



Offshore Wind Power Limited

West of Orkney Offshore EIA Report

Volume 2, Supporting Study 19: SLVIA Figures

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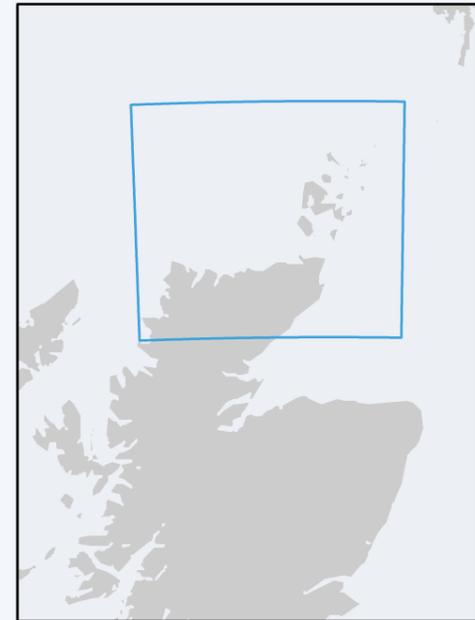
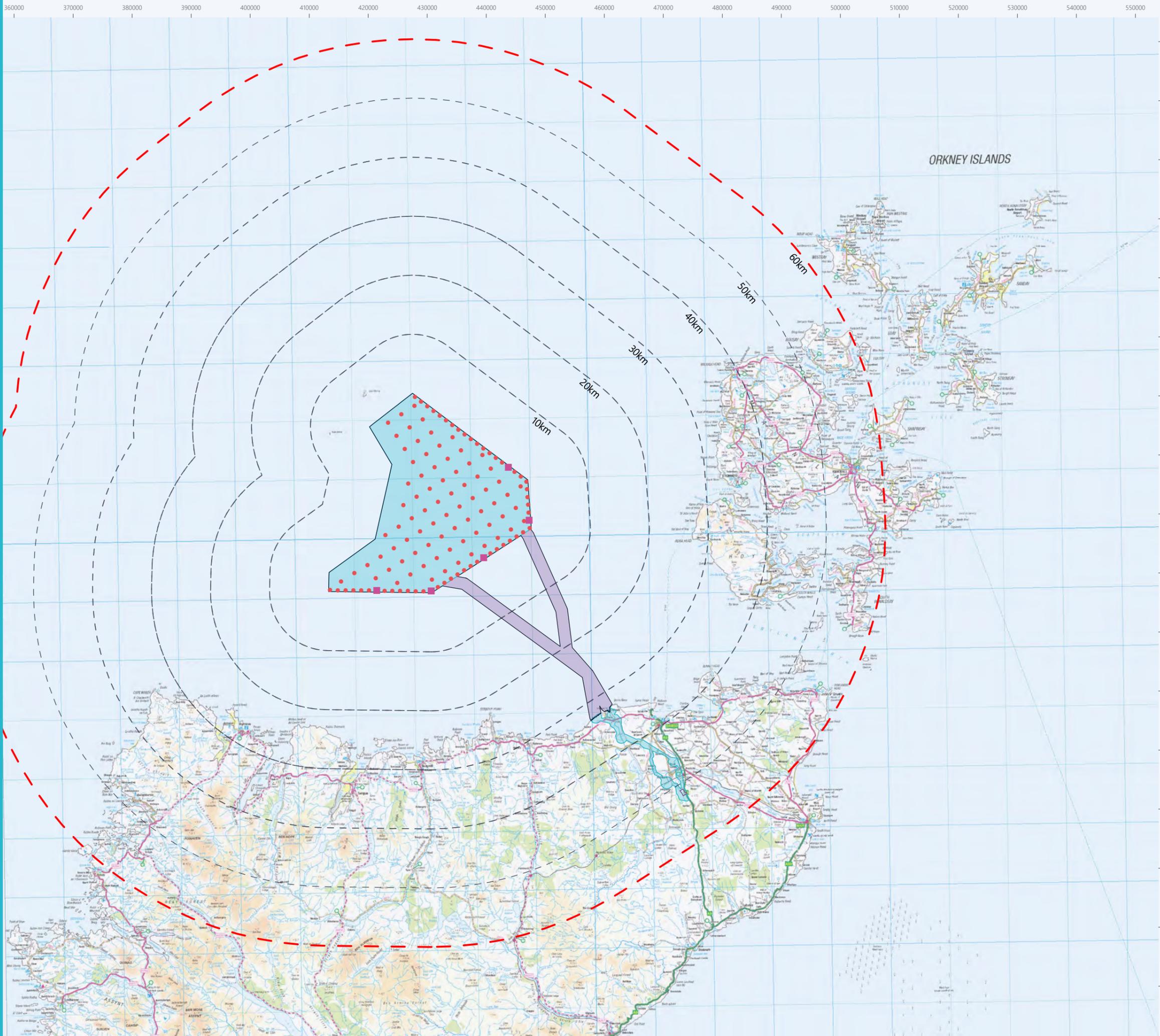
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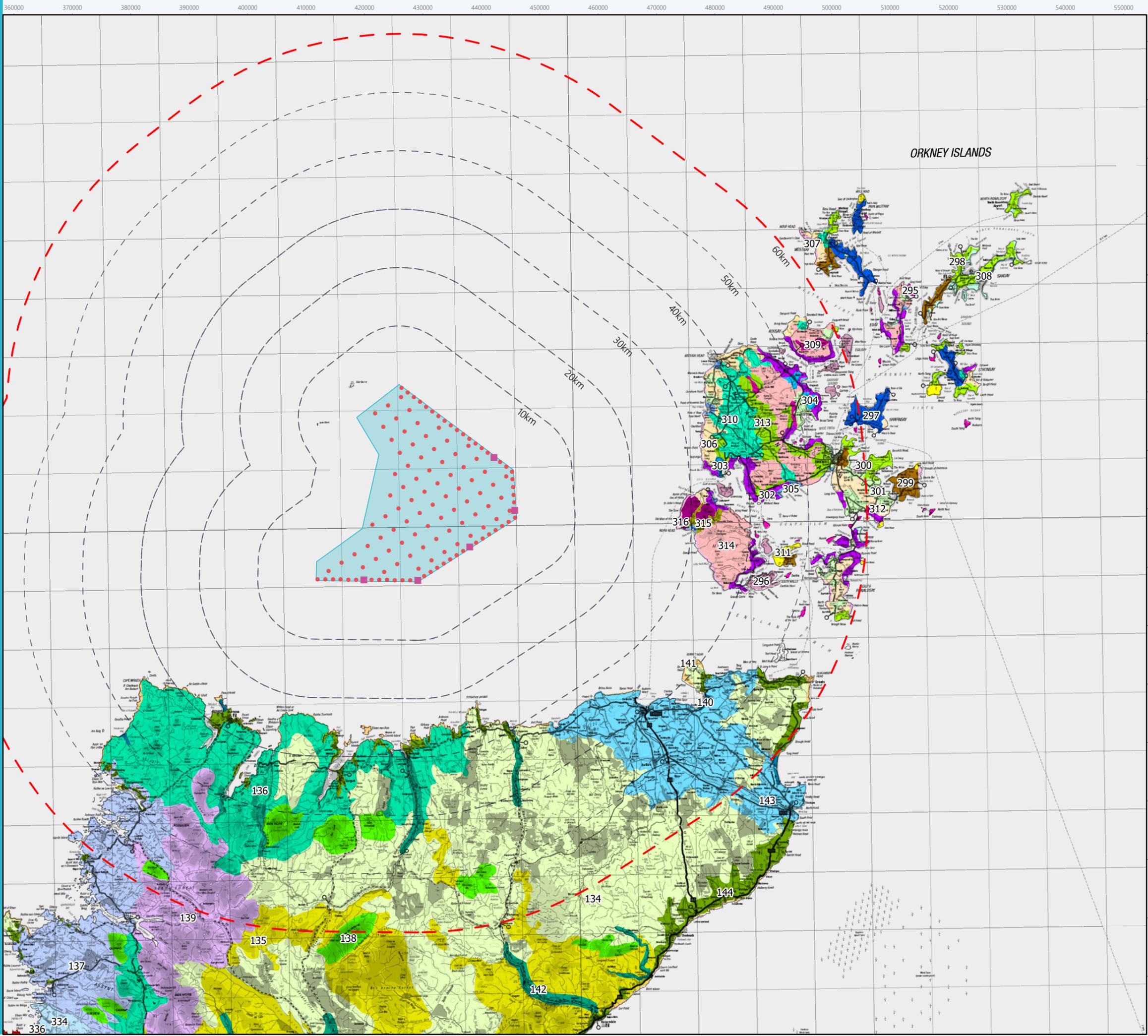
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www.xodusgroup.com



