARCOAL), UNIDENTIFIED POTTERY
Date and/or Period	BRONZE AGE
Listing No./NRHE Number	NR73NE 9.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179100
Northing	638600
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	In December 1985 charcoal layers and pits were noticed in the river bank where a loop of the Carradale Water has been enlarged and altered in shape over the past 20 years. Site 'A' presents a solid black layer of charcoal sloping steeply down from the present ground level for more than a metre and leveling out just above boulder clay. Following the same direction is a broad band of brown soil containing charcoal and fragments of human bone. A hammer-stone and part of a flat centrally pierced stone disc were retrieved from the brown layer and from the clay below it enough sherds to complete the profile of a 14cm. diameter plain, flat-based vessel, probably late Bronze Age. One rim sherd of a larger pot was found in a fall of earth. Site 'B' is about 50m distant and separated by a fast eroding neck of land and consists of two pits, one U-shaped and the other tilted bowl-shape. Both contain heat split stones in a matrix of soil and charcoal. The limits of the second appear to be defined by unburned stones and there is a deposit of similar rubble in the middle with pieces of charcoal up to 1cm. in size amongst it. A third layer is just appearing between the two. G Siggins 1986. Four hearths eventually appeared at Site B and evidence of iron making, though no visible smelter yet identified. Erosion over winter 1986-87 and since, has revealed a scatter of charcoal continuing northwards from the hearths and round a newly formed promontory where a pile of large stones was exposed on a broad terrace of iron stained gravel which overlies clay beds containing an abundance of well-preserved vegetation - leaves, twigs, nuts, etc., 2m-3m below present ground level. A similar pile of stones was lifted by JCB during drainage operations two fields away to the N this summer. At present these piles of stones, though suggesting a collapsed structure can only be described as 'interesting'. Pit 5, recently located, differs from the others. It seems disturbed; there are concentrations of charcoal and stones at one side and pink-red burned clay in the centre. A forked branch passes through the pit (cf Pit B3). G Siggins 1987. The Carra Water has continued to destroy two sides of this field. This year a third area of interest 'C', has been added to 'A'. 'A' still yields charcoal and fragments of calcined bone - human and animal - and last December a sherd of coarse, brownish-grey pottery was found on a gravel bank in front of it. Of a total of six features at 'B' between December 1985 and December 1987 only a hearth and a large pit remain. The latter, B5, is roughly V shaped and contains a mixture of debris such as decayed wood, stones and patches of burned soil and charcoal. It is unlike the more structured pits and hearths, now destroyed which were associated with ironmaking. A C14 date of 2370+- 100 bp (GU2410) was obtained from B5. 'C' has appeared in the crumbling river terrace to the east of 'A' and consists of a dark line, 3-4cms thick, running some 30cms below the surface of the field. A small trench, dug well away from the edge of the river cutting showed that a compacted layer containing a few flakes of charcoal and fragments of iron continues under the field. The layer is interrupted by old drainage ditches from an adjoining field.

G Siggins 1988.

Grid reference of NR 792 386, quoted in DES is erroneous; it should read NR 791 386.

Information from G Siggins to Dr J N G Ritchie, 8 May 1989.

NR 792 386 There have been no developments at parts 'A' and 'C' but in October 1988 rough weather with flooding completely covered 'B' with sand almost levelling it with the field that overlies the occupations. At the same time new features appeared in section in the riverbank on a third side of the field where a large promontory had been washed away the previous spring, 'D'. These consist of a v-shaped pit of brown soil with some charcoal and a few stones; a 3m long horizontal band of irregular depth containing charcoal scatters and pockets, and a very dense scoop-shaped deposit of blackened soil with large pieces of charcoal and projections above and below as if wooden stakes had been burned in situ. There is also an intrusion of soft red clay some 2m wide at its top which interrupts the otherwise undisturbed layers of terrace material. Though this appears natural (red clay occurs in quantity further down river and was used for various purposes in the recent past), flecks of charcoal can be seen on close inspection throughout the deposit and a substance like slightly hardened clay runs through it in two places to the bottom where it spreads as if poured and set.

Small finds at 'D' include a few fragments of iron and some slag plus other evidence of iron making activity and a sherd of worn, buff-coloured pottery. From shallow water where 'B' and 'D' conjoin the upper stone of a rotary quern was retrieved, much waterworn but complete with hopper and handle hole. It was supported on its edge against a heavy stone block which has one flat surface - possibly a saddle quern. On a gravel bank in front of 'B' a wedge-shaped fragment of a possible spindle quern was also found, a piece of iron still in place at what would have been the centre.

G Siggins 1989a.

There have been more episodes of severe flooding than usual over the past twelve months. Parts 'A' and 'C' have not been greatly affected, being more sheltered from the full onslaught of the weather, but the stretch of 'B' which had contained the most impressive and undisturbed evidence for ironmaking no longer exists. The features at 'D', including two post holes which appeared later, have also gone, though there is still a good deal of thickly scattered charcoal where 'D' merges with the remains of 'B'. A black line has now appeared in the northward continuation of the riverbank from 'D'; this is interrupted by a square sectioned possible socket, a pointed post hole, and a small pit of irregular shape and there is some charcoal at its furthest extent.

A geophysical survey by HBM shows that areas of possible archaeological interest may yet lie beneath the remainder of the field and it is hoped these will be investigated by excavation in due course.

G Siggins 1990.

A concentration of archaeological features at Achnasavil, Carradale, which has been recorded since 1985, is being rapidly destroyed by river erosion. Limited excavations were carried out in 1991 in order to date and characterise the nature of the site. Four periods of activity have been identified: cultivation in the Neolithic period; an occupation in the early Bronze Age; a domestic settlement in the late Bronze Age; and an Iron Age occupation. A programme of morphological mapping and dating of valley floor terraces in lower Carradale showed that the present day flood plain of the Carra Water was created by the early Neolithic period and the morphology of the valley floor has changed little since that time.

S Carter and R Tipping 1993.

Four small areas were excavated to investigate features revealed by river erosion over a number of years. A radiocarbon date of 2370 +/- 100 bp has been obtained from a previously recorded pit fill. Groups of plough truncated post holes and shallow pits were located but very few finds were recovered. A substantial though poorly preserved prehistoric site is indicated.

Further charcoal samples have been submitted for dating.

Sponsor: HS.

S Carter 1991b.

Following excavations in the field overlying the occupation, and a riverbank fall, a post hole packed with stones and two irregular-shaped pits were exposed. A well-worn whetstone and a convex flint scraper were also found in tumble at this point.

G Siggins 1991a.

A stone-filled pit in the riverbank 13m N of the original 1985 find extends to 80cm beneath the field. The stones are packed in with small, thin ones filling gaps. One extra large stone is well-bedded and quite stable after several months of protruding from the riverbank. Among the stones is black soil with pockets of charcoal; a few bone fragments and a small sherd were also found. A band of dark soil with small stones is appearing 1.20m to the S - a quite separate feature.

Radiocarbon dates in 1991 (supra) show that the site was under cultivation in the Neolithic and occupied early and late in the Bronze Age; with the Iron Age radiocarbon date obtained from features now destroyed by erosion, the multi-period nature of the site is now established.

G Siggins 1992.

Asset/Event Number	63
Asset/Event Name	LOCH A' CHUIRN
Type of Asset/Event	CAIRN (POSSIBLE)
Date and/or Period	
Listing No./NRHE Number	NR74NE 4.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178900
Northing	646200
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Loch a Chuirn or Loch Carran (name given on estate map). The former spelling (that given by local people) means Cairn Loch. Name Book, Argyll. A thorough search, assisted by Mr and Mrs JG Scott, Glasgow, failed to reveal any trace of a cairn and local enquiry failed to elicit any information. A stone-built sheep-fank at NR 7880 4681 might have been constructed from the stones of a cairn but we had no time to examine it. In recent years the loch has been drained by the Forestry Commission, and the surrounding area is planted with young trees. Information from D Colville to Ordnance Survey, 1960.

Asset/Event Number	64
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Gazetteer of Heritage Assets and Events

Asset/Event Name	AUCHENBRECK
Type of Asset/Event	ENCLOSURE(S), STONE SETTING
Date and/or Period	NEOLITHIC- BRONZE AGE
Listing No./NRHE Number	NR74SE 8.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177900
Northing	644200
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Clear-felling on an E-facing hillside overlooking Auchenbreck farm is revealing ruinous structures: (1) D-shaped; sub-circular, hollowed area enclosed by random stone walling; possible entrance on south side; stone blocks of a natural outcrop form one straight side. Internal measurement back to front 4m. (2) Oval enclosure measuring 11m by 9m. (3) A small very mutilated rectangular enclosure. (4) A setting of stones, some on edge, approximately 1m in diameter. Other structures have been seen and await examination when debris can be cleared. G Siggins 1991.

Asset/Event Number	65
Asset/Event Name	NARACHAN
Type of Asset/Event	SHIELING HUT(S)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74NE 1.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177000
Northing	646620
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Shielings (NAT) (A single stylised rectangular feature shown) OS 1:10,000 map (1980). *LB *06/03/2024 *Historic map *Area annotated as "Narachan" , and depicted as a polygonal impooved enclosure sub-divided into three areas with a sheepfold in the NE corner, and a building in the western extent. *Argyllshire, Sheet CCXXXVI Survey date: 1867, Publication date: 1870

Asset/Event Number	66
Asset/Event Name	KNOCK KILMICHAEL

Gazetteer of Heritage Assets and Events

Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 5.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178680
Northing	640540
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Unnamed, unroofed rectangular building. OS 1:10,000 map, (1980) Knock Kilmichael: a small farmhouse. Name Book 1869. A farmstead, comprising two roofed buildings, one unroofed building and one unroofed structure is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1869, sheet ccxli). One unroofed building is shown on the current edition of the OS 1:10000 map (1980). Information from RCAHMS (AKK) 22 October 1998.

Asset/Event Number	67
Asset/Event Name	BRACKLEY, BURIAL GROUND
Type of Asset/Event	BURIAL GROUND
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 6.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179390
Northing	641820
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR74SE 6 7939 4182 No tradition of antiquity appears to be attached to this burial-ground. The earliest legible tombstone is dated 1734. RCAHMS 1971, visited May 1962.

Asset/Event Number	68
Asset/Event Name	LAG KILMICHAEL
Type of Asset/Event	ENCLOSURE

Gazetteer of Heritage Assets and Events

Date and/or Period**Listing No./NRHE Number** NR74SE 7.00**HER Number****Status** Non-designated Heritage Asset**Easting** 178630**Northing** 640820**Parish** SADDELL AND SKIPNESS**Council** Argyll and Bute

Description Sub-rectangular enclosure on a near-island formed by a loop in the Kilmichael river, a tributary of the Carra Water. Stonework substantial, up to 1m high in places. Entrance on S. Enclosure lies E-W, occupies all available land. Signs of buried foundations at E end. Well outside, possibly stone-lined. Natural causeway with track leads from E corner to top of river terrace, where there is possible buried masonry.

G Siggins 1989.

Asset/Event Number 69**Asset/Event Name** AN CAISTEAL**Type of Asset/Event** NATURAL FEATURE**Date and/or Period** UNKNOWN**Listing No./NRHE Number** NR74NE 5.00**HER Number****Status** Non-designated Heritage Asset**Easting** 177100**Northing** 645300**Parish** SADDELL AND SKIPNESS**Council** Argyll and Bute

Description An Caisteal 'The Castle' - a bold rocky craig.

