Project Name: Cruach Clenamacrie Wind Farm

Document Title: Zone of Theoretical Visibility (blade tip): Bare Ground

Scale: 1:160,000 @ A1

Key:

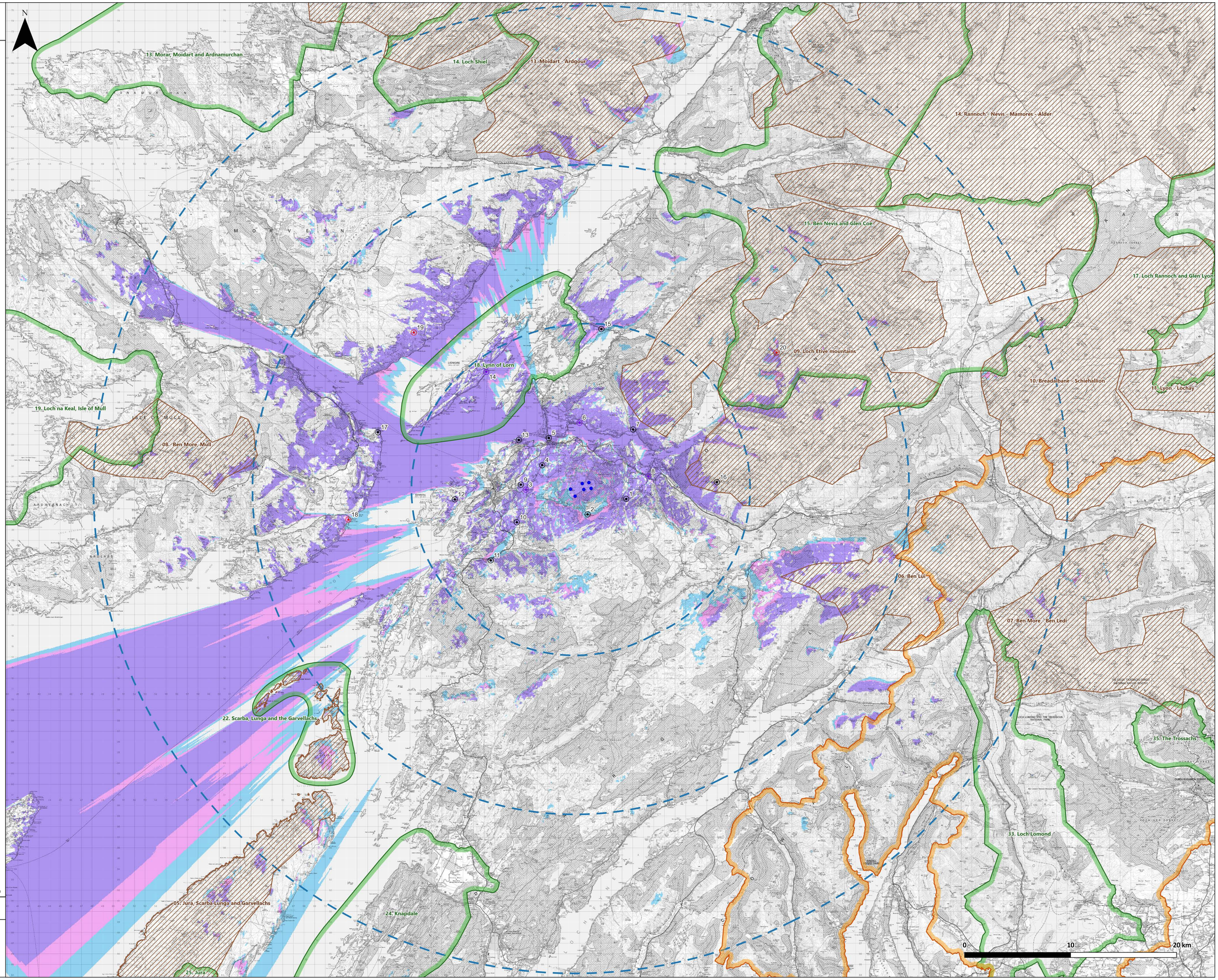
- Proposed Turbines
- Distance from turbines (15, 30, 45km)
- Loch Lomond and the Trossachs National Park
- National Scenic Areas
- Wild Land Areas