Option Agreement Area Location

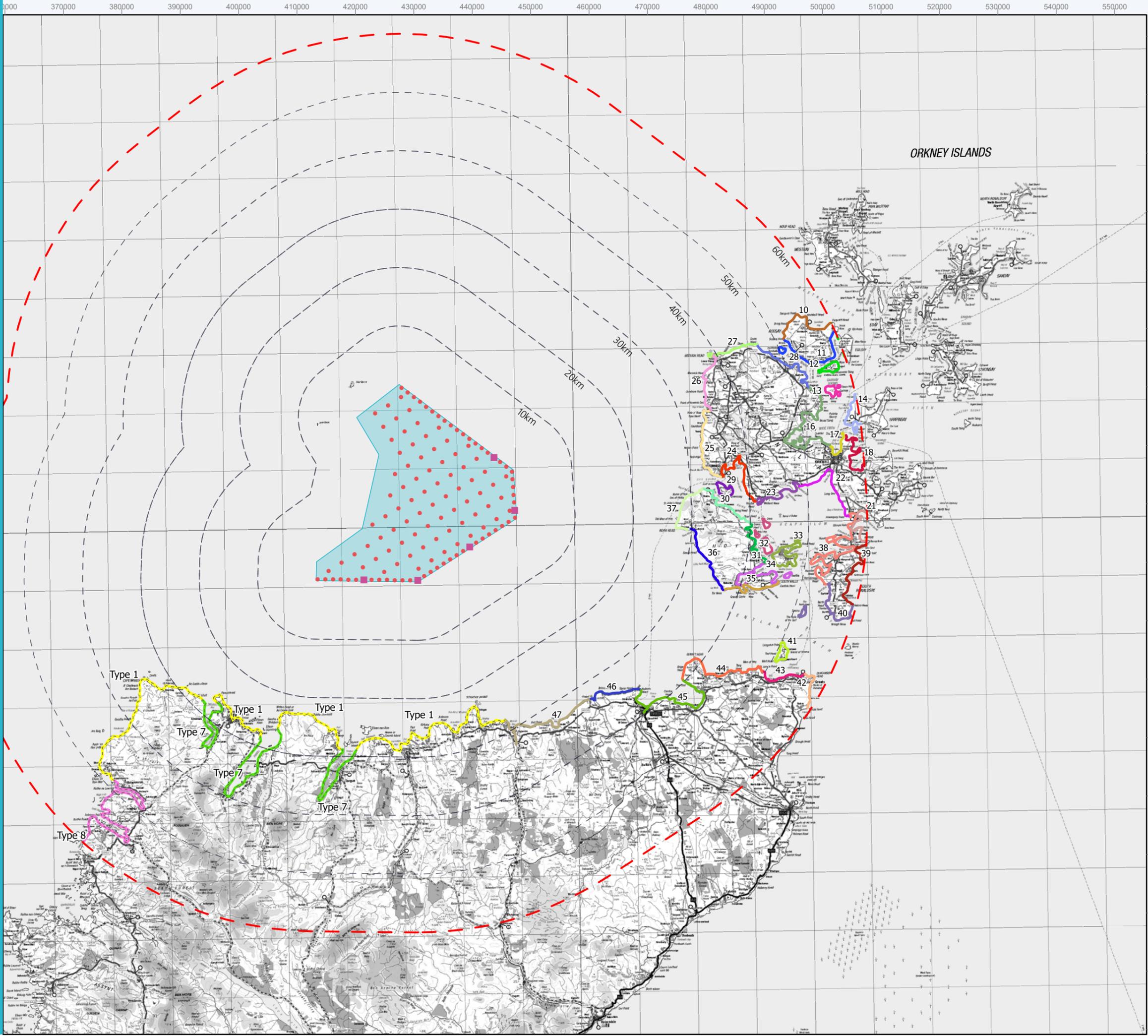
- Substations
- Turbines
- Option Agreement Area
- 60km Study Area
- Offshore Project area
- Onshore Project area
- Offshore export cable corridor options
- Onshore substation search area



Landscape Character Types

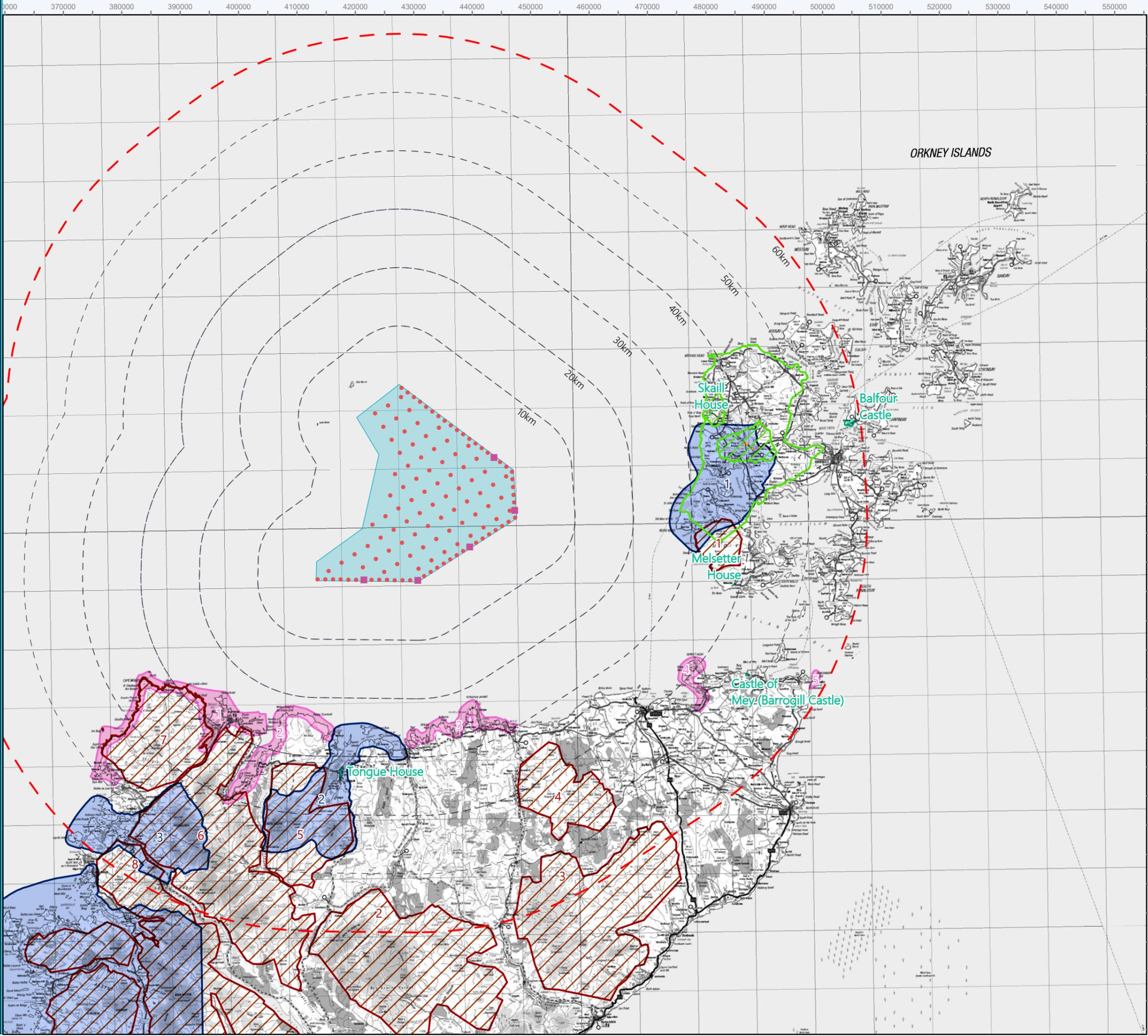
- Substations
- Turbines
- Option Agreement Area
- 60km Study Area
- Landscape Character Types**
- 134 Sweeping Moorland and Flows
- 135 Rounded Hills - Caithness & Sutherland
- 136 Rocky Hills and Moorland
- 137 Cnocan - Caithness & Sutherland
- 138 Lone Mountains
- 139 Rugged Mountain Massif - Caithness & Sutherland
- 140 Sandy Beaches and Dunes
- 141 High Cliffs and Sheltered Bays
- 142 Strath - Caithness & Sutherland
- 143 Farmed Lowland Plain
- 144 Coastal Crofts & Small Farms
- 295 Holms
- 296 Whaleback Islands
- 297 Ridgeline Islands
- 298 Low Island Pastures
- 299 Undulating Island Pasture
- 300 Coastal Plain - Orkney
- 301 Coastal Basin
- 302 Inclined Coastal Pasture
- 303 Rocky Coastal Pasture
- 304 Isolated Coastal Knolls
- 305 Enclosed Bays
- 306 Coastal Hills and Heath
- 307 Cliffs - Orkney
- 308 Coast with Sand - Orkney
- 309 Peatland Basin
- 310 Loch Basin - Orkney
- 311 Low Moorland
- 312 Plateau Heath and Pasture
- 313 Rolling Hill Fringe
- 314 Moorland Hills - Orkney
- 315 U-Shaped Valley
- 316 Rugged Hills
- 334 Cnocan - Ross & Cromarty
- 336 Coastal Moorlands and Crofts