Name Book, Argyll, 1869.

Asset/Event Number 70**Asset/Event Name** LOCH ULAGADALE**Type of Asset/Event** SHIELING HUT(S)**Date and/or Period** EARLY MODERN**Listing No./NRHE Number** NR74NW 20.00**HER Number****Status** Non-designated Heritage Asset**Easting** 174800**Northing** 646300**Parish** KILLEAN AND KILCHENZIE

Gazetteer of Heritage Assets and Events

Council	Argyll and Bute
Description	Shielings: details held by Strathclyde Regional Council SMR.
	SRC SMR 1993

Asset/Event Number	71
Asset/Event Name	DIPPEN BAY
Type of Asset/Event	STONE
Date and/or Period	
Listing No./NRHE Number	NR83NW 8.00
HER Number	
Status	Non-designated Heritage Asset
Easting	180100
Northing	636400
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 801 364 Feal surfaced stone amongst pebble shore above high tide mark. Surface has 9 shallow cups surrounded by a continuous line. May be recent. Found by Mr and Mrs Hough.
	Sponsor: Kintyre Antiquarian & Natural History Society.
	F Hood 1997
	NR 801 364 Site identified as part of a coastal zone assessment survey.
	M Cressey, S Badger, 2005.

Asset/Event Number	72
Asset/Event Name	ALLT BREAC-LARAICH
Type of Asset/Event	BLOOMERY
Date and/or Period	
Listing No./NRHE Number	NR74SE 9.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177920
Northing	644830
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR.
	NR 7792 4483 Allt Breac-laraich Bloomery.

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WoSAS 1997

Asset/Event Number	73
Asset/Event Name	ALLT BUIDHE
Type of Asset/Event	SHIELING HUT(S)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 10.00
HER Number	
Status	Non-designated Heritage Asset
Easting	176800
Northing	641280
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7680 4128 Allt Buidhe Shieling. WoSAS 1997

Asset/Event Number	74
Asset/Event Name	ALLT DEUCHERAN
Type of Asset/Event	SHIELING HUT(S)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 11.00
HER Number	
Status	Non-designated Heritage Asset
Easting	176160
Northing	643200
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7616 4320 Allt Deucheran Shieling. WoSAS 1997

Asset/Event Number	75
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Asset/Event Name	ALLT FHEANNAG
Type of Asset/Event	DYKE, SHIELING HUT (POSSIBLE)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 12.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177370
Northing	643610
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7737 4361 Shieling hut/building; fragment of dyke. WoSAS 1997

Asset/Event Number	76
Asset/Event Name	AUCHENBRECK
Type of Asset/Event	BLOOMERY
Date and/or Period	
Listing No./NRHE Number	NR74SE 13.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178270
Northing	643410
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7827 4341 Bloomery. WoSAS 1997

Asset/Event Number	77
Asset/Event Name	FARACHAN MILL, 'DEUCHERAN BEG'
Type of Asset/Event	FARMSTEAD
Date and/or Period	
Listing No./NRHE Number	NR74SE 14.00

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HER Number	
Status	Non-designated Heritage Asset
Easting	177930
Northing	643560
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7793 4356 Deserted farmstead. West of Scotland Archaeology Service 1997 Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7795 4355 Farmstead. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	78
Asset/Event Name	FARACHAN HILL, 'DEUCHERAN MOR'
Type of Asset/Event	FARMSTEAD, SETTLEMENT
Date and/or Period	
Listing No./NRHE Number	NR74SE 15.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177670
Northing	643320
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7767 4332 Deserted settlement. (centre) West of Scotland Archaeology Service 1997 Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development..

Gazetteer of Heritage Assets and Events

NR 7769 4333 Farmstead.

A report has been lodged with the NMRS.

Sponsor: Natural Power Company.

B Glendinning 1998

Asset/Event Number	79
Asset/Event Name	GLEANN BUIDHE
Type of Asset/Event	SHIELING HUT
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 16.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177180
Northing	642070
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	The following site in Argyll and Bute has been identified and recorded during fieldwork carried out by the staff of West of Scotland Archaeology Service. Full details are available in the West of Scotland Archaeology Service SMR. NR 7718 4207 Shieling. WoSAS 1997

Asset/Event Number	80
Asset/Event Name	CRAIGMORE
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74NE 7.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178000
Northing	645490
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 736 494-NR 793 384 In January 1995 a desk-bound assessment was conducted of a 500m wide corridor centred upon the proposed route of an overhead electricity line running between the proposed windfarm at Largie Moor (CFA 1994) and the electricity substation at Carradale. Fifteen sites and monuments were recorded within and adjacent to this corridor. New sites were restricted to post-medieval settlement recorded on Ordnance Survey, earlier map coverage and vertical aerial photographs.

NR 780 454 The deserted farmstead of Craigmore is depicted as one roofed and two unroofed buildings and annotated 'Creagmhoir' on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet CCXXXVI).

A detailed report will be lodged with NMRS.

Sponsor: EcoGen Limited.

A J Dunwell 1995.

Asset/Event Number	81
Asset/Event Name	BREACHLARACH
Type of Asset/Event	FARMSTEAD, LIME KILN
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74NE 8.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177800
Northing	645000
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 736 494-NR 793 384 In January 1995 a desk-bound assessment was conducted of a 500m wide corridor centred upon the proposed route of an overhead electricity line running between the proposed windfarm at Largie Moor (CFA 1994) and the electricity substation at Carradale. Fifteen sites and monuments were recorded within and adjacent to this corridor. New sites were restricted to post-medieval settlement recorded on Ordnance Survey, earlier map coverage and vertical aerial photographs. NR 778 450 The limekiln/deserted farmstead of Breachlarach is depicted as two unroofed buildings with the kiln at the NE end of the larger structure on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet CCXXXVI). A detailed report will be lodged with NMRS. Sponsor: EcoGen Limited. A J Dunwell 1995.

Asset/Event Number	82
Asset/Event Name	LURGAN
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74NE 6.00
HER Number	
Status	Non-designated Heritage Asset

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Easting	176470
Northing	645840
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 736 494-NR 793 384 In January 1995 a desk-based assessment was conducted of a 500m wide corridor centred upon the planned route of an overhead electricity line running between the proposed windfarm at Largie Moor (CFA 1994) and the electricity substation at Carradale. Fifteen sites and monuments were recorded within and adjacent to this corridor. New sites were restricted to post-medieval settlement recorded on Ordnance Survey, earlier map coverage and vertical aerial photographs. NR 7647 4584 The deserted farmstead of Lurgan is depicted as unroofed and annotated 'Lorgie (Ruin)' on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet CCXXXVI). A detailed report will be lodged with NMRS. Sponsor: EcoGen Limited. A J Dunwell 1995.

Asset/Event Number	83
Asset/Event Name	AUCHENFRAOCH
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 17.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178780
Northing	642470
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 736 494-NR 793 384 In January 1995 a desk-bound assessment was conducted of a 500m wide corridor centred upon the proposed route of an overhead electricity line running between the proposed windfarm at Largie Moor (CFA 1994) and the electricity substation at Carradale. Fifteen sites and monuments were recorded within and adjacent to this corridor. New sites were restricted to post-medieval settlement recorded on Ordnance Survey, earlier map coverage and vertical aerial photographs. NR 787 425 The deserted farmstead of Auchenn is depicted as a roofed building with one roofed, one partially roofed and one unroofed outbuildings on the 1st edition of the OS 6-inch map (Argyllshire 1869, sheet CCXLII) and annotated as 'Auchenrioch'. It is noted in the OS Name Book as 'a good farm house with out offices' (ONB 1868). A detailed report will be lodged with NMRS. Sponsor: EcoGen Limited. A J Dunwell 1995.

Gazetteer of Heritage Assets and Events

Asset/Event Number	84
Asset/Event Name	KIRNASHIE
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 18.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179400
Northing	641200
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 736 494-NR 793 384 In January 1995 a desk-bound assessment was conducted of a 500m wide corridor centred upon the proposed route of an overhead electricity line running between the proposed windfarm at Largie Moor (CFA 1994) and the electricity substation at Carradale. Fifteen sites and monuments were recorded within and adjacent to this corridor. New sites were restricted to post-medieval settlement recorded on Ordnance Survey, earlier map coverage and vertical aerial photographs. NR787 425 The deserted farmstead of Kirnashie is depicted as a roofed building on the 1st edition of the OS 6-inch map (Argyllshire 1869, sheet CCXLII). A detailed report will be lodged with NMRS. Sponsor: EcoGen Limited. A J Dunwell 1995.

Asset/Event Number	85
Asset/Event Name	RHONADALE MILL
Type of Asset/Event	MILL
Date and/or Period	
Listing No./NRHE Number	NR73NE 14.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178800
Northing	638700
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 736 494-NR 793 384 In January 1995 a desk-bound assessment was conducted of a 500m wide corridor centred upon the proposed route of an overhead electricity line running between the proposed windfarm at Largie Moor (CFA 1994) and the electricity substation at Carradale. Fifteen sites and monuments were recorded within and adjacent to this corridor. New sites were restricted to post-medieval settlement recorded on Ordnance Survey, earlier map coverage and vertical aerial photographs. NR 788 387 Rhonadale mill.

A detailed report will be lodged with NMRS.

Sponsor: EcoGen Limited.

A J Dunwell 1995.

Asset/Event Number	86
Asset/Event Name	CARRADALE, CARRADALE HOUSE
Type of Asset/Event	COUNTRY HOUSE
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	LB18394; NR83NW 11.00
HER Number	
Status	Listed Building- Category C
Easting	180674
Northing	637787
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Naomi Mitchison and her husband bought the Carradale Estate in 1937 as their Scottish country home. Lady Mitchison lived mainly at Carradale in her later years and following her death the estate was sold and the contents of the house dispersed. The Royal Commission took the opportunity to record the house and its contents after her death. With the help of Mr and Mrs Salins who had looked after Lady Mitchison it was possible to photograph the rooms much as she had occupied them. The house occupies a wonderful position looking due South over its own bay with spectacular views all around. The original house dates from the Mid Eighteenth Century and now forms the northern half of the main house. Its North façade appears to have been the entrance front with an advanced central bay containing the main entrance. Nineteenth Century plans show the remains of a perron stair which may have served the entrance. An Eighteenth Century key-stoned fireplace survives behind a cupboard in the original entrance hall now the TV room. The house appears to have had a hipped roof the present gables and bartisans having been added by David Bryce in the Nineteenth Century. The original house seems to have been similar to Saddell House further up the coast. David Bryce was employed in 1844 to reorder and extend the house. He moved the entrance to the South creating a much more picturesque approach from the Southwest. He added a new Entrance hall leading into a saloon with a new top lit stair hall to the North and a large double aspect Drawing Room to the West. He also created a service stair serving every level of the house and a large new service courtyard to the Northeast. The original Dining Room lost its views to the South during the alterations so Bryce threw an ample bay out to the East catching an unexpected view of the island of Arran. A conservatory was added to the West leading off the Sitting Room sometime in the later Nineteenth Century In about 1900 a single storey wing was added to the East off the entrance hall providing a cloakroom and a spacious library. This was the extent of the house acquired by the Mitchisons in 1937. They employed Powys and Macgregor of London to raise the floor level of the Victorian kitchen so that it was on the same level as the Dining Room and installed a new central heating system. In 1969 there was a fire that destroyed the service courtyard but thankfully did not effect the main house. The Mitchisons employed William Cadell of Linlithgow to design a new three storeyed service range in 1970. This provided a large modern open plan well lit kitchen adjacent to the Dining Room.