Viewpoints

- Representative Viewpoint
- Representative Viewpoint - including night-time
- Representative Viewpoint - Wireline only

Zone of Theoretical Visibility (tip height - 200m)

- 1-2 turbines visible
- 3-4 turbines visible
- 5-6 turbines visible



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 topography into account. This visibility map is based on a 'bare earth' digital terrain model (DTM) and does not show the screening effect of any above ground features such as vegetation or buildings.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on OS Terrain 50 data and has a 50m resolution.

Client: Voltalia UK

Drawing By: Abseline LLP

Figure Number: Figure 6.1
Version: 1
Author: SH
Checked By: ME
Approved By: ME
Date: 20/08/2024

Project Name: Cruach Clenamacrie Wind Farm

Document Title: Zone of Theoretical Visibility (blade tip): incl. screening from woodland & buildings

Scale: 1:90,000 @ A1

Key:

- Proposed Turbines
- Distance from turbine (5, 15, 25km)
- Local Landscape Areas (Argyll & Bute Council)
- Special Landscape Areas (The Highland Council)
- Gardens and Designed Landscapes

Viewpoints

- Representative Viewpoint
- Representative Viewpoint - including night-time
- Representative Viewpoint - Wireline only

Zone of Theoretical Visibility (blade tip - 200m)

- 1-2 turbines visible
- 3-4 turbines visible
- 5-6 turbines visible

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 (and OS Terrain 5 for areas closer to the site including viewpoints 1-19) 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 7m 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 50m resolution.

Client: Voltalia UK

Drawing By: Abseline LLP

Figure Number: Figure 6.2
Version: 1
Author: SH
Checked By: ME
Approved By: MF
Date: 20/08/2024

ABSELINE LANDSCAPE PLANNING

0 5 10 km

Project Name:	Cruach Clenamacrie Wind Farm
Document Title:	ZTV study (aviation lighting): incl. screening from woodland & buildings
Scale:	1:72,000 @ A1

Key:

- Proposed Turbines (with lighting)
- Proposed Turbines (without lighting)
- Distance from turbines (5, 10, 20km)

Distance from turbines (5, 10, 20km)

- National Park
- National Scenic Areas
- Local Landscape Areas (Argyll & Bute Council)
- Special Landscape Areas (The Highland Council)
- Gardens and Designed Landscapes
- Wild Land

Viewpoints

- Representative Viewpoint
- Representative Viewpoint - including night-time
- Representative Viewpoint - Wireline only

Zone of Theoretical Visibility (aviation lighting - 117m)

- 1 - 2 lights visible
- 3 - 4 lights visible
- 5 lights visible

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 and OS Terrain 5 (within the areas closest to the site including viewpoints 1-19) height data. The locations of woodland and buildings taken from the OS Open Map Local dataset. Buildings have been modelled with an assumed height of 7m 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 50m resolution.

Client:	Voltalia UK
Drawing By:	Abseline LLP

voltalia

Figure Number:	Figure 6.3
Version:	1
Author:	SH
Checked By:	ME
Approved By:	ME
Date:	02/10/2024

ABSELINE LANDSCAPE PLANNING

0 5 10 km

Project Name: Cruach Clenamacrie Wind Farm

Document Title: Topography and Landcover

Scale: 1:185,000 @ A3

Key:

- Proposed Turbines
- Distance from turbines (5, 15, 25km)
- Surface water
- Woodland

Elevation (metres AOD)