Figure 18.2
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Landscape Character Types (Source: NatureScot Landscape Character Assessment 2019)



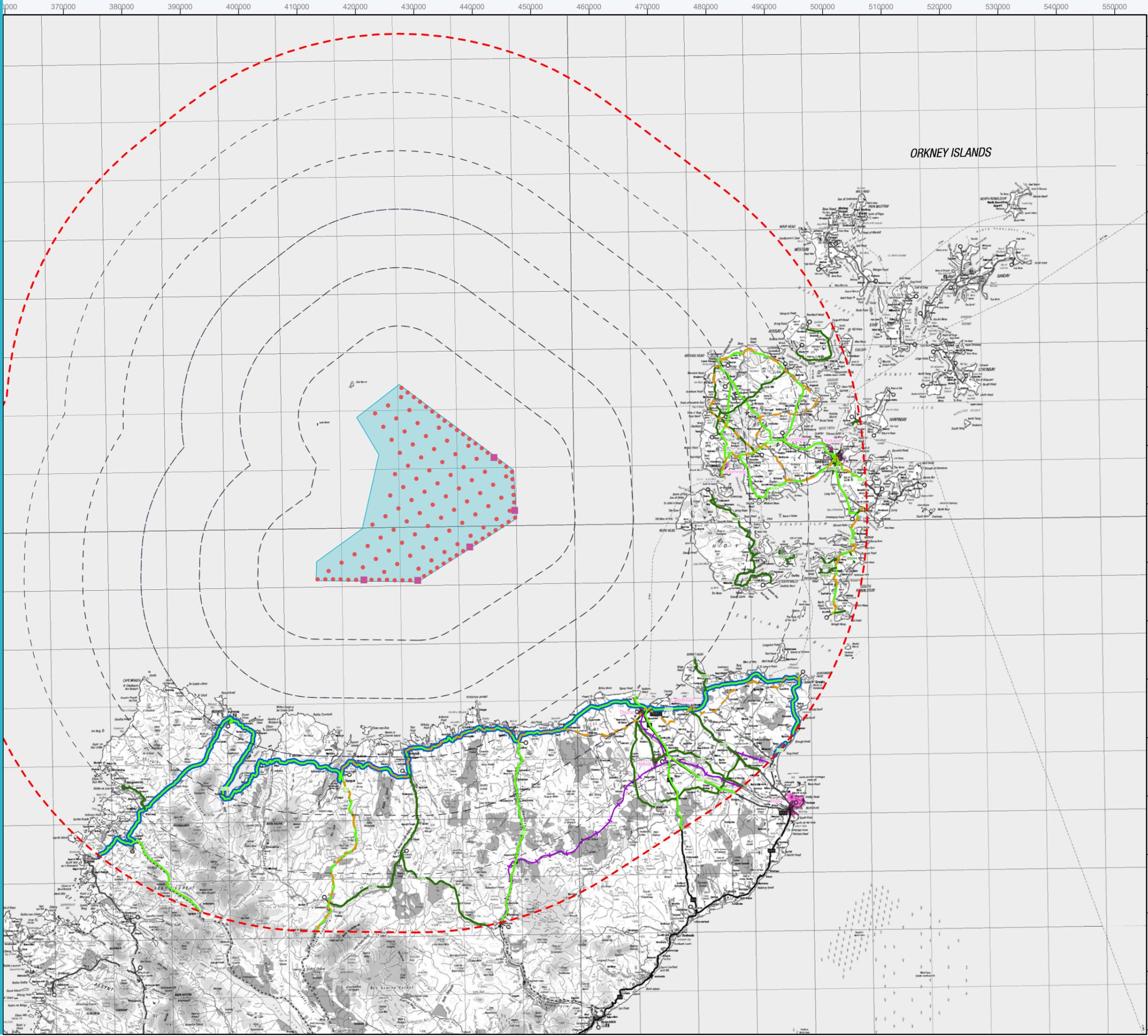
Regional Coastal Character Types

- Substations
 - Turbines
 - Option Agreement Area
 - 60km Study Area
- Regional Coastal Character Types**
- 10: Rousay North
 - 11: Rousay South
 - 12: Egilsay and Wyre
 - 13: Gairsay
 - 14: Shapinsay West
 - 16: Wide Firth
 - 17: Kirkwall
 - 18: Shapinsay Sound and Inganess Bay
 - 21: Holm Sound
 - 22: Scapa Bay
 - 23: Orphir
 - 24: Stromness and Clestrain Sound
 - 25: Breckness and Row Head
 - 26: Marwick Head and Bay of Skail
 - 27: Brough Head to Costa Head
 - 28: Eynhallow Sound
 - 29: Graemsay
 - 30: North East Hoy
 - 31: Cava, Rysa Little and Fara
 - 32: South East Hoy
 - 33: Flotta
 - 34: North Bay, Longhope and Switha
 - 35: South Walls and Brims Ness
 - 36: West Hoy Cliffs
 - 37: Rora Head and St John's Head
 - 38: West Burray and South Ronaldsay
 - 39: Burray Ness to Helcro Head
 - 40: Brough Ness and Barth Head
 - 41: Stroma
 - 42: Duncansby Head
 - 43: Gills Bay and John o'Groats
 - 44: Scarfskerry and Dunnet Head
 - 45: Dunnet Bay and Thurso Bay
 - 46: Brims Ness
 - 47: Portskerra
- Seascope Character Types**
- Type 1: Remote High Cliffs
 - Type 7: Kyles and Sea Lochs
 - Type 8: Enclosed Bays, Islands and Headlands



- ### Landscape Designations
- Substations
 - Turbines
 - Option Agreement Area
 - ▭ 60km Study Area
- ### World Heritage Sites
- Heart of Neolithic Orkney World Heritage Site Boundary
 - ▨ Heart of Neolithic Orkney World Heritage Site Buffer Zone
 - ▭ Heart of Neolithic Orkney World Heritage Site Sensitive Area
- ### Landscape Designation
- ▭ National Scenic Areas
 - 1: Hoy and West Mainland
 - 2: Kyle of Tongue
 - 3: North - West Sutherland
 - ▭ Special Landscape Areas (The Highland Council)
 - 1: Oldshoremore, Cape Wrath and Durness
 - 2: Eriboll East and Whiten Head
 - 3: Farr Bay, Strathy and Portskerra
 - 4: Dunnet Head
 - 5: Duncansby Head
 - ▨ Wild Land Areas
 - 1: Hoy
 - 2: Ben Klibreck - Armine Forest
 - 3: Causeymire - Knockfin Flows
 - 4: East Halladale Flows
 - 5: Ben Hope - Ben Loyal
 - 6: Foinaven - Ben Hee
 - 7: Cape Wrath
 - 8: Reay - Cassley
 - Garden and Designed Landscapes

Figure 18.4
© Crown copyright and database right 2022 Ordnance Survey 0100031673. National Scenic Areas (Source: Scottish Executive), Special Landscape Areas (Source: Natunscony, 2014)