What made Carradale House such a fascinating topic for an in depth photographic survey was the way the Mitchisons used the house and Lady Mitchison's inherently stylish decoration. The exuberant wallpaper in the stair hall was found in London. Antique family furniture, Lady Mitchison was a Trotter of Dreghorn, is mixed with Twentieth Century classics including chairs by Basil Spence and a sideboard by Gordon Russell as well as more utilitarian and rustic pieces.

Artists were invited to stay and their work adorns the walls. Most notable of these was Wyndham Lewis who drew the children and painted a glorious picture of Lady Mitchison which prompted the colour scheme of the Sitting Room where it hung. C E B Brett carried out a series of murals including "Homage A Monsieur Bosch" a version of the garden of earthly delights set in the grounds of Carradale which hangs appropriately in the hall, the principal route to the garden. A leopard prowls in his amusingly littered cage in the saloon fireplace. A dog kennel under the stairs is concealed behind a row of shops including "Mitchison's Bizarre Bazaar and in the Television Room on a large cupboard Carradale House is set in a mythological landscape.

This was primarily a holiday home and it has a relaxed amusing ambience where the precious and the mundane jostle. The David Bryce designed baronial entrance could only be reached on foot everyone used the back door. The library was not as one would expect where she wrote but the home of the ping-pong table. Her main writing table was in the South facing bay window of the Drawing Room but there were a variety of desks and tables throughout the house where she wrote should the muse strike.

The diverse collections have been dispersed and the estate has found enthusiastic new owners. The photographic record carried out the Royal Commission provides a lasting record of this most unusual artistic holiday house on the West Coast of Kintyre.

Asset/Event Number	87
Asset/Event Name	CARRADALE, OLD SCHOOL ROOM
Type of Asset/Event	SCHOOLROOM
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	NR73NE 17.00
HER Number	
Status	Non-designated Heritage Asset
Easting	180000
Northing	638200
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	photographs available here: https://canmore.org.uk/site/144866/

Asset/Event Number	88
Asset/Event Name	CRUACH NA NAICH
Type of Asset/Event	QUARRY
Date and/or Period	
Listing No./NRHE Number	NR74SW 38.00
HER Number	
Status	Non-designated Heritage Asset

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Easting	174500
Northing	644000
Parish	KILLEAN AND KILCHENZIE
Council	Argyll and Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7450 4400 Quarry. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	89
Asset/Event Name	CRUACH NA NAICH
Type of Asset/Event	QUARRY
Date and/or Period	
Listing No./NRHE Number	NR74SW 39.00
HER Number	
Status	Non-designated Heritage Asset
Easting	174630
Northing	644100
Parish	KILLEAN AND KILCHENZIE
Council	Argyll and Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7463 4410 Quarry. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	90
Asset/Event Name	CRUACH NA NAICH
Type of Asset/Event	QUARRY
Date and/or Period	
Listing No./NRHE Number	NR74SW 40.00
HER Number	
Status	Non-designated Heritage Asset

Gazetteer of Heritage Assets and Events

Easting	174760
Northing	643650
Parish	KILLEAN AND KILCHENZIE
Council	Argyll and Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7476 4365 Quarry. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	91
Asset/Event Name	LAG KILMICHAEL
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 19.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178680
Northing	640880
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	A farmstead, comprising two roofed buildings, one partially roofed and one unroofed building is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1869, sheet ccxlii). Three roofed buildings and four enclosures are shown on the current edition of the OS 1:10000 map (1980). Information from RCAHMS (AKK), 22 October 1998

Asset/Event Number	92
Asset/Event Name	BEINN BHREAC
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74NE 9.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178810
Northing	646800

Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Field Visit (1 June 2008 - 1 February 2010) Cultural Heritage assessment for Cour wind Farm development. The assessment will form part Environmental Statement, due to submitted in 2009. The Cultural Heritage assessment will identify all cultural heritage features within the study area with a field visit, and within 15km of the proposed development, and assess the impact upon these features from the new development. Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010. Field Visit (1 June 2008 - 1 February 2010) Field survey identified the remains of two buildings and a stone bank. A dry-stone rubble built rectangular building with attached enclosure (3a) at NR 78823 46797. The building is 18m by 6m externally with walls 0.7m wide standing to a height of 1.5m . There is no discernible entrance, or any window openings in the upstanding walls, although the wall is partially destroyed on the northwest side. The enclosure is circa 15m by 20m with walls 1m high and is cut through by the burn. The remains of a second building with attached enclosure (3b) at NR 8798 46797. The building is 11m by 4m externally with grassed over stone walls 1m wide and 0.4m high. The enclosure is obscured by dense vegetation, although grass covered banks are visible in places. The enclosure measures circa 15m by 11m (externally) with banks up to 0.4m high. To the northwest of 'Beinnbhreac' at NR 8658 46893 is a turf-covered stone bank (3c) 1m to 1.5m wide and 0.4m to 0.6m high. Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010 Note RCAHMS First Edition Survey Project A farmstead annotated 'Ruin', comprising one unroofed building and one enclosure is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet ccxxxvi). One unroofed building and three enclosures are shown on the current edition of the OS 1:10000 map (1991). Information from RCAHMS (AKK) 22 October 1998
Asset/Event Number	93
Asset/Event Name	AUCHENBRECK
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74SE 20.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178360

Gazetteer of Heritage Assets and Events

Northings	644030
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	A farmstead, comprising three roofed buildings, one unroofed building and three enclosures is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet ccxxxvi). Two roofed buildings and one partially roofed building enclosing part of a courtyard are shown on the current edition of the OS 1:10000 map (1988).
	Information from RCAHMS (AKK) 22 October 1998

Asset/Event Number	94
Asset/Event Name	GORTON COTTAGE
Type of Asset/Event	FARMSTEAD
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR83NW 10.00
HER Number	
Status	Non-designated Heritage Asset
Easting	180060
Northings	638180
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	A farmstead annotated 'Ruins', comprising two unroofed buildings is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1869, sheet ccxlii). Two roofed buildings are shown on the current edition of the OS 1:10000 map (1980).
	Information from RCAHMS (AKK) 22 October 1998

Asset/Event Number	95
Asset/Event Name	TORRISDALE, TORRISDALE SQUARE
Type of Asset/Event	FARMSTEAD
Date and/or Period	19TH CENTURY
Listing No./NRHE Number	NR73NE 18.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179665
Northings	636453
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	No further information held at https://canmore.org.uk/site/157557/

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Asset/Event Number	96
Asset/Event Name	CARRADALE, CARRADALE HOUSE, STABLES
Type of Asset/Event	STABLE
Date and/or Period	
Listing No./NRHE Number	NR83NW 11.01
HER Number	
Status	Non-designated Heritage Asset
Easting	180640
Northing	637900
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Photographs available at: https://canmore.org.uk/site/183656/

Asset/Event Number	97
Asset/Event Name	CARRADALE, CARRADALE HOUSE, GARDENER'S COTTAGE
Type of Asset/Event	GARDENERS LODGE (PERIOD UNASSIGNED)
Date and/or Period	
Listing No./NRHE Number	NR83NW 11.03
HER Number	
Status	Non-designated Heritage Asset
Easting	180532
Northing	637819
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	2 storey slated roofed cottage with dormer windows and single storey offshoot to front. Rear abuts the walled garden. Ruined glasshouses lie adjacent. Appears on the 1st edition (six inch series) OS map.

Asset/Event Number	98
Asset/Event Name	CARRADALE, CARRADALE HOUSE, KENNELS
Type of Asset/Event	KENNELS (PERIOD UNASSIGNED)
Date and/or Period	
Listing No./NRHE Number	NR83NW 11.04
HER Number	
Status	Non-designated Heritage Asset
Easting	180450
Northing	637900
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute

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Description	Photographs available at: https://canmore.org.uk/site/183658/
Asset/Event Number	99
Asset/Event Name	CARRADALE, CARRADALE HOUSE, WALLED GARDEN
Type of Asset/Event	WALLED GARDEN (PERIOD UNASSIGNED)
Date and/or Period	
Listing No./NRHE Number	NR83NW 11.05
HER Number	
Status	Non-designated Heritage Asset
Easting	180580
Northing	637840
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Photographs available at: https://canmore.org.uk/site/183659/

Asset/Event Number	100
Asset/Event Name	BEINN AN TUIRC
Type of Asset/Event	NO CLASS (EVENT)
Date and/or Period	
Listing No./NRHE Number	NR73NE 20.00
HER Number	
Status	Event
Easting	179500
Northing	638500
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 795 385 to NR 792 376 During June 2001, a watching brief was carried out at the bottom slopes of Beinn an Tuirc, by Carradale, during the excavation and insertion of cables for a windfarm This revealed two features: a dark spread of charcoal-rich material with regular edges which could imply a charcoal-burning platform; and an earlier field boundary. (GUARD 912). Sponsor: Scottish & Southern Energy plc. K McLellan 2001a Watching Brief (June 2001) NR 795 385 to NR 792 376 During June 2001, a watching brief was carried out at the bottom slopes of Beinn an Tuirc, by Carradale, during the excavation and insertion of cables for a windfarm This revealed two features: a dark spread of charcoal-rich material with regular edges which

could imply a charcoal-burning platform; and an earlier field boundary. (GUARD 912).

Sponsor: Scottish & Southern Energy plc.

K McLellan 2001a

Watching Brief (3 August 2009 - 18 September 2009)

NR 79350 38510 and NR 79280 38468 – NR 74450 35040 A watching brief was kept at the site of a proposed extension to a power station 2km W of Carradale. A walkover survey was then carried out along the proposed route of a power cable between the power station and a new wind farm on Beinn an Tuirc.

The watching brief was maintained during August and September 2009 when topsoil and other modern materials were removed from a 62 x 61m area, which was bounded on its E by the existing power station and on its W by the Carradale Water. Previous work along and near the river bank had uncovered evidence of occupation ranging from the Neolithic to the Iron Age. Up to 0.5m of peaty topsoil overlay clay and fine sand, all of which were waterlogged at the time of the investigation, were recorded. The only features were of recent date or of natural origin.

The walkover survey, on 16 September 2009, began on the S bank of the Carradale Water, opposite the sub-station, and terminated on the S side of Beinn an Tuirc, a distance of some 5.5km. The remains of nine small, circular structures (probably shieling huts) were found along the bank of an unnamed stream, roughly 1km NE of the summit of Beinn an Tuirc. One line of seven structures, centred on NR 75835 36885, was sandwiched between the burn and a forestry plantation; the second group of two was a short distance away at NR 75839 36803.

Archive and Report: RCAHMS and WoSAS SMR

Funder: Scottish and Southern Energy plc

John Lewis – Scotia Archaeology

Asset/Event Number	101
Asset/Event Name	CARRADALE
Type of Asset/Event	NO CLASS (EVENT)
Date and/or Period	
Listing No./NRHE Number	NR73NE 22.00
HER Number	
Status	Event
Easting	179500
Northing	638200
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 795 382 A series of watching briefs were undertaken between May and September 2000 during a water supply scheme, on a series of terraces running from the lowest adjacent to Carra Water up to the site of the water reservoir. Only one potentially significant archaeological feature was discovered: a fire-pit in the line of the access road. The sub-circular pit, measuring 1.3 x 1.2m, had been partially truncated by the insertion of a clay field drain. The pit was 0.15m deep, with a flat base and steep sides. It

contained three fills, one rich with charcoal, which along with several thin lenses of red sand (probably heat-scorched) suggest it had been utilised as a fire-pit or hearth. (GUARD 864).