1212

0

0 5 10 km

Client:	Voltalia UK
Drawing by:	Abseline LLP

Figure Number:	Figure 6.4
Version:	1
Author:	SH
Checked by:	MF
Approved by:	MF
Date:	20/08/2024

Project Name: Cruach Clenamacrie Wind Farm

Document Title: Landscape Character

Scale: 1:220,000 @ A3

Key:

- Proposed Turbines
- Distance from turbines (5, 15, 25km)
- Operational wind farms
- Consented wind farms

Landscape Character - Argyll and Bute (ABLWECS - 2017)

- 1 Steep Ridgeland and Mountains
- 2 High Tops
- 2a Mull High Tops
- 4 Mountain Glens
- 6a Loch Fyne Upland Forest-Moor Mosaic
- 7 Craggy Upland
- 7a Craggy Upland with Settled Glens
- 7b Craggy Coasts & Islands
- 7c North Loch Awe Craggy Upland
- 7d Lorn Craggy Upland
- 7e Mull Craggy Upland
- 10 Upland Parallel Ridges
- 14 Ben Nevis and Glen Coe
- 17 Mull Basalt Lowlands
- 18 Lowland Ridges and Moss
- 20 Rocky Mosaic
- Lynn of Lorn NSA

Landscape Character - NatureScot (2019)

- 40 Craggy Upland - Argyll
- 233 Mountain Massif - Lochaber
- 238 Rugged Massif - Lochaber
- 239 Interlocking Sweeping Peaks - Lochaber
- 243 Lowland Ridges and Moss - Lochaber
- 244 Craggy Upland - Lochaber
- 245 Plateau Moorland - Lochaber
- 246 Stepped Cliffs and Terraces - Lochaber

Client: Voltalia UK

Drawing by: Abseline LLP

Figure Number: Figure 6.5

Version: 1

Author: SH

Checked by: MF

Approved by: MF

Date: 07/11/2024

Project Name: Cruach Clenamacrie Wind Farm

Document Title: Landscape Character and ZTV Study (10km)

Scale: 1:80,000 @ A3

Key:

- Proposed Turbines
- Distance from turbines (5, 10km)
- Operational wind farm
- Viewpoints

Landscape Character with visibility - Argyll and Bute (ABLWECS - 2017)

- 2 High Tops
- 4 Mountain Glens
- 7 Craggy Upland
- 7a Craggy Upland with Settled Glens
- 7b Craggy Coasts & Islands
- 7c North Loch Awe Craggy Upland
- 18 Lowland Ridges and Moss
- 20 Rocky Mosaic
- Lynn of Lorn NSA