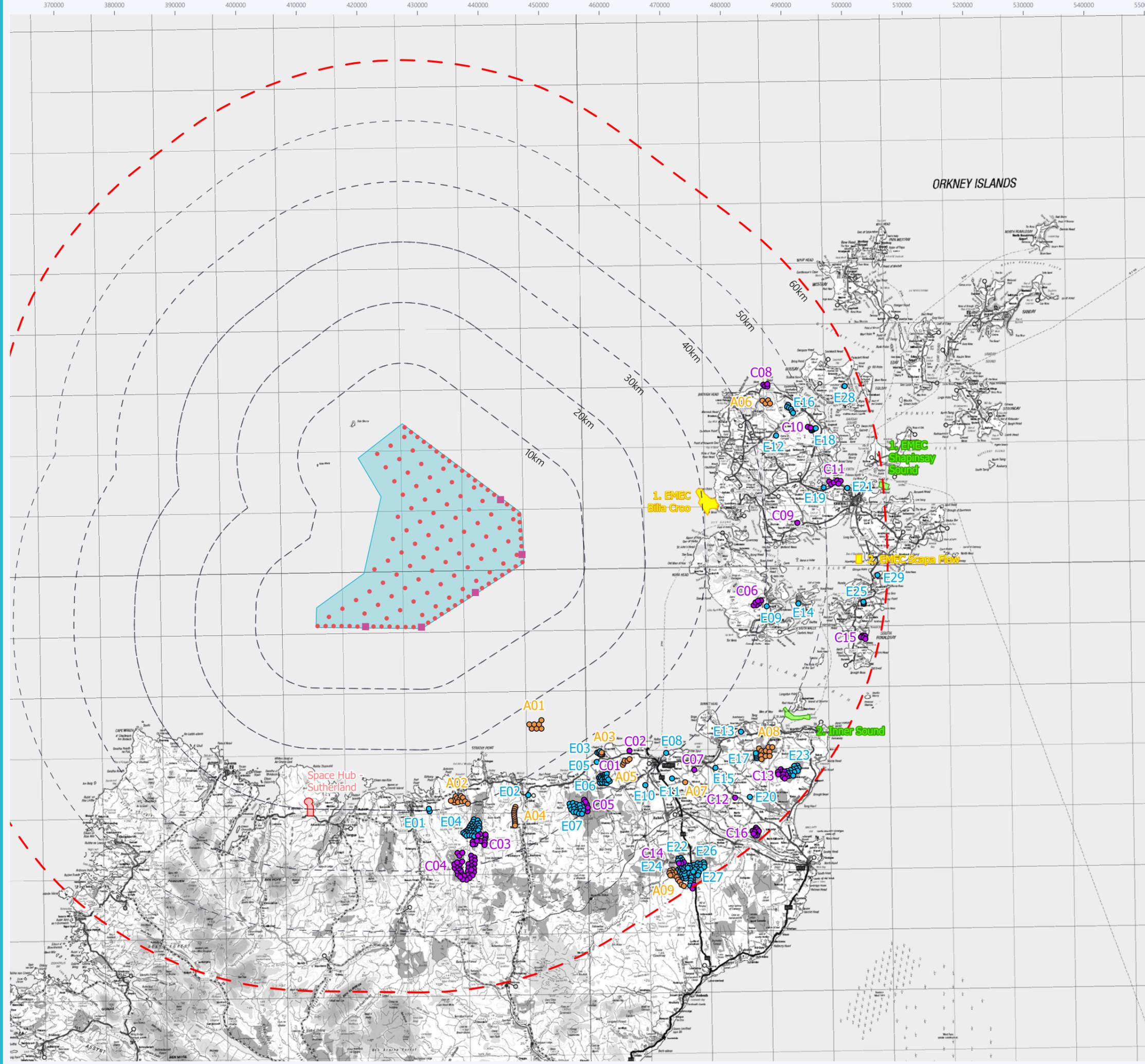


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ORKNEY ISLANDS

Transport and Recreational Routes

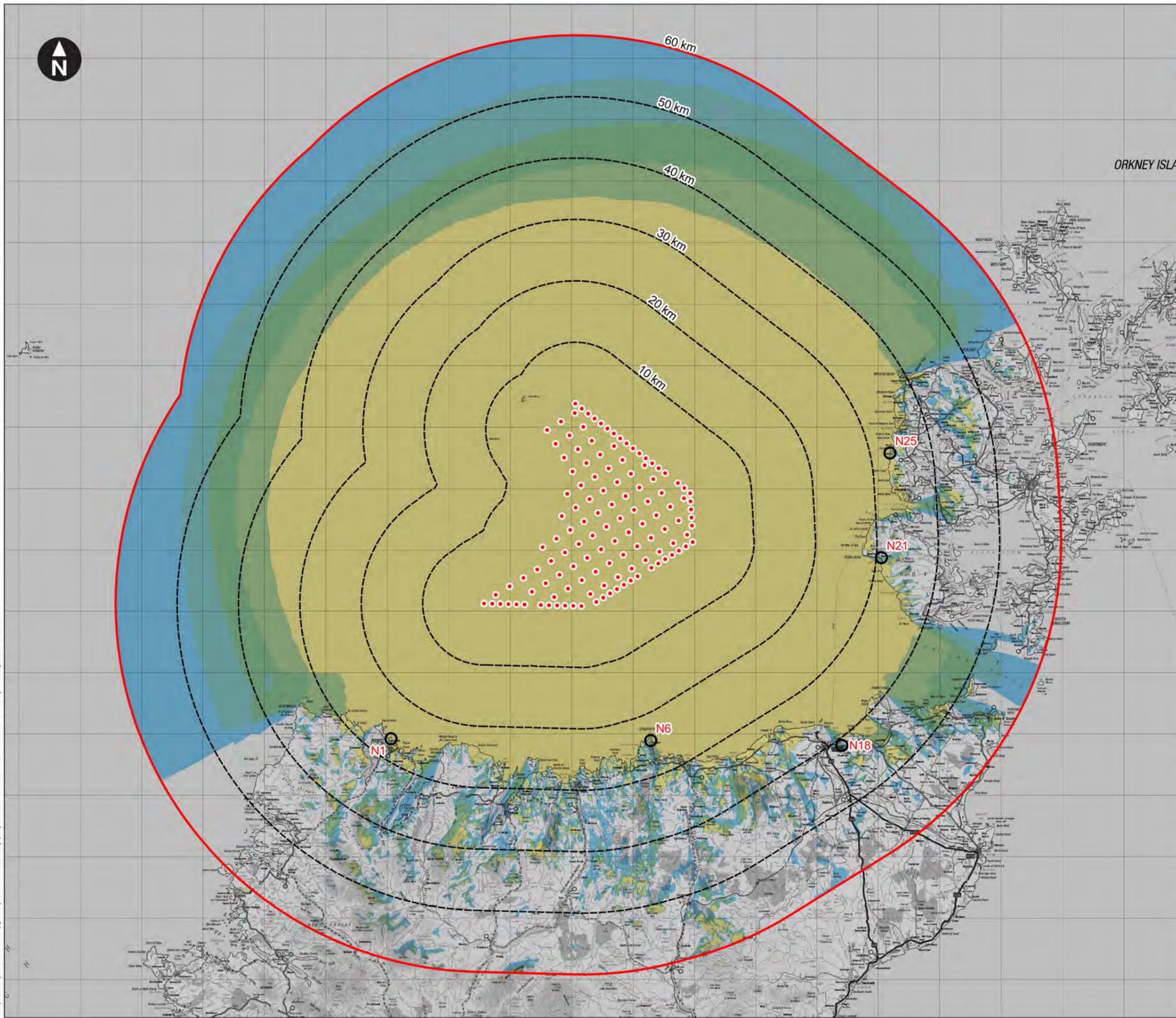
- Substations
- Turbines
- Option Agreement Area
- ⋯ 60km Study Area
- Transport and Recreational Routes**
- Sustrans National Route
- Railway
- Primary Road; A Road
- B Road
- North Coast 500
- Settlement



Cumulative Context

- Substations
 - Turbines
 - - - 60km Study Area
 - Option Agreement Area
 - Space Hub - Sutherland
 - Wave Farms
 - 1. EMEC Bilba Croo
 - 2. EMEC Scaja Flow
 - Tidal Farms
 - 1. EMEC Shapinsay Sound
 - 2. Inner Sound
-
- Existing/Under Construction Farms
 - Consented Wind Farms
 - Application Wind Farms
- | | |
|-----------------------------|----------------------------|
| E01 Bettyhill | C01 Hill of Lybster |
| E02 Ackron Farm | C02 Thusater Farm |
| E03 Forss I & II | C03 Strathy Wood |
| E04 Strathy North | C04 Strathy South |
| E05 Balmore Farm | C05 Limekiln Extension |
| E06 Baillie | C06 Hoy Community |
| E07 Limekiln | C07 Cnoc na Gaoithe |
| E08 Thurso WWTW | C08 Costa Head |
| E09 Ore Brae, Hoy | C09 Akla |
| E10 Moss of Geise | C10 Hammars Hill Extension |
| E11 Weydale Farm | C11 Quanterness |
| E12 Holodykes | C12 Thura Mains |
| E13 Taigh na Muir | C13 Slickly |
| E14 West Hill, Flotta | C14 Achlachan II |
| E15 Thurdisoft Farm | C15 Hesta Head |
| E16 Bargar Hill | C16 Cogle Moss |
| E17 Lochend | |
| E18 Hammars Hill | |
| E19 Rennibister | |
| E20 Burnside Lyth | |
| E21 Crownness Business Park | |
| E22 Achlachan | |
| E23 Stroupster | |
| E24 Causeymire | |
| E25 Berriedale | |
| E26 Halsary | |
| E27 Bad a Cheo | |
| E28 Kingarly Hill | |
| E29 Northfield, Burray | |

Figure 18.6



Key

- Proposed Lit Turbine Locations
- Landscape and Visual Study Area
- Lines indicating the distance from the proposed lit turbine locations
- Night-time viewpoint locations

- 101-125 nacelle lights may be theoretically visible
- 76-100 nacelle lights may be theoretically visible
- 51-75 nacelle lights may be theoretically visible
- 26-50 nacelle lights may be theoretically visible
- 1-25 nacelle lights may be theoretically visible

Notes: This drawing is based on a computer generated Zone of Theoretical Visibility (ZTV). The areas shown indicate the maximum theoretical visibility of the proposed turbines using OS Terrain 50 data only and do not take account of any screening from vegetation or built-form. The ZTV also includes an adjustment that allows for the Curvature and Light Refraction of the Earth. This figure has been based on the following parameters:
 Turbine layout file: LORKNEY001.WFL
 Hub height: 194.52m
 Rotor diameter: 330m
 Height to blade tip: 359.52m