Sponsor: West of Scotland Water.

G MacGregor, K McLellan and L H Johnstone 2001.

Asset/Event Number	102
Asset/Event Name	DEUCHERAN HILL
Type of Asset/Event	NO CLASS (EVENT)(S)
Date and/or Period	
Listing No./NRHE Number	NR74SE 21.00
HER Number	
Status	Event
Easting	176200
Northing	643700
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 762 437 (centre) In June 2000, a walkover survey and series of watching briefs were undertaken in advance of a proposed windfarm. No significant archaeological remains were uncovered. (GUARD 904). Sponsor: Natural Power Consultancy Ltd. K McLellan 2001 NR 762 437 (centre) In May and June 2001, a walkover survey was carried out in advance of proposed upgrading of a forestry road and construction of new access tracks as part of a proposed windfarm. A watching brief was carried out during the stripping of peat for borrow-pit C and the site compound. No new sites of archaeological interest were noted. (GUARD 1061). Sponsor: Wind Prospect Ltd. H James and K Seretis 2001

Asset/Event Number	103
Asset/Event Name	BRACKLEY FOREST
Type of Asset/Event	STONE CIRCLE
Date and/or Period	NEOLITHIC- BRONZE AGE
Listing No./NRHE Number	NR74NE 11.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177300
Northing	646200

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Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 773 462 Stone circle found in cleared forestry by D Ritchie. Situated on a ledge on Cnoc Reamhar, the circle consists of a double ring of upright stones 0.5m high, and is 4m wide. Sponsor: Kintyre Antiquarian & Natural History Society. F Hood 2003.
Asset/Event Number	104
Asset/Event Name	RHONADALE GLEN
Type of Asset/Event	INSCRIBED STONE
Date and/or Period	MODERN
Listing No./NRHE Number	NR73NE 24.00
HER Number	
Status	Non-designated Heritage Asset
Easting	177030
Northing	638680
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	A boulder beside the forestry track at the head of Rhonadale Glen has deep man-made scores on its upper surface. Boulder 1.5m high; 1.3m wide; 0.5m deep. Sponsor: Kintyre Antiquarian & Natural History Society. F Hood and D Ritchie 2004
Asset/Event Number	105
Asset/Event Name	KINTYRE, CARRADALE
Type of Asset/Event	FINDSPOT, POLISHED AXEHEAD
Date and/or Period	NEOLITHIC
Listing No./NRHE Number	NR83NW 15.00
HER Number	
Status	Non-designated Heritage Asset
Easting	180200
Northing	637300
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	NR 802 373 Neolithic polished stone axehead (L 163 x B 70 x Th 43mm; weight 642 g) found by Ewan Murray to the N of the mouth of Carradale River. Reported via Frances Hood, claimed as Treasure Trove (TT.38/06), and allocated to Kilmartin House Museum. A Saville 2006.

Watching Brief (August 2009 - October 2009)

an archaeological watching brief at a site where an existing electricity sub-station is to be extended. It also includes the results of a walk-over survey along the route of a new 33kv power cable connecting the sub-station with a new windfarm to be built on the side of Beinn an Tuirc. Both elements of the project were sponsored by Scottish & Southern Energy (SSE) and undertaken by John Lewis of Scotia Archaeology during August and September 2009.

Asset/Event Number	106
Asset/Event Name	BEINN BHREAC
Type of Asset/Event	SHIELING HUT(S)
Date and/or Period	EARLY MODERN
Listing No./NRHE Number	NR74NE 12.00
HER Number	
Status	Non-designated Heritage Asset
Easting	179120
Northing	646900
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Cultural Heritage assessment for Cour wind Farm development. The assessment will form part Environmental Statement, due to submitted in 2009. The Cultural Heritage assessment will identify all cultural heritage features within the study area with a field visit, and within 15km of the proposed development, and assess the impact upon these features from the new development. Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010. Field Visit (November 2014) Archaeological survey was carried out by CFA Archaeology Ltd (CFA) at Cour Windfarm, North Kintyre, Argyll & Bute. Planning permission has been granted for the construction of ten wind turbines and associated infrastructure at Cour Windfarm located approximately 19km south-west of Tarbert in north Kintyre, Argyll and Bute. The windfarm site is surrounded by commercial forestry and centred on Beinn Bhreac at 244m AOD. Additional survey work has been carried out at two locations previously identified during the initial field survey. The additional work identified further shieling huts at site 4 and noted that there are no visible traces of site 31 within the access corridor. Funder: SSE Renewable Developments (UK) Ltd CFA Archaeology Ltd OASIS ID: cfaarcha1-254110

Asset/Event Number	107
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Gazetteer of Heritage Assets and Events

Asset/Event Name	BEINN BHREAC
Type of Asset/Event	SHEEPFOLD (POSSIBLE)
Date and/or Period	
Listing No./NRHE Number	NR74NE 13.00
HER Number	
Status	Non-designated Heritage Asset
Easting	178447
Northing	647008
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Field Visit (1 June 2008 - 1 February 2010) Cultural Heritage assessment for Cour wind Farm development. The assessment will form part Environmental Statement, due to submitted in 2009. The Cultural Heritage assessment will identify all cultural heritage features within the study area with a field visit, and within 15km of the proposed development, and assess the impact upon these features from the new development. Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010.

Asset/Event Number	108
Asset/Event Name	ÀIRIGH NA H-AON OIHCHE - KINTYRE
Type of Asset/Event	SHIELING(S)
Date and/or Period	MEDIEVAL- 18TH CENTURY
Listing No./NRHE Number	NR74SW 44.00
HER Number	
Status	Non-designated Heritage Asset
Easting	174340
Northing	641790
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Field Visit After many years of studying shielings in the Western Isles and beyond, it has been noticeable how few bothain-àirighe are actually named on maps or documents. The commonest name given by Ordnance Survey is simply "Old Shielings" – although I have yet to find any map detailing any "New Shielings". The few which are named are mostly a personal ownership name, a locality name or a geographic descriptive name. To come across a collection of shielings sharing the enigmatic name of "Àirigh na h-Aon Oidhche" – "The Shieling of One Night" is intriguing to say the least. All the sites found are on Hebridean island locations, except for one site in Kintyre. It seems that the naming of the Àirigh na h-Aon Oidhche sites was primarily by the Seanachie, the Gaelic storytellers and keepers of the community's oral traditions. The tales themselves are generally in the tradition of a morality fable, often involving death of those committing moral 'sins' at the named shielings. It is likely these stories were intended to instruct the younger members of society in the expected behaviours of the times.

The main purpose for this research programme was to see if the naming of the sites was directly attributable to the type of structure found at the location. Indeed, it was also desirable to find if there were any structures at the locations, as few were previously accurately recorded in Canmore Sites records.

This widespread group of shielings was interesting to study as they clearly illustrated the range of vernacular building styles employed across the Hebrides for providing shelters at the shielings, ranging from rock shelters and turf walled constructions to structures on Lewis employing the same standards of building as used more usually in farmhouses.

Kintyre NR 7434 4179 The only references to this site is the name of Glen Arrinahinney appearing on Lewis D Robertson's map of Carradale Estate (1827) and Andrew Henderson's 1857 map of the Lands between Ballochintuy & Machrihanish. There is no recorded folk story associated with this site.

The glen lies between Loch Losgainn and Barr Water in an area now planted with mature Sitka spruce by the Forestry Commission since the early 1970s. The group of turf-walled bothan-àirighe are in a clearing where the confluence of three streams forms the main origin of the Barr Water burn. Access is along the track to the S of the Kintyre Way with the clearing, still devoid of trees, is present on the eastern side of the track. The presence of the site had been noted when the forestry operations began, so the site has not been overplanted, although some of the peripheral trees have fallen in storms and now lie across some of the bothan- àirighe remains.

Jura NR 6523 9196 The Jura site is high on the flanks of Cruach Ionnastail and appears on the Ordnance Survey maps as a locality name, although no building structures are marked. The single isolated bothan-àirighe is on a low mound and is a subcircular stone-built foundation ruin. The surrounding ground is extremely low-grade pasture, even by Hebridean standards. It is saturated peatland with poor tussock grass only between other acidophilic vegetation. There is no specific story associated with the site, although there are several other tales recorded featuring MacPhie as the hero against the Gaelic Otherworld occupants.

Coll NM 2328 5915 The Coll site is at Loch Àirighe na h-Aon Oidhche. Other than the name, there is no other reference, either in local stories nor as any built structures. The loch, together with the adjoining Loch Fada forms the main component of the Scottish Water public supply to the main township of Arinagour and much of the Island of Coll. The site can be accessed across an area of upland pasture still used today for both cattle and sheep. This upland strewn with small lochans, many of which have confirmed or likely crannogs across their surfaces. Loch Àirighe na h-Aon Oidhche itself has three likely peninsulas which might have previously been crannogs, but the current use of the loch for water supply makes it unlikely that any further investigations would be allowed, for fears of disturbance of silt and contamination of supplies. The bothan-àirighe itself is on the S side of the loch, adjacent to one of the putative crannog sites. A large glacial erratic boulder marks the site. This has been undermined on its western side to form a clamp suitable for cool storage of dairy produce. The bothan is on the opposite side, using the rock as one wall, with the other walls of boulder and turf construction. The floor of the bothan has been excavated down into the ground and the interior today is filled with a tangle of dense vegetation, in particular a large specimen of *Salix aurita* (eared willow) which fills the interior.

Tiree NL 9767 4560 The main Tiree Àirighe na h-Aon Oidhche site is now overbuilt with a modern house, serendipitously named 'The Airigh', so is no longer accessible for further inspection. However, there is also another associated site, close to the former mediaeval Cornaigmore township: the grazing area known as Faire na h-Aon Oidhch (the One Night's Watch), an area of wet pasture close to Loch Bhasapoll. There is a local tale of a young shepherd spending the night at the former bothan-àirighe but being terrified by flashing lights during his stay, hence he never returned, giving the shieling its name. In later life he retrospectively identified the lights as the Skerryvore lighthouse.

Barra NF 7023 0377 The Barra Àirighe na h-Aon Oidhche site is named in Stahl's report into Barra place-names, where he also gives information regarding its origin – it was the site of

reported visits by a local Water Horse who sucked its victims blood in the manner of a vampire and inhabited the nearby Loch an Eich Uisge. There are two adjacent large green, fertile mounds whose surfaces support several bothain-àirighe. There are also some other adjacent bothain immediately to the east of the mounds. The mounds themselves are likely to be much earlier origins, probably Bronze Age structures.

Eriskay NF 8018 1110 The Eriskay Àirighe na h-Aon Oidhche is in the hidden Gleann an Fhir Mhòir (translates as the Glen of the Big Man) on the Eastern side of Eriskay. The glen is part of a deep cleft across the island to the east of Beinn Sgriathan, the main hill on the northern end of the island. The waters of the Minch have filled the eastern portion of this geological void creating a fjord like lochan. The steeper portions of the glen have given way in landslides several times in the past leaving many scars and loose ground which can only be traversed with great caution.

There is a small burn, less than 10cm deep, flowing along the base of Gleann an Fhir Mhòir, adjacent to the sub-circular stone bothan-àirighe, which has been deepened, widened and stone lined to give a significant well of sweet water more than half a metre deep. Adjacent to some of the side escarpments of the Glen there are indications of stone settings which may represent ruined storage structures.