Client: Voltalia UK

Drawing by: Abseline LLP

Figure Number: Figure 6.6

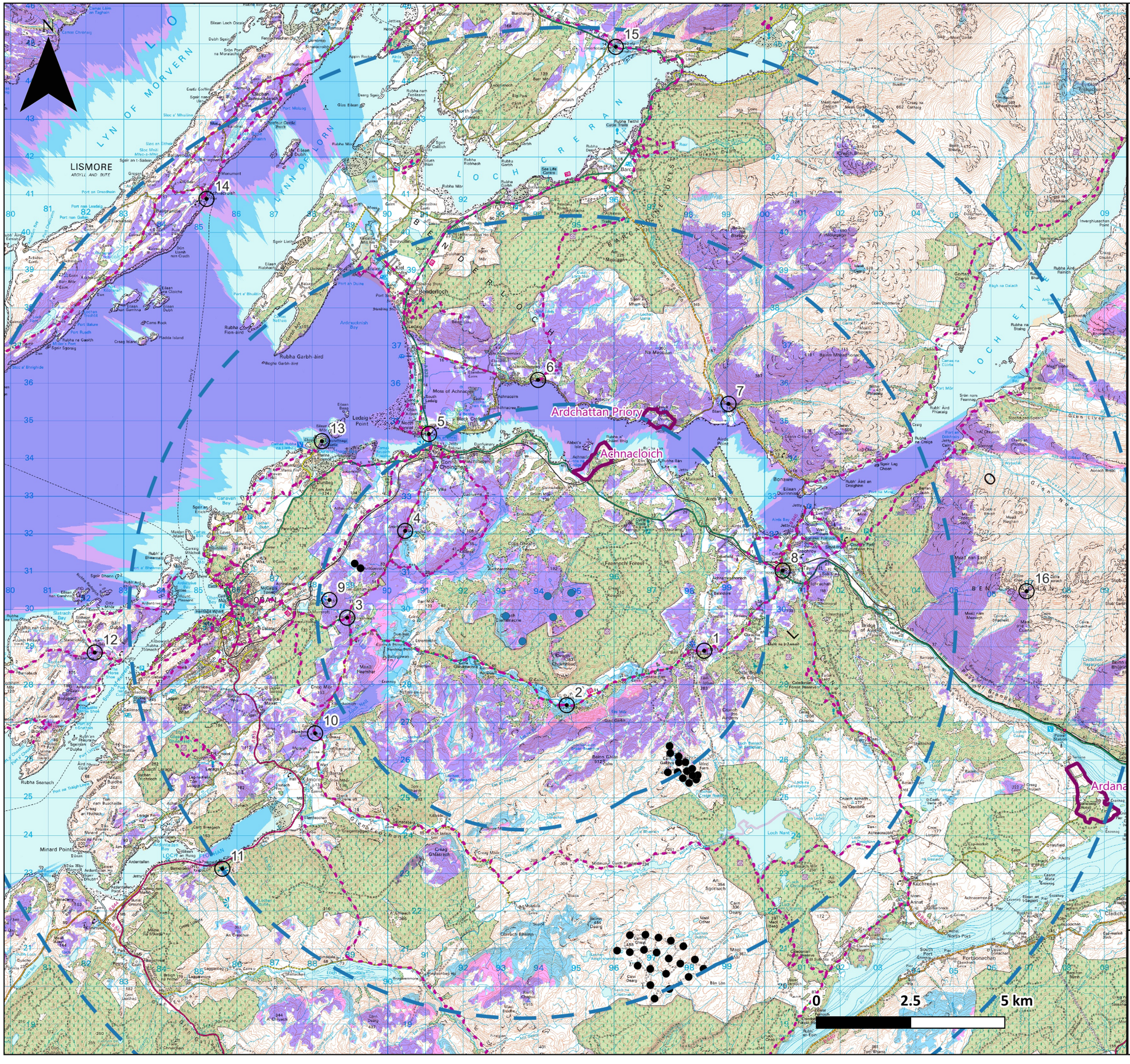
Version: 1

Author: SH

Checked by: MF

Approved by: MF

Date: 20/08/2024



Project Name: Cruach Clenamacrie Wind Farm

Document Title: Visual Receptors - detailed study area

Scale: 1:100,000 @ A3

Key:

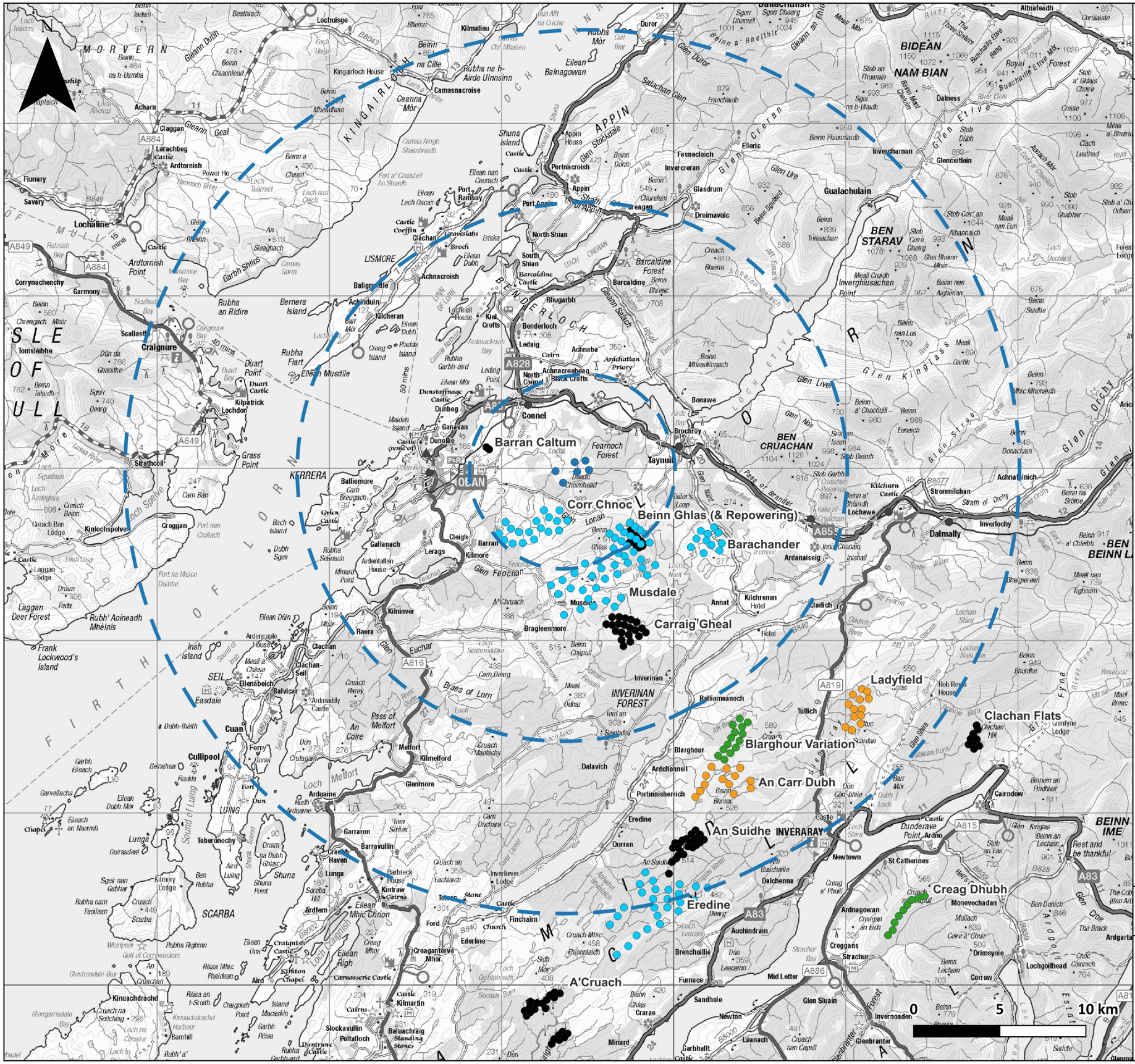
- Proposed Turbines
- Distance from turbines (5, 10, 15km)
- Operational wind farm
- Viewpoints
- Gardens and Designed Landscapes
- Core Paths

Theoretical Visibility (Blade tip)

- 1-2 turbines visible
- 3-4 turbines visible
- 5-6 turbines visible

Client:	Voltalia UK
Drawing by:	Abseline LLP

Figure Number:	Figure 6.7
Version:	1
Author:	SH
Checked by:	MF
Approved by:	MF
Date:	07/11/2024



Project Name: Cruach Clenamacrie Wind Farm

Document Title: Cumulative Sites

Scale: 1:220,000 @ A3

Key:

- Proposed Turbines
- Distance from turbines (5, 15, 25km)

Cumulative wind farms

- Operational
- Consented
- Planning
- Scoping

Client:	Voltalia UK
Drawing by:	Abseline LLP

Figure Number:	Figure 6.8
Version:	1
Author:	SH
Checked by:	MF
Approved by:	MF
Date:	22/08/2024