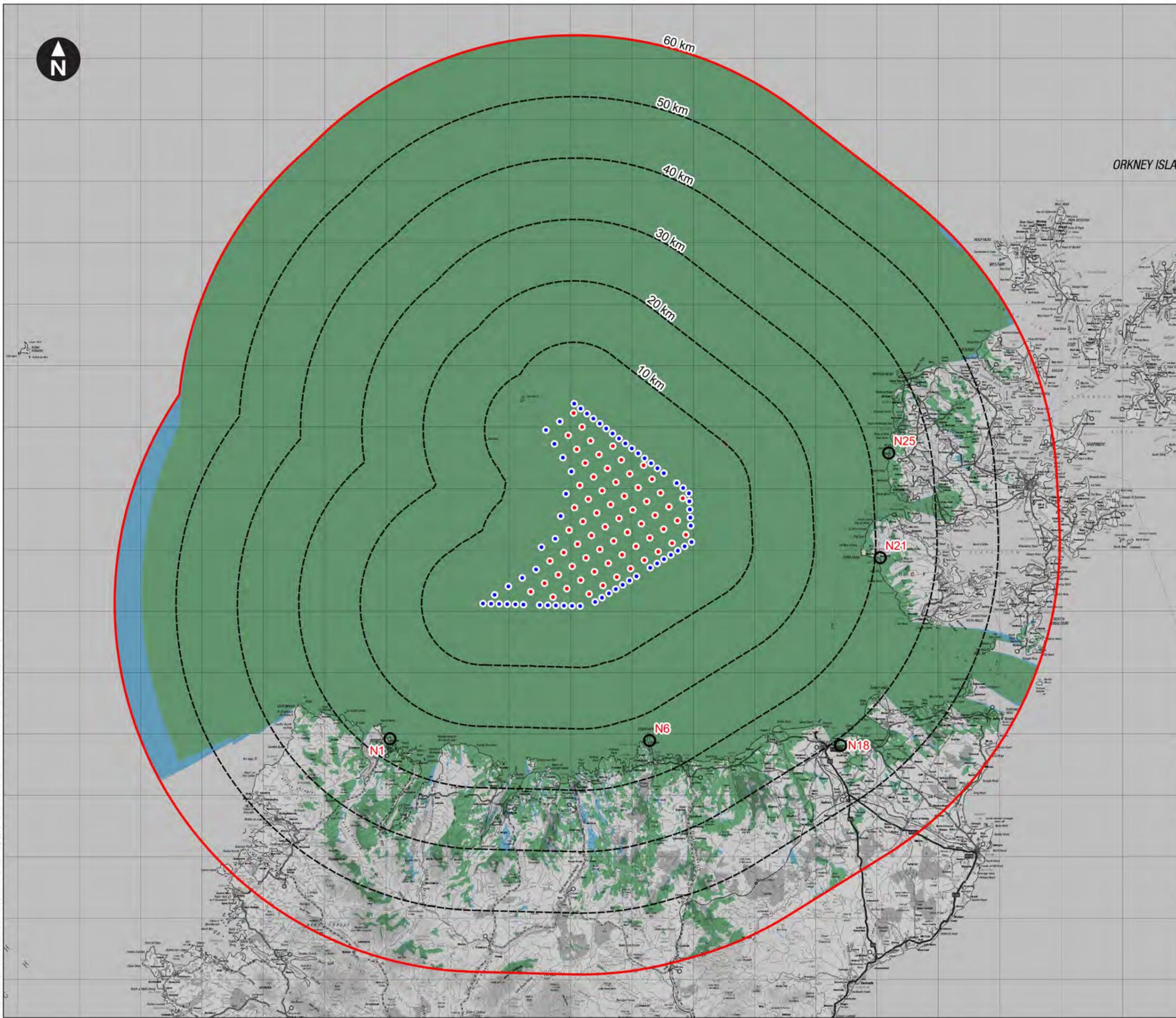
0 5 10 15 20 25 km
 Scale @ A3: 1:600,000
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Client



West of Orkney Offshore Wind Farm

Figure 18.7A
Zone of Theoretical Visibility (ZTV) to Nacelle Lights with Viewpoint Locations (60km)



Key

- Proposed Lit Turbine Locations - CAP393
- Proposed Lit Turbine Locations - CAP437 / SAR
- Landscape and Visual Study Area
- Lines indicating the distance from the proposed lit turbine locations
- Night-time viewpoint locations
- CAP393 nacelle lights may be theoretically visible
- Combined Visibility of CAP437 / SAR and CAP393 nacelle lights may be theoretically visible

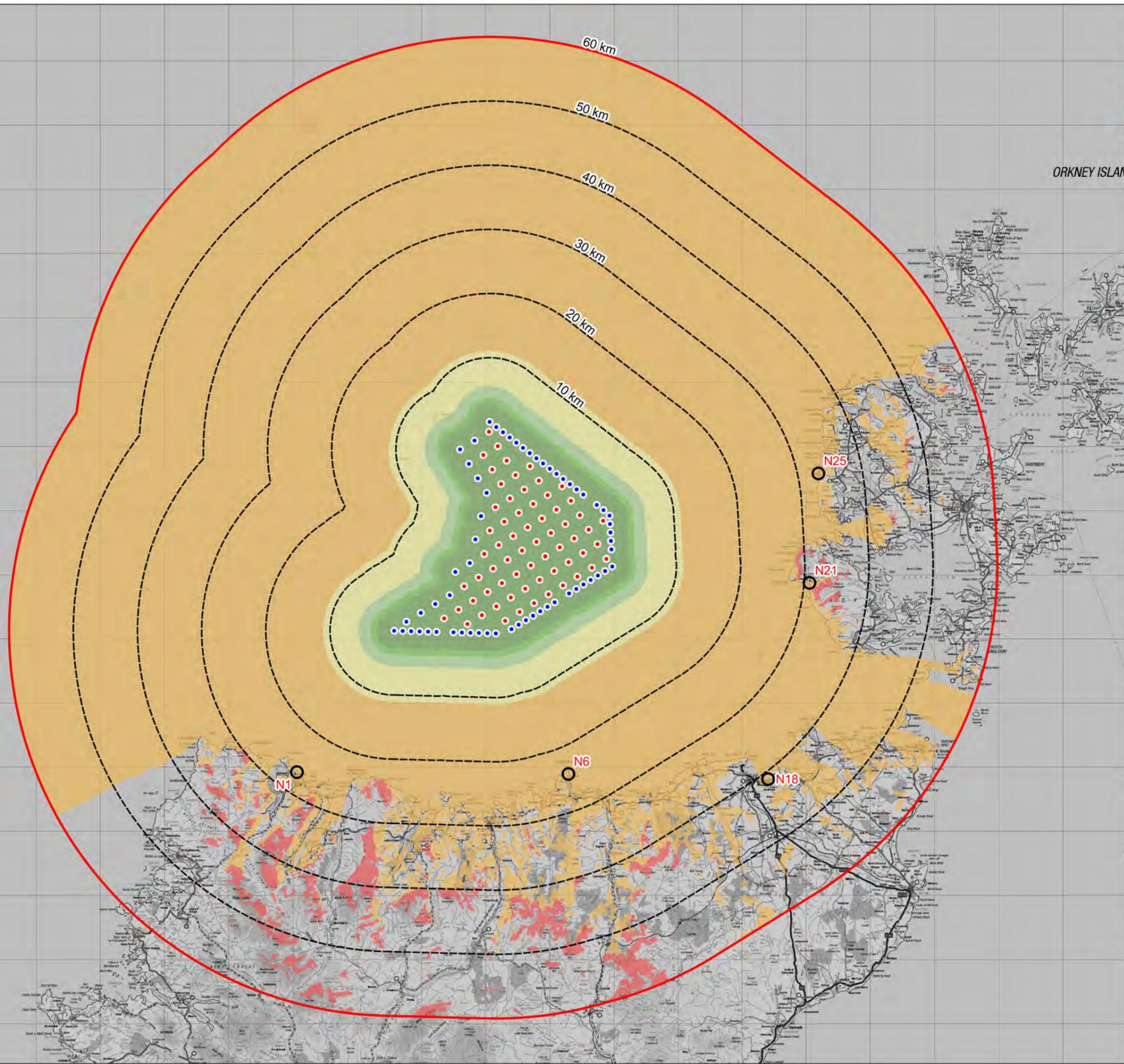
Notes: This drawing is based on a computer generated Zone of Theoretical Visibility (ZTV). The areas shown indicate the maximum theoretical visibility of the proposed turbines using OS Terrain 50 data only and do not take account of any screening from vegetation or built-form. The ZTV also includes an adjustment that allows for the Curvature and Light Refraction of the Earth. This figure has been based on the following parameters:
 Turbine layout file: LORKNEY001.WFL
 Hub height: 194.52m
 Rotor diameter: 330m
 Height to blade tip: 359.52m