South Uist NF 7959 2578 The South Uist Àirighe na h-Aon Oidhche site was identified by the eponymous loch on Ordnance Survey maps, although no building structures had been recorded at or near the site. A field visit revealed the presence of two large mounds immediately to the north of the loch, both of which had quite different bothain-àirighe structures built onto their surfaces. The southerly mound had two adjoining sub-rectangular bothain, primarily turf walled. However, the northern mound had a much more substantial structure partly excavated into the surface of the mound's crest and lined with large masonry courses standing up to a metre in height.

Benbecula NF 8170 5249 The Benbecula Àirighe na h-Aon Oidhche site is well known. It is a Neolithic Kerb Cairn, known locally as a Barp, which has been remodelled in more recent times to support several bothain-àirighe. There are at least three different iterations of the traditional stories associated with the Benbecula site, involving the untimely deaths of up to 12 people at the hands of Gaelic Otherworld beings.

North Uist NF 8071 6442 On North Uist, the Àirighe na h-Aon Oidhche name exists only as a locality name on the Ordnance Survey Explorer maps. The Canmore entry for the name refers to a reported stone circle which was determined to be natural stones by the O.S. surveyor. However, the position of the name on the map is possibly erroneous, as it is to the west of the stream (Allt na Muillne) which drains the nearby Loch nan Struban. This area still bears the recognisable ridges and furrows of earlier agriculture, so it is very unlikely that it would be designated for shieling (summer pasture) usage. However, on the eastern side of the burn, the ground is much more likely to have been pastureland, and there are several areas where the foundations of bothain-àirighe can be readily identified. There are no surviving specific stories relating to the North Uist site

Sursay NF 9578 7584 The tiny island of Sursay is an approximate equilateral triangle with 700 metre sides, less than a kilometre from the shores of North Uist but is politically part of Harris estate and parish. The Àirighe na h-Aon Oidhche name has been given to the group of three roofless buildings on the southern shoreline opposite Eilean na Slettich. The name was given following a story concerning a visiting shepherd who was disturbed in the night by screams and rotating lights in the sky which spooked both him and his dog causing him to return immediately to North Uist by rowboat at night and never to return. The ruined buildings appear to be farmstead buildings but may be associated with more extensive farming activities on the nearby island of Taghaigh

Lewis, Uig NB 0197 2852 Uig's Àirighe na h-Aon Oidhche site is marked on the early O.S. mapping as a locality and has two substantial bothain-àirighe structures. The bothain are built in a manner normally seen in farmstead construction, with twin dry-stone walls infilled with dried peat as an insulator and twin stone lintels present over the doorway. The story associated with this site concerns the fears of a girl who was frightened by strange overnight

sounds – possibly from wind blowing through rocks in the nearby pass. This locality was a popular site for shieling huts – there are at least a dozen in the immediate area, most of which are of this same ‘overengineered’ format, many incorporating intra-mural niches and storage cupboards. Although the shielings huts are not together in a tight group, as often found on Uist shieling sites, the huts would be inter-visible, one to two or three others, allowing the township people to remain in close contact.

Lewis, West Side NB 3010 4274 The west side Àirighe na h-Aon Oidhche site is marked by an eponymous Loch, Allt, and Druim (ridge). The bothan-àirighe is at the eastern end of the eponymous ridge about 50 metres from the burn, Allt Loch Àirighe na h-Aon Oidhche, which has been widened, and deepened at one point to create a usable well as a sweet water source. This bothan is also of a heavyweight design, similar to that found at Uig, but in the Gleann Bhràgair area it seems that the ‘standard’ design was to build with the eastern wall in an ellipse, similar to an apse. The design also incorporated multiple intra-mural storage niches and two opposed doorways, sited in the long walls close to the curved ‘gable’ wall. It is uncertain if the doorways were for practical reasons (always having one downwind) or possible belief ritual (one for entrance, one for exit, for example) Once again, the bothain were not grouped tightly together, but were separated remaining in inter-visual contact only. Sadly, no specific story survives for this site in Gleann Bhràgair.

Lewis, Achmore NB 3155 2660 The Àirighe na h-Aon Oidhche site is part of a wider group of bothain associated with the township of Luerbost (marked as Airighean Luerbost). More than twenty bothain-àirighe are marked on the O.S. Explorer map of the area, but the Àirighe na h-Aon Oidhche story associated with this site specifies that the shieling hut was built by a man from Luerbost away from most of the other bothain, near to an un-named loch from which emerged a water horse overnight, causing the man to leave the site lest he be taken to the Otherworld. There is one un-named loch which fits the description well and has an adjacent mound with a shieling hut ruin together with the eroded remains of a turf walled produce clamp. These features are not on any records nor are they shown on the Ordnance Survey maps, although clearly visible on satellite imagery.

Lewis North Lochs NB 3988 1700 Perhaps the most complex story referencing an Àirighe na h-Aon Oidhche site is from this area. This site has an eponymous Loch and Allt which has at some point been partly dammed to regulate the loch’s water height. The bothan-àirighe itself is on the northern shore of the loch towards the western end and sheltered from sight with a large rocky promontory and a low dry-stone wall between it and the loch. On the hidden side of this wall there are a group of stones driven into the earth to form a support stand from what might be a cooking pot over a fire. However, a more intriguing solution is that this site was never a shieling at all. The land nearby is VERY poor grazing, and the story is particularly frightening, to deter visitors. Given that some attempt has been made to make the site as hidden as possible, it seems possible that this was in fact the site for a ‘poit-dhubh’ the traditional illicit still of the Gaeltacht.

Raasay NG 6021 4902 The final Loch Àirighe na h-Aon Oidhche site is on the northern end of Raasay, beyond the end of ‘Calum’s Road. There is a site described on Canmore which is about half a kilometre from the eponymous loch, but there is the remains of two bothain-airighe and two produce clamps excavated under a large glacial erratic boulder right on the shoreline of the loch. The loch is surprisingly clear sweet water, as it is so high that most of the water it holds is direct run-off from the rocks, not remaining in deep peat previously, hence has little discolouration. There is no specific story from this location, although there are stories of each-mara (water-horses) on the island, one of which was recounted in Johnson’s tour of the Hebrides.

Simon Davies–Uist Summer Wine / Uist Community Archaeology Group

Gazetteer of Heritage Assets and Events

Type of Asset/Event	NO CLASS (EVENT)
Date and/or Period	
Listing No./NRHE Number	NR73NE 26.00
HER Number	
Status	Event
Easting	179340
Northing	638540
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Watching Brief (28 July 2020) NR 7934 3854 A watching brief was undertaken to the N of Carradale Substation, in relation to substation access improvements. The work was carried out on the 28 July 2020 and comprised archaeological monitoring during the creation of a passing place on the B842. No archaeologically significant remains were uncovered. Archive: NRHE (intended) Funder: Cnoclee Environmental Services David Sneddon – Clyde Archaeology (Source: DES Vol 21) Archaeological Evaluation (17 March 2020) NR 7934 3854 An evaluation was undertaken immediately NW of Carradale Substation, prior to the proposed realignment of a watercourse and creation of a hard standing. The evaluation was carried out by Clyde Archaeology on 17 March 2020 and comprised a total of five evaluation trenches totalling 170m2 which equated to just over 10% of the 1580m2 site. The evaluation revealed a number of modern field drains and plough scars; however, no archaeologically significant remains were present. Archive: NRHE (intended) Funder: Cnoclee Environmental Services Steven Black – Clyde Archaeology (Source: DES Vol 21)

Asset/Event Number	110
Asset/Event Name	CARRADALE
Type of Asset/Event	FINDSPOT, ARROWHEAD (FLINT)
Date and/or Period	CHALCOLITHIC - EARLY BRONZE AGE
Listing No./NRHE Number	NR83NW 22.00
HER Number	
Status	Non-designated Heritage Asset
Easting	180000

Gazetteer of Heritage Assets and Events

Northings	637000
Parish	SADDELL AND SKIPNESS
Council	Argyll and Bute
Description	Artefact Recovery NR 80 37 A complete, cream-coloured flint barbed and tanged arrowhead, Sutton type C, was found by chance on a beach at Carradale, near a stream and mouth of a river. It has a rounded/sub-square tang and short pointed barbs. The arrowhead is quite thick (c7.5mm) with a lenticular profile and section. There is broadly symmetrical working on each face, and retouch along the edges. It dates to the Chalcolithic/Early Bronze Age, c2450–1500 BC. The findspot is close to that of a Neolithic stone axehead (TT 38/06) and, upstream from the beach, prehistoric terraced platforms that were excavated at Achnasavil, producing dates from the Neolithic, Early Bronze Age and Late Bronze Age periods (Carter et al. 1991, Glasgow Archaeological Journal 17, 39–52). Length 39.2mm; width 27.5mm; tang length 13.5mm; barb length c1.2mm; weight 5.34g. Claimed as Treasure Trove (TT 94/19) and allocated to Kilmartin Museum Matthew G Knight and Ella Paul – National Museums Scotland (Source: DES Vol 21)

Asset/Event Number	111
Asset/Event Name	Garrachcroit
Type of Asset/Event	Farmstead and Shepfold
Date and/or Period	Early Modern
Listing No./NRHE Number	
HER Number	
Status	Non-designated Heritage Asset
Easting	180860
Northings	644699
Parish	
Council	Argyll and Bute
Description	*LB *06/03/2024 *Historic maps *A farmstead composed of two buildings and a sheepfold located within improved fields to the north of Grogport on the OS maps published in 1868 and 1869-70 *OS1868 Argyllshire and Buteshire CCXXXVI.11

Asset/Event Number	112
Asset/Event Name	Grogport
Type of Asset/Event	Buildings

Gazetteer of Heritage Assets and Events

Date and/or Period	Early Modern
Listing No./NRHE Number	
HER Number	
Status	Non-designated Heritage Asset
Easting	180833
Northing	644253
Parish	
Council	Argyll and Bute
Description	*LB *06/03/2024 *Historic maps *A collection of buildings, at least one of which is depicted within the Habitat Management Area *OS1868 Argyllshire and Buteshire CCXXXVI.11

Asset/Event Number	113
Asset/Event Name	Sheepfold
Type of Asset/Event	Sheepfold
Date and/or Period	Early Modern
Listing No./NRHE Number	
HER Number	
Status	Non-designated Heritage Asset
Easting	180620
Northing	643913
Parish	
Council	Argyll and Bute
Description	*LB *06/03/2024 *Historic maps *A sheepfold annotated on the OS map published 1868 and on the OS maps published 1869-70 *C. 27 (N-S) x 16m (E-W) *OS1868 Argyllshire and Buteshire CCXXXVI.11

Asset/Event Number	114
Asset/Event Name	Sheepfold
Type of Asset/Event	Sheepfold
Date and/or Period	Early Modern
Listing No./NRHE Number	
HER Number	
Status	Non-designated Heritage Asset
Easting	178667
Northing	644159

Gazetteer of Heritage Assets and Events

Parish

Council

Argyll and Bute

Description

*LB

*06/03/2024

*Historic maps

*A sheepfold annotated on the OS map published 1868 and on the OS maps published 1869-70

*C. 32 (N-S) x 16m (E-W)

*OS1868 Argyllshire and Buteshire CCXXXVI.11

Asset/Event Number

115

Asset/Event Name

Sheepfold

Type of Asset/Event

Sheepfold

Date and/or Period

Early Modern

Listing No./NRHE Number

HER Number

Status

Non-designated Heritage Asset

Easting

177769

Northing

643728

Parish

Council

Argyll and Bute

Description

*LB

*06/03/2024

*Historic maps

*A sheepfold annotated and reference "403" on the OS map published 1868 and on the OS maps published 1869-70

*C.22 (N-S) x 40m (E-W)

*OS1868 Argyllshire and Buteshire CCXXXVI.11

Asset/Event Number

116

Asset/Event Name

Sheepfold

Type of Asset/Event

Sheepfold

Date and/or Period

Early Modern

Listing No./NRHE Number

HER Number

Status

Non-designated Heritage Asset

Easting

177209

Northing

638578

Parish

Council

Argyll and Bute

Description

*LB

*06/03/2024

*Historic maps

*A sheepfold annotated on the OS map published 1868 and on the OS maps published 1869-70

Gazetteer of Heritage Assets and Events

*C.28 (N-S) x 38m (E-W)
*OS1868 Argyllshire and Buteshire CCXXXVI.11

Asset/Event Number	117
Asset/Event Name	Port An Dunain
Type of Asset/Event	Natural Feature
Date and/or Period	
Listing No./NRHE Number	NR84SW 1
HER Number	
Status	Non-designated Heritage Asset
Easting	181430
Northing	644910
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	(NR 8143 4491) "'Fort' or Dun (natural rocky stac). Forestry Commission have planted the surroundings with young trees." Information from D Colville 1960. This may refer to an entirely natural craggy spur at NR 8127 4486 or to the dun NR84NW 2. Visited by OS (JM) 23 February 1978.