Project Name: Cruach Clenamacrie Wind Farm
Document Title: Cumulative ZTV (blade tip): Operational and Consented Wind Farms
Scale: 1:90,000 @ A1

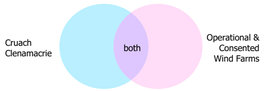
Key:

- Proposed Turbines
- Distance from turbine (5, 15, 25km)

Viewpoints

- Representative Viewpoint
- Representative Viewpoint - including night-time
- Representative Viewpoint - Wireline only

Zone of Theoretical Visibility (blade tip - 200m)



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 (and OS Terrain 5 for areas closer to the site including viewpoints 1-19) 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 7m 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 50m resolution.

Client: Voltalia UK
Drawing By: Abseline LLP

Figure Number: Figure 6.9
Version: 1
Author: SH
Checked By: MF
Approved By: MF
Date: 21/08/2024

ABSELINE LANDSCAPE PLANNING

0 5 10 km

Project Name: Cruach Clenamacrie Wind Farm
Document Title: Cumulative ZTV (blade tip): Wind Farms in Planning
Scale: 1:90,000 @ A1

Key:

- Proposed Turbines
- Distance from turbine (5, 15, 25km)

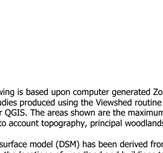
Viewpoints

- Representative Viewpoint
- Representative Viewpoint - including night-time
- Representative Viewpoint - Wireline only

Cumulative Developments in Planning

- An Carr Dubh Wind Farm
- Ladyfield Wind Farm

Cumulative Zone of Theoretical Visibility



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 7m 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 50m resolution.

Client: Voltalia UK
Drawing By: Abseline LLP

voltalia

Figure Number: Figure 6.10
Version: 1
Author: SH
Checked By: MF
Approved By: MF
Date: 21/08/2024

ABSELINE LANDSCAPE PLANNING

0 5 10 km

N

18. Lynn of Lorn

15. Ben Nevis and Glen Coe

22. Scarba, Lunga and the Garvellachs

0 2.5 5 km

Project Name: Cruach Clenamacrie Wind Farm
Document Title: Existing Light Environment & Night Time Receptors
Scale: 1:100,000 @ A3

Key:

- Proposed Turbines (with lighting)
- Proposed Turbines (without lighting)
- Viewpoints
- Distance from turbines (5, 10, 15, 20km)
- National Scenic Areas

Cumulative Developments

- Operational Turbines (without lighting)
- Consented Turbines (without lighting)
- Consented Turbines (with lighting)
- Turbines in Planning (without lighting)
- Turbines in Planning (with lighting)

Existing Light Environment
VIIRS 2023 (Radiance 10^{-9}W/cm² * SR)

- 0.00 - 0.10
- 0.10 - 0.22
- 0.22 - 0.28
- 0.28 - 0.33
- 0.33 - 1.80
- 1.80 - 2.80
- 2.80 - 6.00
- 6.00 - 15.00
- 15.00 - 30.00

Client: Voltalia UK
Drawing by: Abseline LLP

Figure Number: Figure 6.11
Version: 1
Author: SH
Checked by: MF
Approved by: MF
Date: 02/10/2024

Project Name: Cruach Clenamacrie Wind Farm

Document Title: Residential Properties within 2km

Scale: 1:20,000 @ A3

Key:

- Proposed Turbines
- Distance from turbines (1,2km)
- Residential Properties

Theoretical Visibility (blade tip)

- 1-2 turbines visible
- 3-4 turbines visible
- 5-6 turbines visible

Client: Voltalia UK

Drawing by: Abseline LLP

Figure Number: Appendix 6.4 Figure 1

Version: 1

Author: SH

Checked by: MF

Approved by: MF

Date: 22/08/2024