0 5 10 15 20 25 km
 Scale @ A3: 1:600,000
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West of Orkney Offshore Wind Farm

Figure 18.7B
Nacelle Lights Night-time Viewpoints and ZTV (Zone of Theoretical Visibility) within 60km



Key

- Proposed Lit Turbine Locations - CAP393
- Proposed Lit Turbine Locations - CAP437 / SAR
- Landscape and Visual Study Area
- Lines indicating the distance from the proposed lit turbine locations
- Night-time viewpoint locations

Intensity of Turbine Light shown in Candelas (cd)

| Vertical Angle | Turbine Lighting Intensity | |
|----------------|----------------------------|----------------|
| | 2000cd light | 200cd light |
| +3° to 0° | 2000cd to 1500cd | 200cd to 150cd |
| 0° to -1° | 2000cd to 750cd | 200cd to 75cd |
| -1° to -2° | 800cd to 265cd | 80cd to 27cd |
| -2° to -3° | 265cd to 200cd | 27cd to 20cd |
| -3° to -4° | 200cd to 175cd | 20cd to 18cd |
| Below -4° | 175cd to 75cd | 18cd to 8cd |

Notes: This drawing is based on a computer generated Zone of Theoretical Visibility (ZTV). The areas shown indicate the maximum theoretical visibility of the proposed turbines using OS Terrain 50 data only and do not take account of any screening from vegetation or built-form. The ZTV also includes an adjustment that allows for the Curvature and Light Refraction of the Earth. This figure has been based on the following parameters:
 Turbine layout file: LORKNEY001.WFL
 Hub height: 194.52m
 Rotor diameter: 330m
 Height to blade tip: 359.52m

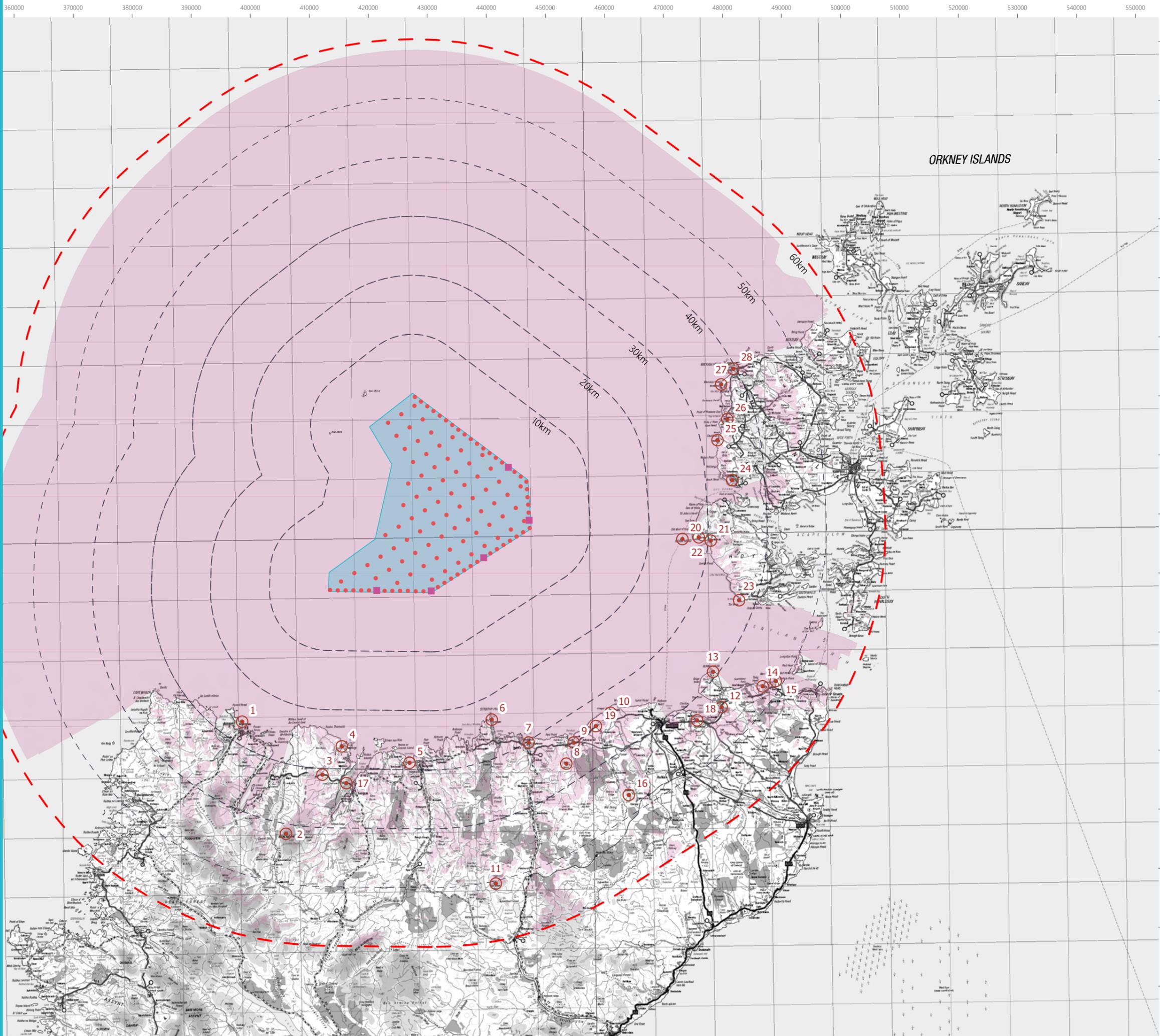
0 5 10 15 20 25 km
 Scale @ A3: 1:600,000
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West of Orkney Offshore Wind Farm

Figure 18.7C
Nacelle Light Intensity ZTV (Zone of Theoretical Visibility) within 60km



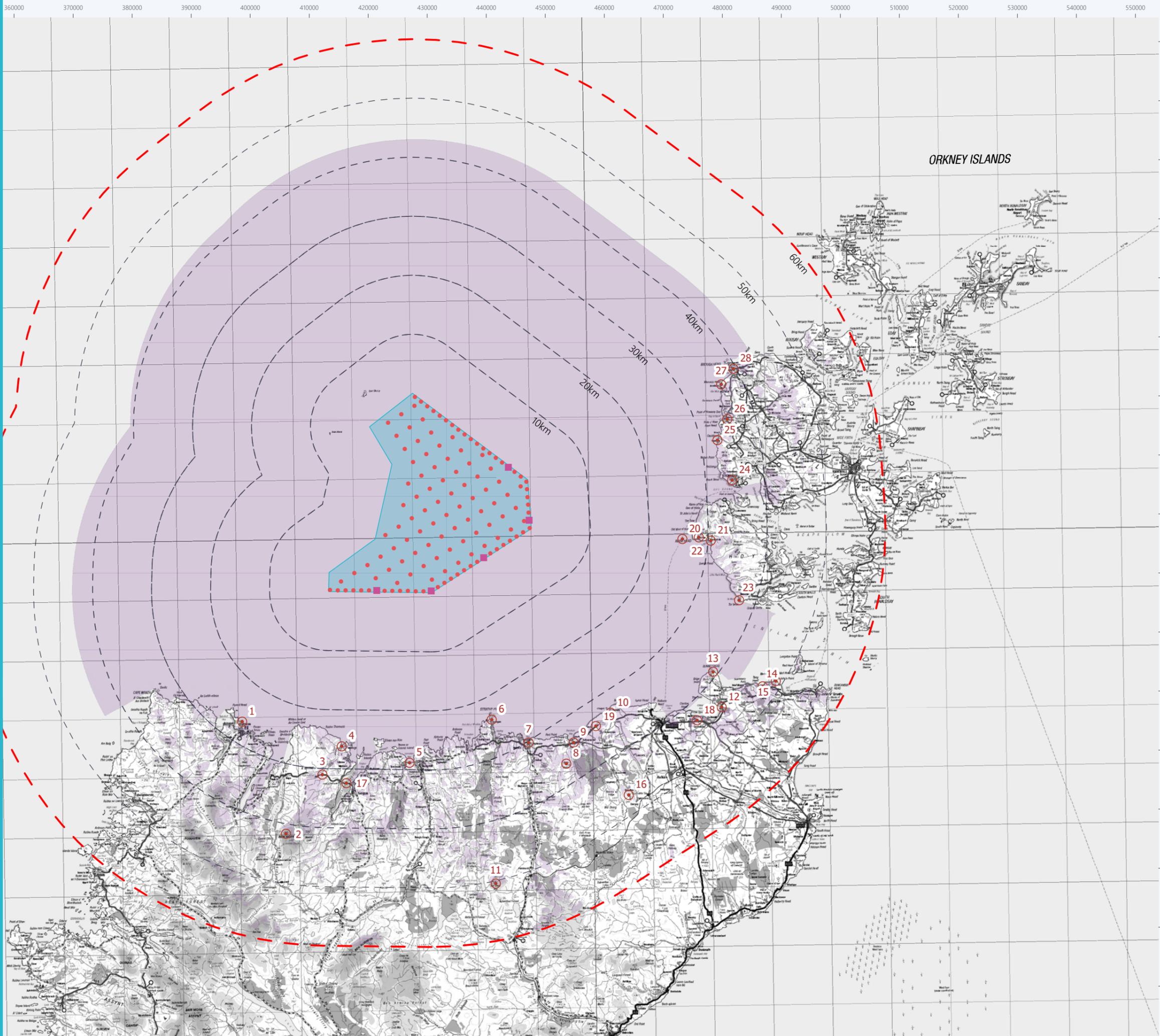


Note:
The ZTV is calculated to hub height (200m) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Hub Height ZTV