Asset/Event Number	118
Asset/Event Name	Sundale Cottage
Type of Asset/Event	Farmstead
Date and/or Period	
Listing No./NRHE Number	NR84NW 4
HER Number	
Status	Non-designated Heritage Asset
Easting	181620
Northing	645230
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	A farmstead, comprising two roofed buildings, one partially roofed long building, four unroofed buildings and three enclosures is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet ccxxvi). Two roofed building and one unroofed building are shown on the current edition of the OS 1:10000 map (1980). Information from RCAHMS (AKK) 22 October 1998

Gazetteer of Heritage Assets and Events

Asset/Event Number	119
Asset/Event Name	Gortan An T-sailleir
Type of Asset/Event	Structure
Date and/or Period	
Listing No./NRHE Number	NR84NW 5
HER Number	
Status	Non-designated Heritage Asset
Easting	182030
Northing	647030
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	A single unroofed structure which may be a mill is depicted on the 1st edition of the OS 6-inch map (Argyllshire 1870, sheet ccxxxvi), but it is not shown on the current edition of the OS 1:10000 map (1991). Information from RCAHMS (AKK) 22 October 1998

Asset/Event Number	120
Asset/Event Name	Sunadale
Type of Asset/Event	Public House, Well
Date and/or Period	
Listing No./NRHE Number	NR84SW 9
HER Number	
Status	Non-designated Heritage Asset
Easting	181220
Northing	644870
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	Sites identified as part of a coastal zone assessment survey. NR 8122 4487 - Public House. NR 8116 4473 - Well. M Cressey, S Badger, 2005.

Asset/Event Number	121
Asset/Event Name	Acra
Type of Asset/Event	Building; Milestone
Date and/or Period	
Listing No./NRHE Number	NR84SW 10
HER Number	

Gazetteer of Heritage Assets and Events

Status	Non-designated Heritage Asset
Easting	181000
Northing	644590
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	Sites identified as part of a coastal zone assessment survey. NR 8100 4459 - Building. NR 8095 4448 - Miestone. M Cressey, S Badger, 2005.

Asset/Event Number	122
Asset/Event Name	Grogport Old Manse
Type of Asset/Event	Boathouse, Wall
Date and/or Period	
Listing No./NRHE Number	NR84SW 11
HER Number	
Status	Non-designated Heritage Asset
Easting	181080
Northing	643590
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	Sites identified as part of a coastal zone assessment survey. NR 8108 4359 - Stone wall. NR 8109 4352 - Boathouse. M Cressey, S Badger, 2005.

Asset/Event Number	123
Asset/Event Name	Gortan An T-sailleir
Type of Asset/Event	Farmstead
Date and/or Period	
Listing No./NRHE Number	NR84NW 16
HER Number	
Status	Non-designated Heritage Asset
Easting	181858
Northing	647128
Parish	Saddell And Skipness

Council	Argyll And Bute
Description	Field Visit (1 June 2008 - 1 February 2010) Cultural Heritage assessment for Cour wind Farm development. The assessment will form part Environmental Statement, due to submitted in 2009. The Cultural Heritage assessment will identify all cultural heritage features within the study area with a field visit, and within 15km of the proposed development, and assess the impact upon these features from the new development. Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010. Field Visit (1 June 2008 - 1 February 2010) The Ordnance Survey 1st Edition (1870) map depicts two buildings with attached enclosures named as 'Gortan an t-Sailleir'. Langland's (1801) and Thomson's (1832) earlier maps depict a farmstead in the same location but name it 'Closeburn'. It is probable that the placenames on these maps are inaccurate. Langlands and Thomson depict 'Closeburn' lying south of 'Gortan' (7), suggesting it is 'Gortan an t-Saillier' but depict a further farmstead to the south of 'Closeburn' naming it as 'Gortantaylor'. This probably corresponds to 'Deargalli' (11). The Ordnance Survey (2001) 1:25,000 Edition map names the site as 'Gortan an t-Sailleir'. Field survey recorded a building and two enclosures relating to the sites depicted on 19th century maps. The building (9a) at NR 81863 47131 is circa 15m by 10m externally, with a small byre attached on the east side. The byre is brick built, with a concrete floor and contains three stalls. The main building is stone built with a concrete harle and a brick fireplace in the eastern wall. A corrugated-iron roof and three brick chimneys survive. The enclosure (9b) at NR 81833 47149, northwest of the building, was barely visible (particularly the northeastern corner) due to thick bracken cover but, where visible, the wall remains appear to be 0.5m high and c.0.6m wide. The second enclosure (9c) at 181911 647284 lies north-northeast of the building remains. The enclosure is 20m by 12m externally with turf-covered stone banks 0.5m high and 0.6m wide. Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010.

Asset/Event Number	124
Asset/Event Name	Dearg Allt
Type of Asset/Event	Farmstead
Date and/or Period	
Listing No./NRHE Number	NR84NW 18
HER Number	
Status	Non-designated Heritage Asset
Easting	181800
Northing	646400
Parish	Saddell And Skipness
Council	Argyll And Bute
Description	Field Visit (1 June 2008 - 1 February 2010)

Cultural Heritage assessment for Cour wind Farm development. The assessment will form part Environmental Statement, due to submitted in 2009. The Cultural Heritage assessment will identify all cultural heritage features within the study area with a field visit, and within 15km of the proposed development, and assess the impact upon these features from the new development.

Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010.

Field Visit (1 June 2008 - 1 February 2010)

Langland's (1801) and Thomson 's (1832) maps depict a farmstead named as 'Gortantaylor'.

The Ordnance Survey 1st Edition (1870) and 2nd Edition (1900) maps depict a building with an attached enclosure and a second enclosure a short way to the southwest. The building is named as 'Deargallt' (11a).

Field surveys recorded two sections of field banks, one of which maybe the remnants of an enclosure shown on the Ordnance Survey 1st Edition map.

A small section of field bank (11a) at NR 81780 46483, circa. 20m long, 1m wide and 0.5m high, may be the remains of the 'Deargalli' enclosure. The area was covered in dense vegetation at the time of the field visit, restricting thorough survey, and the remains of the building depicted on the Ordnance Survey 1st Edition may still survive.

To the north-northeast of the field bank is a section of turf-covered field bank (11b) at NR 8146 46293. The bank runs on a north-northeast to south-southwest alignment and is 0.7m wide and 0.5m to 0.3m high. The bank is obscured by dense vegetation and may survive further than has been surveyed.

The Ordnance Survey 1st Edition map (1870) shows the location of small U-shaped enclosure to the southwest of 'Deagalli' enclosure (11a). No upstanding remains of this enclosure were visible during the field survey.

Information from OASIS ID: cfaarcha1-54688 (C Jones) 2010.

Asset/Event Number	125
Asset/Event Name	Ugadale Point,dun
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	
Listing No./NRHE Number	SM3225; NR72NE 9
HER Number	
Status	Scheduled Monument
Easting	178517
Northing	628511
Parish	Campbeltown
Council	Argyll And Bute
Description	Dun. The remains of this dun occupy the summit of a rocky promontory which rises to a height of 3.5m above level ground to the W, and to 6m above the shore on all other sides. Sub-rectangular on plan, the dun measures about 17m by 13.5m internally. The wall has been completely destroyed by landslips on the N, but elsewhere it is represented by a stony bank 1.0m high and up to 4.5m thick; one short stretch of the inner face is visible in situ on the SSE. The original entrance, which is situated on the SSW and measures 1.2m in width, was cleared

during excavations undertaken in 1939 (Fairhurst 1956). The gaps now visible in the wall on the E and W are probably secondary. The only feature in the interior is part of a rectangular building with rounded corners which is probably to be associated with the 16th-century silver coins discovered during the excavation. Other finds made at that time indicate that the history of the site may be similar to that of the dun at Kildonan Bay (NR72NE 5), where occupation probably began in the late 1st or early 2nd century AD and continued, with interruptions, into the medieval period.

H Fairhurst 1956; RCAHMS 1971, visited 1960.

The dun is as described and planned by RCAHMS (1971).

Surveyed at 1:10 000.

Visited by OS (JB) 8 November 1977.

NR 7851 2851 Site identified as part of a coastal zone assessment survey.

M Cressey, S Badger, 2005.

Asset/Event Number	126
Asset/Event Name	Dunan Buidhe,dun,Gigha
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	
Listing No./NRHE Number	SM3228; NR64NE 10
HER Number	
Status	Scheduled Monument
Easting	165293
Northing	649740
Parish	Gigha And Cara
Council	Argyll And Bute
Description	(NR 6547 4984). A second Dun Buidhe lies 100 yds north of the first (NR64NE 6) 'on a rock outcrop about 20 feet high. It stands at the head of a tiny sandy bay which gives good landing facilities at the right state of the tide. The fort is 35 feet away, with very rough ground to traverse from the shore to the fort gate. The interior measures 40 feet by 24.' It is well known as having been a cache for smuggled goods. R S G Anderson 1939. The hillock would seem to be entirely natural. Along the flanks and on the summit there are numerous outcropping rocks and boulders. These boulders appear too large to have any constructional value. Visited by OS (J B) 20 January 1978.