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. A838 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathly Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss / Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - A836 causeway | |
| 18. A836 Between Thurso and Castletown | |
| 19. A836 Dounreay | |

- Option Agreement Area
- 60km Study Area
- Turbines
- Substations
- Zone of Theoretical Visibility**
- Hub Height ZTV (theoretical visibility of anything up to and including hub height)
- North Coast and Orkney Viewpoints

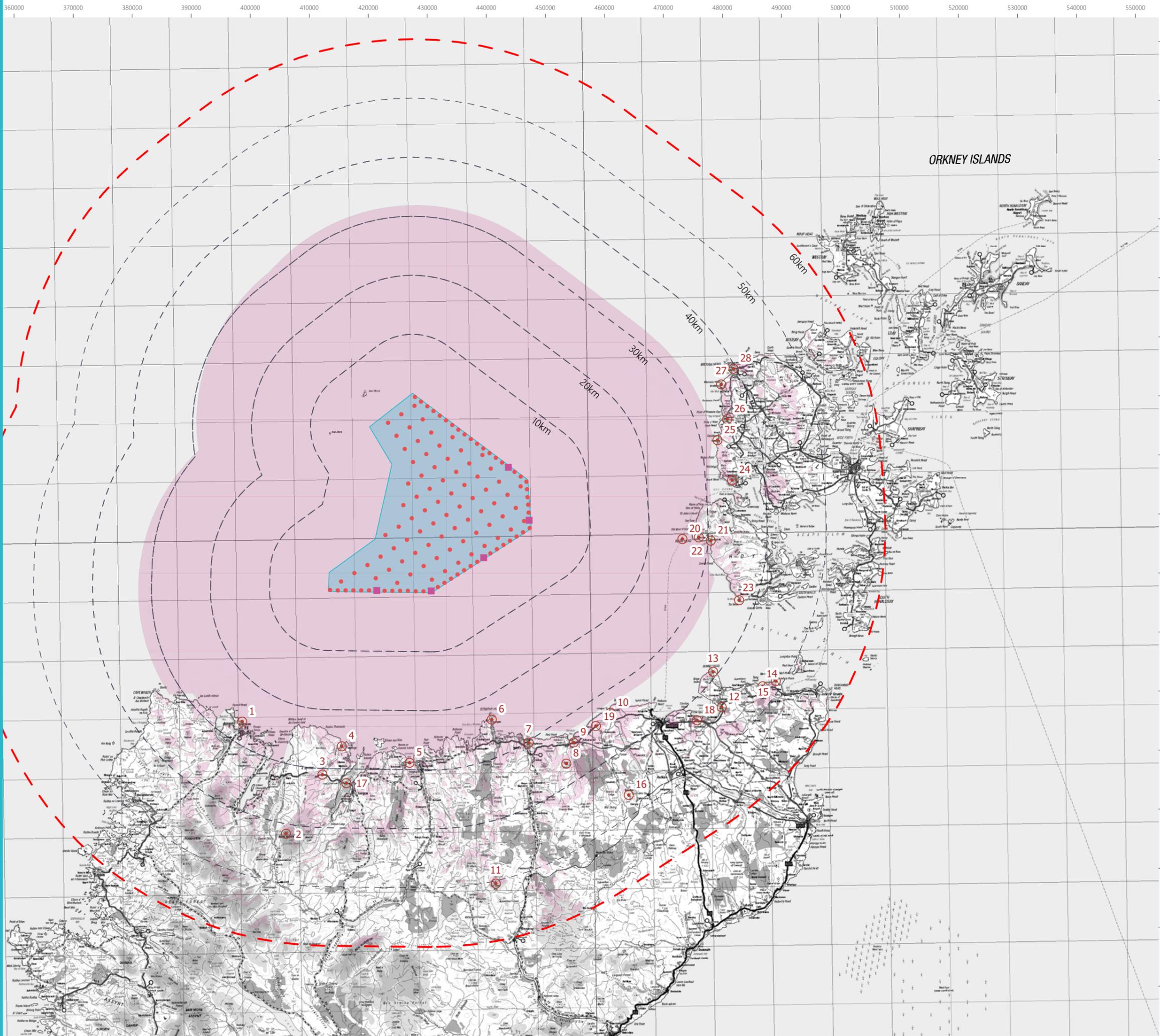


Note:
The ZTV is calculated to half hub height (100m) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Half Hub Height ZTV

- | | |
|--|---|
| North Coast Viewpoints | Orkney Viewpoints |
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. A838 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathly Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss/Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | Viewpoints for Wirelines Only |
| 12. Dunnet Bay | A. Borge Castle |
| 13. Dunnet Head | B. Cnoc Freiceadain long cairns |
| 14. Castle of Mey LB & GDLD | C. Sneuk Head |
| 15. St John's Point | D. Black Craig |
| 16. Beinn Freiceadain hillfort | E. Brough of Birsay Car Park |
| 17. Kyle of Tongue - A838 causeway | F. Knowes of Trotty / WHS West Mainland Sensitive Area |
| 18. A836 Between Thurso and Castletown | G. Skara Brae - at east side of the settlement |
| 19. A836 Dounreay | H. Skara Brae - At gate on north side of visitor centre |
| | I. Hall of Clestrain - top of access track |

- Option Agreement Area
- 60km Study Area
- Turbines
- Substations
- Zone of Theoretical Visibility**
- Half Hub Height ZTV (theoretical visibility of anything up to and including half hub)
- North Coast and Orkney Viewpoints

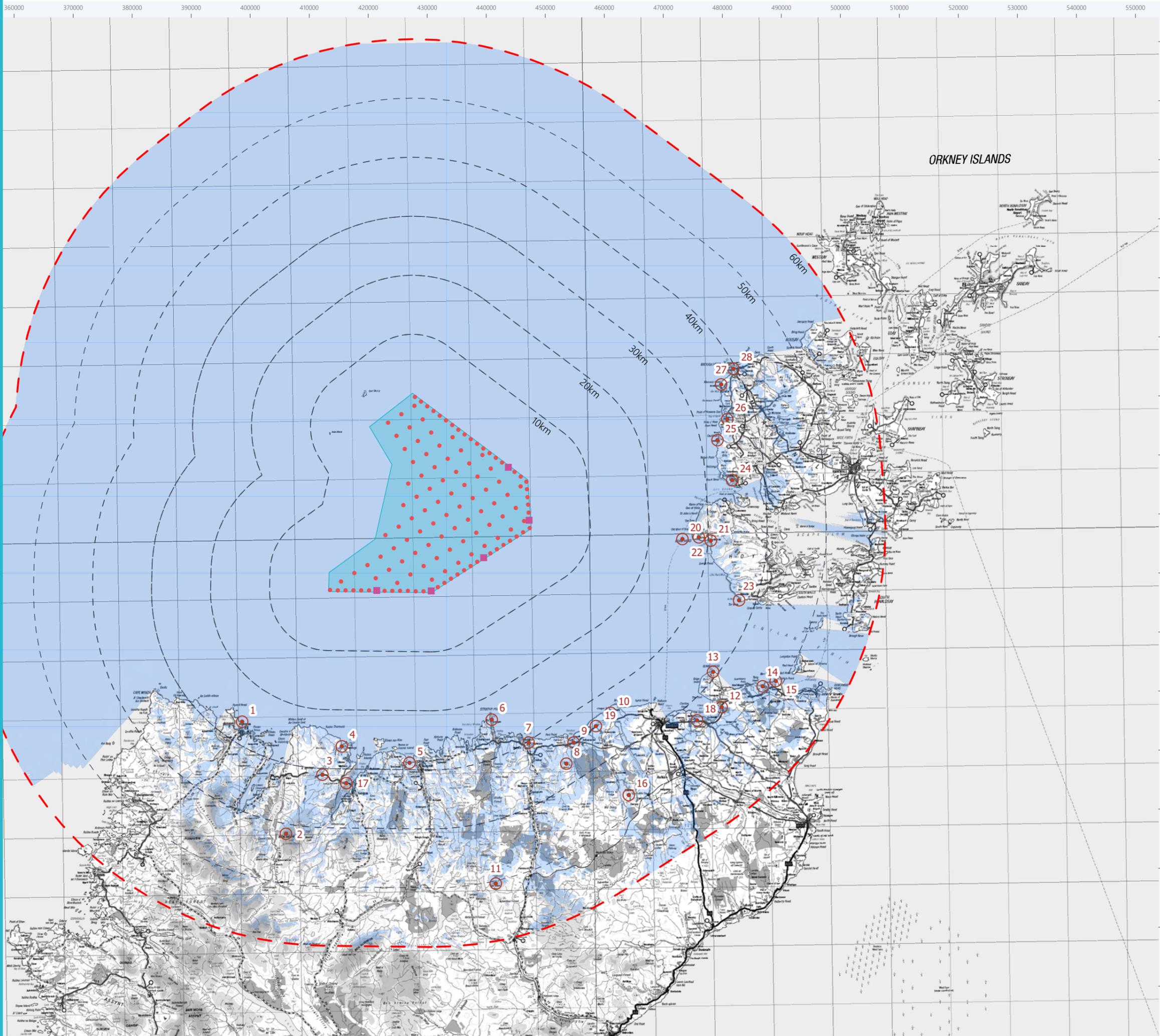


Note:
The ZTV is calculated to quarter hub height (50m) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Quarter Hub ZTV