Asset/Event Number	127
Asset/Event Name	Cleongart,dun SE of
Type of Asset/Event	Prehistoric domestic and defensive: dun

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Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM3178; NR63SE 17
HER Number	
Status	Scheduled Monument
Easting	167853
Northing	633521
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	This dun is situated on a low rocky knoll which commands extensive views in all directions. The main wall of the dun, which is drawn round the summit of the knoll to enclose an area measuring 10.5m by 12m, is 3.0m thick, and now consists of a band of core material in which a considerable number of massive facing-stones can be seen. The entrance passage, on the NE, has been about 1.5m in width; its S side is composed of two large slabs measuring 1.4m and 1.2m in length respectively, while the inner corner-stone on the opposite side of the passage is still in position. Round the base of the knoll there has been an outer wall, now represented by a few external facing-stones and a slight scatter of rubble core. A turf dyke, associated with a small turf-walled enclosure, has been erected on the ruins of this outer wall on the SW. RCAHMS 1971, visited 1960 A dun as described and planned by RCAHMS. Surveyed at 1:10 000. Visited by OS (NKB) 21 December 1977

Asset/Event Number	128
Asset/Event Name	Dougarie Lodge,hut circles 800m NE of
Type of Asset/Event	Prehistoric domestic and defensive: hut circle, roundhouse
Date and/or Period	BRONZE AGE
Listing No./NRHE Number	SM4417
HER Number	
Status	Scheduled Monument
Easting	189737
Northing	638500
Parish	Kilmory
Council	North Ayrshire
Description	The monument is a group of four well preserved hut circles of the Bronze Age. They lie on a steep W facing slope above the Scaftigill water. Three of the circles (B-D) lie in a N to S line relatively close together on a level shelf. The fourth (A) lies 50m to the NNE, levelled into the hillside. Hut circle A is 9.5m in overall diameter with a bank 1.5m wide and 0.6m high; evidence of internal and external stone facing survives. The entrance, on the SE side, has a small 4.5m wide annexe built onto it. Hut circles B, C and D are very similar to each other in size and layout, having a 9.5m diameter with a bank 1.5m wide and 0.7m high. Once again the banks have evidence of internal and external stone facing. The entrances are in the SE quadrants. There

are no visible traces of contemporary cultivation around or between the hut circles but excavation has shown that scattered remains of activities associated with the occupation of the settlement are likely to survive.

Statement of National Importance

The monument is of national importance because the structural details of the hut circles seem very well preserved. The circles are very good examples of their type. They are of particular interest because of the layout of the settlement; one circle, built with an annexe, is detached from the other three which do not have annexes and lie close together. An opportunity clearly exists on this site to examine the differing functions of buildings and, possibly, differences in social position of groups within the settlement as expressed by differences in the siting of dwellings. The monument is of national importance to the themes of late prehistoric settlement and society. Taken with the hut circles to the S near Auchencar, they are of national importance to the themes of the development and organisation of the prehistoric landscape.

References

Bibliography

RCAHMS records the site as NR 83 NE 8.

Asset/Event Number	129
Asset/Event Name	Auchencar, hut circle and field system 700m NE of
Type of Asset/Event	Prehistoric domestic and defensive: field clearance cairn, cairnfield; field or field system; hut cir
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM4648
HER Number	
Status	Scheduled Monument
Easting	189900
Northing	636705
Parish	Kilmory
Council	North Ayrshire
Description	The monument is a very well preserved hut circle and associated field system, lying on the N bank of the Auchencar Burn. The hut circle comprises an earth and stone bank spread to 3m in width ad 0.6m high, enclosing a level, featureless area 6.5m in diameter. There is a 1.5m wide entrance in the SE with a single orthostat on the W side. To the N and E lies a wall of boulders enclosing an area c 130m (E-W) by 80m transversely. There are slight traces of subdivision and of field clearance in this area. The monument represents the remains of a small farming unit of the Bronze Age/Iron Age. To protect the visible remains, and a portion of the outfield which would lie beyond the wall, an area measuring 200 E-W by a maximum of 170m N 'S, bounded on the S by the Auchencar Burn, is proposed for scheduling. Statement of National Importance The monument is of national importance because of its excellently preserved field characteristics. It is of particular interest because of the apparent completeness of the field system. It is of national importance to the themes of prehistoric settlement and agriculture. Taken with the hut circles to the N, it is of national importance to the theme of the organisation and development of the prehistoric landscape. References Bibliography RCAHMS records the monument as NR 83 NE 5.

Asset/Event Number	130
Asset/Event Name	Auchencar, hut circle 450m NNE of
Type of Asset/Event	Prehistoric domestic and defensive: hut circle, roundhouse
Date and/or Period	BRONZE AGE
Listing No./NRHE Number	SM4649
HER Number	
Status	Scheduled Monument
Easting	189385
Northing	637057
Parish	Kilmory
Council	North Ayrshire
Description	The monument is an isolated hut circle of the Bronze Age. It is built on a levelled platform on a SW facing slope in open moorland. The earth and stone bank is spread to a width of 4m; it is 0.5m and 1.4m high on the uphill and downhill sides respectively. The featureless interior is 8m in diameter. A 1.5m wide gap in the SE is probably the entrance. As there appears to be no associated field system, the area proposed for scheduling includes only the circle and an area around it in which traces of activity associated with the hut will survive. The area is 40m in diameter. Statement of National Importance The monument is of national importance because of its well preserved field characteristics. It is of particular interest because it is built on a levelled platform; this is not common on Arran, and may relate to the Uncensored Platform Settlements of the S mainland of Scotland. The monument is of national importance to the theme of Bronze Age settlement. References Bibliography RCAHMS records the monument as NR 83 NE 6.

Asset/Event Number	131
Asset/Event Name	Corputechan, hut circles E of, Kintyre
Type of Asset/Event	Prehistoric domestic and defensive: hut circle, roundhouse
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM7434
HER Number	
Status	Scheduled Monument
Easting	167921
Northing	633414
Parish	Killeen And Kilchenzie
Council	Argyll And Bute
Description	The monument consists of the remains of three prehistoric round houses, known as hut circles, situated in open moorland on a west-facing slope. Two hut circles (A and B) lie 1000m W of Corputechan Farm, with a third (C) sited 200m further

NE and uphill. Hut circle A is extremely well-preserved, with an internal diameter of 8m and a wall surviving to 0.5m high and 1.5m wide. Stone facing slabs are visible along the inside of the wall, and a gap in the SE probably indicates the position of the entrance into the house.

Hut circle B lies approximately 10m to the SE of A, and is represented by a pronounced hollow rather than upstanding banks, as it has been cut into the slope. It is slightly smaller than A, with an internal diameter of 5.5m. Hut circle C is well-preserved, with a diameter of 8.5m, within a wall surviving to 0.3m high and 1.2m wide. Facing slabs are also visible around the circuit of the inner wall, with two large boulders set apart marking the doorway to the S.

The area to be scheduled is in two parts, one an oval 70m NNW-SSE by 50m, and the other a circle 50m in diameter centred on the centre of hut circle C, to include the three hut circles and an area around them in which evidence relating to their construction and use may survive, as marked in red on the accompanying map extract.

Statement of National Importance

This monument is of national importance because it has the potential considerably to increase our understanding of later prehistoric domestic life and settlement architecture. Hut circles are relatively rare on mainland Argyll, and this is the first such site to be scheduled in Kintyre. The proximity of the hut circles to the (probably) later dun (scheduled 'SAM 3178), less than 100m to the NNE is also of considerable interest, suggesting a multi-period aspect to this landscape.

References

Bibliography

RCAHMS records the monument as NR 63 SE 8 and 9.

Asset/Event Number	132
Asset/Event Name	Auchengallon,cairn 150m WSW of
Type of Asset/Event	Prehistoric ritual and funerary: cairn (type uncertain)
Date and/or Period	BRONZE AGE
Listing No./NRHE Number	SM90023
HER Number	
Status	Scheduled Monument
Easting	189292
Northing	634643
Parish	Kilmory
Council	North Ayrshire
Description	The monument comprises a Bronze Age kerbed cairn (sometimes also described as a stone circle) which is situated on a slight W-facing terrace overlooking the N end of Machrie Bay. The round cairn measures 14.5m in diameter from NW to SE by 13m transversely and is surrounded by 15 earthfast sandstone blocks which measure from 0.5m to 2.3m in height. It is not clear how much of the internal cairn has been either robbed or is the product of field clearance. However, there is a record of an undated excavation (probably in the late nineteenth century) which found a cist in the centre of the cairn, but nothing further is known about this. The area to be scheduled is almost circular on plan and measures up to 50m in diameter, to include the cairn and an area around in which associated remains may survive, as marked in red on the attached map extract. Statement of National Importance The monument is of national importance because it has well defined field characteristics and,

despite earlier investigations, has the potential to provide information about Bronze Age ritual and funerary practice. It is also situated on the NW edge of a renowned, dense concentration of similar and related Neolithic and Bronze Age monuments around Machrie Water (both domestic and ritual) which have great potential to enhance our understanding of the development of prehistoric society.

References

Bibliography

RCAHMS records the monument as NR 83 SE 1.

References:

Balfour, J. A. (ed.) (1910) The book of Arran, vol. 1, [Glasgow], 119, Fig. 59.

Ordnance Survey (1864) Object Name Books of the Ordnance Survey, Book No. 2, 30.

Piggot, S. and Simpson, W. D. (1970) Illustrated guide to ancient monuments: volume vi, Scotland, Edinburgh, 61.

PSAS (1972-4) 'Donations to and purchases for the Museum and Library', Proc Soc Antiq Scot, vol. 105.

Asset/Event Number	133
Asset/Event Name	Kildonan,dun
Type of Asset/Event	Prehistoric domestic and defensive: dun
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM243; NR72NE 5
HER Number	
Status	Scheduled Monument
Easting	178059
Northing	627794
Parish	Campbeltown
Council	Argyll And Bute
Description	OS 6" map, Argyllshire, 2nd ed., (1924)

A well-preserved dun, crowning a rocky knoll and measuring 19.2m by 13.1m within a wall 1.5m to 4.3m thick, composed of a rubble core faced with boulders, and having an internal revetment. For a distance of 5.5m south of the entrance in the SW, this revetment is replaced by a narrow, curving gallery open at both ends. The inner face of the wall is set at a higher level than the outer and on the north stands to its original height of a little over 2.1m, but elsewhere is only about 1.2m high. The outer face exhibits a marked batter and is now 2.4m in maximum height but it may originally have been 3.7m high at the entrance, and as much as 4.6m in places along the east side. The entrance, 1.65m to 2.59m wide is paved and provided with door-checks and bar-holes.

From the interior of the dun a short passage on the NE leads to a mural cell which has lost its corbelled roof; and another opening on the west gives access to twin staircases built against the internal revetment. Excavations between 1936 and 1938 indicated that there had been several occupations and modern excavations at comparable sites indicate a primary occupation in the late first or early second centuries AD. Kerbed hearths and what were thought to be the foundations of small huts were associated with this period and among the finds was a single, small sherd of samian. A 9th century bronze penannular brooch indicated Dark Age occupation and the site was again re-occupied between the late 12th and early 14th centuries. In final

phase, which cannot be dated, the interior of the dun appears to have been adapted for use as a stock enclosure.

H Fairhurst 1939; RCAHMS 1971, visited 1960.

The dun is as described and illustrated by the previous authorities.

Surveyed at 1:10 000.

Visited by OS (JB) 8 November 1977.

Sounding below Fairhurst's Period II Hearth 2 (vide PSAS 1939) in order to recover assays for C14 dating yielded quantities of charcoal, part of an iron knife, a mica schist disc, two socketed stones (mortars) and a paved area attributable to the first phase of occupation.

E Peltenburg and F Hood 1979.

NR 7806 2778 Site identified as part of a coastal zone assessment survey.

M Cressey, S Badger, 2005.

Asset/Event Number	134
Asset/Event Name	Standing stones, 170m NW of Druid Barn
Type of Asset/Event	Prehistoric ritual and funerary: standing stone
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	SM393
HER Number	
Status	Scheduled Monument
Easting	189049
Northing	636331
Parish	Kilmory
Council	North Ayrshire
Description	The monument comprises two prehistoric standing stones, one now fallen. The standing stones likely date from the late Neolithic or Bronze Age periods (between 3800 and 2500 BC). The erect stone is around 5m high, 0.3m thick and 1.8m wide. The fallen stone, lying adjacent and now broken into three pieces, measures around 5m long in total and 1.5m wide. The stones are located on a flat, agricultural, coastal plain around 400m from the coastline. The scheduled area is circular, measuring 15m in diameter. It includes the remains described above and an area around within which evidence relating to the monument's construction, use and abandonment is expected to survive, as shown in red on the accompanying map. Statement of National Importance The national importance of the monument is demonstrated in the following way(s) (see Designations Policy and Selection Guidance, Annex 1, para 17): a. The monument is of national importance because it makes a significant contribution to our understanding or appreciation of the past. Standing stones are one of the main sources of evidence for the Neolithic in Scotland and so are important in our understanding of the nature of Scotland's prehistoric society and landscape. The example contributes to our understanding of the design, construction and siting of prehistoric ritual monuments in the Neolithic period. b. The monument retains structural, architectural, decorative or other physical attributes

which make a significant contribution to our understanding or appreciation of the past. In particular, the standing stones retain impressive field characteristics due to their scale. There is also potential for the survival of buried archaeological deposits which can contribute to our understanding of the meaning and importance of ritual in the Neolithic period.

c. The monument is a rare example of standing stones of a massive scale: it is uncommon for such monuments to stand to this height.

d. The monument is a particularly good example of a pair of standing stones and is therefore an important representative of this monument type. It can enhance our understanding of Neolithic society and economy, as well as the nature of burial and ceremonial practices and belief systems.

e. The monument has research potential which could significantly contribute to our understanding or appreciation of the past. The form of the monument can be researched, contrasted and compared with other monuments of this type. The remains of the monument have the potential to provide material for carbon dating which when compared with similar monuments could contribute to a better understanding of the chronological development of standing stone construction during this period of Scottish prehistory. Additionally, there is the potential for environmental material to survive around the base of the standing stones which could provide information on demographics, land use and environment.

f. The monument makes a significant contribution to our understanding of the prehistoric landscape of Arran; it is located to the north west of the rich prehistoric landscape of Machrie Moor. Standing stones are found in a variety of locations in the west of Scotland, and the siting of these ritual monuments can give important insights into the Neolithic landscape and add to our understanding of social organisation.

Assessment of Cultural Significance

This statement of national importance has been informed by the following assessment of cultural significance:

Intrinsic characteristics (how the remains of a site or place contribute to our knowledge of the past)

The standing stones are of a notable size. The scale of the standing example is impressive and among the tallest in the west of Scotland. The fallen stone is likely to be situated on the spot, or at least within very close proximity to, where it originally stood. It is probable that it broke into three pieces when it fell to the ground.

There is likely to have been Neolithic Age activity in the vicinity of the standing stones. Examples of standing stones that have undergone detailed scientific analysis provide evidence for ritual and ceremonial activities taking place around the stone, this monument has the potential to yield such information. Therefore, archaeology related to use and activities around the fallen stone is also likely to survive.

In some excavated examples, such as at Carlinwell, Angus (scheduled monument reference SM4315, Canmore ID 32362) inhumations or cremation burials have been found placed around standing stones and this includes skeletal material as well as urns and grave goods. Surviving environmental remains can help us understand more about the vegetation cover and land use at the time of its erection and then use.

Contextual characteristics (how a site or place relates to its surroundings and/or to our existing knowledge of the past)

Standing stones are a widespread class of monument across Scotland. This example sits within a level coastal plain, with hills behind and a view across to the sea, some 400m distant. There are four other recorded standing stones or stone circles within 4km of this example. The closest example is approximately 2.5km southeast of the monument - Machrie Farm, standing stone 1100m NE of (Scheduled Monument reference SM4430 and Canmore ID reference 39759). Other broadly contemporary, and possibly related, monuments in the area include burial cairns. A nearby example, only 3km south-southeast of this monument is Tormore, long

cairn 875m SSE of Crochandoon (scheduled monument reference SM407 and Canmore ID reference 39779). The area of Machrie Moor is around 4km southeast and is the location of a concentration of prehistoric ritual and burial sites. There are other examples of standing stones in that area and some are of similar scale to these examples.

The position of these standing stones may have been deliberately chosen to take advantage of routeways, views and intervisibility with other monuments. There is potential to study this monument and its relationship to other prehistoric monuments in the landscape.

Associative characteristics (how a site or place relates to people, events, and/or historic and social movements)

There are currently no known associative characteristics that contribute to the national importance of the monument.

References

Bibliography

Historic Environment Scotland <http://www.canmore.org.uk> reference number CANMORE ID 39210 (accessed on 24/02/2020).

Asset/Event Number	135
Asset/Event Name	Loch Dirigadale
Type of Asset/Event	Cup Marked Stone
Date and/or Period	PREHISTORIC
Listing No./NRHE Number	NR74NW 7
HER Number	
Status	Non-designated Heritage Asset
Easting	171980
Northing	645050
Parish	Killeen And Kilchenzie
Council	Argyll And Bute
Description	(NR 71994505) Cup-marked stone. (Not included in the RCAHM Inventory). Information from D Colville to OS, 1953 and from RCAHMS 6" map. This cup-marked boulder measures 0.8m by 0.7m. On its upper face, which is inclined to the NW, there are at least nine cup marks. Surveyed at 1:10 000. Visited by OS (J B) 25 January 1978.

Asset/Event Number	136
Asset/Event Name	Braids
Type of Asset/Event	Armlet (Gold)
Date and/or Period	BRONZE AGE
Listing No./NRHE Number	NR74SW 1
HER Number	

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Status	Non-designated Heritage Asset
Easting	171880
Northing	644710
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	(NR 7188 4471) McInnes (1935) notes a Bronze Age gold bracelet, now lost, from Braids (NR 718 447), Killean. Colville says it was penannular, was cast up by a rabbit, and was found by a shepherd named Robertson at NR 7188 4471. RCAHMS 1971; L McInnes 1971; Information from D Colville to OS, 1953. Coles (1962), quoting Miss Campbell (Kilberry Castle, Kilberry), notes two Late Bronze Age Irish gold armlets and an associated grave at Killean. The armlets could be the bracelets noted by McInnes (supra), one found at Killean House (NR64SE 3) and the other at Braids, but with which the grave is associated is not clear. J M Coles 1962. No further information. Visited by OS (N K B) 15 March 1978.

Asset/Event Number	137
Asset/Event Name	Kilmory
Type of Asset/Event	Church (Possible)
Date and/or Period	
Listing No./NRHE Number	NR74SW 14
HER Number	
Status	Non-designated Heritage Asset
Easting	170000
Northing	644900
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	There appears to have been a church or chapel at Kilmory (NR 700 449). Orig Paroch Scot 1854. No further information was found locally about this site. Visited by OS (J B) 17 February 1978.

Asset/Event Number	138
Asset/Event Name	Braids
Type of Asset/Event	Cup Marked Stone
Date and/or Period	PREHISTORIC

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Listing No./NRHE Number NR74SW 26

HER Number

Status Non-designated Heritage Asset

Easting 171800

Northing 644600

Parish Killean And Kilchenzie

Council Argyll And Bute

Description NR 718 446. Cup-marked Stone, Braids: A stone, bearing over 20 cups, has been uncovered by recent ditching in a field S of Braids farm.

Kintyre Antiq Natur Hist Soc 1979.

Asset/Event Number 139

Asset/Event Name Drumnamucklach

Type of Asset/Event Cup And Ring Marked Stone

Date and/or Period PREHISTORIC

Listing No./NRHE Number NR74SW 7

HER Number

Status Non-designated Heritage Asset

Easting 170660

Northing 644490

Parish Killean And Kilchenzie

Council Argyll And Bute

Description (NR 7066 4449) A cup and ring marked stone lies just under 1.2 km NE of Drumnamucklach, and 90m S of the gorge of the Killean Burn. Measuring 2.4m by 1.5m and 0.6m in height, it lies in open moorland a few metres S of a rough track leading out to the hill from a gate in a stone wall 175m to the NW. Scattered over its level upper surface there are forty-two well-marked cups ranging from 0.025m to 0.076m in diameter and up to 0.013 m in depth. Five of the cups have a single surrounding ring (the largest measuring 0.25m in diameter) and in two instances a radial groove leads from the cup to the ring but not beyond. On the S portion of the stone two ringed cups are linked by connecting grooves, one of which incorporates two cups. Roughly in the centre of the stone a pair of cups are joined together by a thin channel to form an elongated dumb-bell figure.

RCAHMS 1971, visited 1961; R W B Morris 1977.

No change to above report.

Surveyed at 1:10 000.

Visited by OS (J M) 8 February 1978.

Asset/Event Number 140

Asset/Event Name Braids

Type of Asset/Event Cup Marked Stone

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Date and/or Period	PREHISTORIC
Listing No./NRHE Number	NR74SW 30
HER Number	
Status	Non-designated Heritage Asset
Easting	171600
Northing	644700
Parish	Killeen And Kilchenzie
Council	Argyll And Bute
Description	8 solo cups on southern face and 7 solo cups on eastern and top face of a boulder. Sponsor: Keltic Research Society Naddair and MacLardy 1994a.

Asset/Event Number	141
Asset/Event Name	Cruach A'bhodaigh
Type of Asset/Event	Quarry
Date and/or Period	
Listing No./NRHE Number	NR74SW 35
HER Number	
Status	Non-designated Heritage Asset
Easting	173150
Northing	644110
Parish	Killeen And Kilchenzie
Council	Argyll And Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7315 4411 Quarry. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	142
Asset/Event Name	Cruach A'bhodaigh
Type of Asset/Event	Quarry
Date and/or Period	
Listing No./NRHE Number	NR74SW 36
HER Number	
Status	Non-designated Heritage Asset

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Easting	173300
Northing	643830
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7330 4383 Quarry. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	143
Asset/Event Name	Allt Chaltuinn
Type of Asset/Event	Quarry
Date and/or Period	
Listing No./NRHE Number	NR74SW 37
HER Number	
Status	Non-designated Heritage Asset
Easting	173500
Northing	643920
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7350 4392 Quarry. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	144
Asset/Event Name	Braids, Limekiln
Type of Asset/Event	Lime Kiln
Date and/or Period	
Listing No./NRHE Number	NR74SW 41
HER Number	
Status	Non-designated Heritage Asset

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Easting	171950
Northing	644950
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	Site recorded during a desk-based assessment carried out in advance of a proposed wind farm development. NR 7187 4501 Limekiln. A report has been lodged with the NMRS. Sponsor: Natural Power Company. B Glendinning 1998

Asset/Event Number	145
Asset/Event Name	Killean
Type of Asset/Event	Enclosure, Field Boundary(S)
Date and/or Period	
Listing No./NRHE Number	NR64SE 53
HER Number	
Status	Non-designated Heritage Asset
Easting	169495
Northing	644782
Parish	Killean And Kilchenzie
Council	Argyll And Bute
Description	This enclosure has been recorded as a parchmark on oblique aerial photographs (RCAHMSAP 2010). It is circular in plan and defined by a ditch about 4m wide. The enclosed area is in 36m diameter with two breaks in the ditch at the S and E. Various field boundaries and a track are also visible. There are two blocks of rig orientated generally E-W, with a 7m spacing between furrows. Information from RCAHMS (KHJM) 30th June 2011



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