- | | |
|--|---|
| North Coast Viewpoints | Orkney Viewpoints |
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. A838 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achinivier beach | 23. Tor Ness, Hoy |
| 5. Strathly Bay | 24. Warebeth |
| 6. Strathly Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Giam Beg hillfort | Viewpoints for Wirelines Only |
| 12. Dunnet Bay | A. Borge Castle |
| 13. Dunnet Head | B. Cnoc Freiceadain long cairns |
| 14. Castle of Mey LB & GD | C. Sneuk Head |
| 15. St John's Point | D. Black Craig - |
| 16. Beinn Freiceadain hillfort | E. Brough of Birsay Car Park |
| 17. Kyle of Tongue - A838 causeway | F. Knowes of Trotty / WHS West Mainland Sensitive Area |
| 18. A836 Between Thurso and Castletown | G. Skara Brae - at east side of the settlement |
| 19. A836 Dounreay | H. Skara Brae - At gate on north side of visitor centre |
| | I. Hall of Clestrain - top of access track |

- Option Agreement Area
 - 60km Study Area
 - Turbines
 - Substations
- Zone of Theoretical Visibility**
- Quarter Hub Height ZTV (theoretical visibility of anything up to and including quarter hub height)
 - North Coast and Orkney Viewpoints

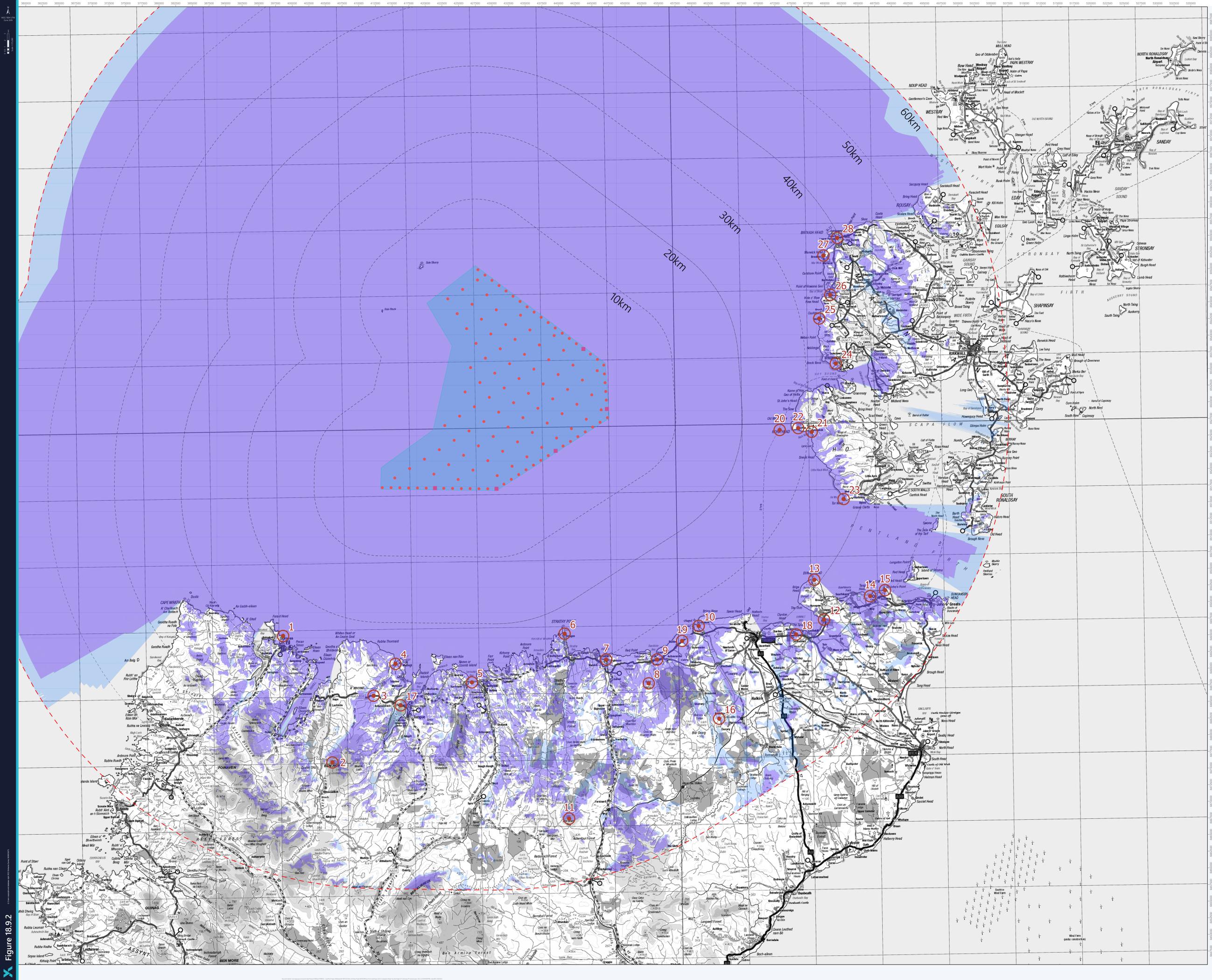


Note:
The ZTV is calculated to blade tip height (359.52m) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Blade Tip ZTV

- | | |
|--|---|
| North Coast Viewpoints | Orkney Viewpoints |
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. A838 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achinivver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathly Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Foss/Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | Viewpoints for Wirelines Only |
| 12. Dunnet Bay | A. Borge Castle |
| 13. Dunnet Head | B. Cnoc Freiceadain long cairns |
| 14. Castle of Mey LB & GDL | C. Sneuk Head |
| 15. St John's Point | D. Black Craig |
| 16. Beinn Freiceadain hillfort | E. Brough of Birsay Car Park |
| 17. Kyle of Tongue - A838 causeway | F. Knowes of Trotty / WHS West Mainland Sensitive Area |
| 18. A836 Between Thurso and Castletown | G. Skara Brae - at the east side of the settlement |
| 19. A836 Dounreay | H. Skara Brae - At gate on north side of visitor centre |
| | I. Hall of Clestrain - top of access track |

- Option Agreement Area
- 60km Study Area
- Turbines
- Substations
- Zone of Theoretical Visibility**
- Blade Tip ZTV (theoretical visibility of blades when above hub height)
- North Coast and Orkney Viewpoints



Note:
 The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.

Comparative ZTV

North Coast Viewpoints

1. North of Durness - Seanachaisleal
2. Ben Hope
3. A838 A'Moine peninsula
4. Kyle of Tongue - Achinivver beach
5. Torrindale Bay
6. Strathly Point
7. Melvich Bay/Big House LB
8. Beinn Ratha
9. Reay Kirk LB
10. Forest of Crosskirik/St Mary's Chapel
11. Ben Griam Beg hillfort
12. Dunnet Bay
13. Dunnet Head
14. Castle of Mey LB & GDL
15. St John's Point
16. Beinn Freiceadain hillfort
17. Kyle of Tongue - A838 causeway
18. A836 Between Thurso and Castletown
19. A836 Douneay

Orkney Viewpoints

20. Scrabster-Stormness Ferry
21. Rackwick Bay
22. Path to Old Man of Hoy
23. Tor Ness, Hoy
24. Warebeth
25. Yesnaby - Brough of Bigging
26. Bay of Saill
27. Marwick Head Kitchener Memorial
28. Earl's Palace Birsay, Brough Road

Option Agreement Area
 [Blue shaded area]

60km Study Area
 [Red dashed line]

North Coast and Orkney Viewpoints
 [Numbered red circles]

Substations
 [Pink squares]

Turbines
 [Red dots]

Zone of Theoretical Visibility

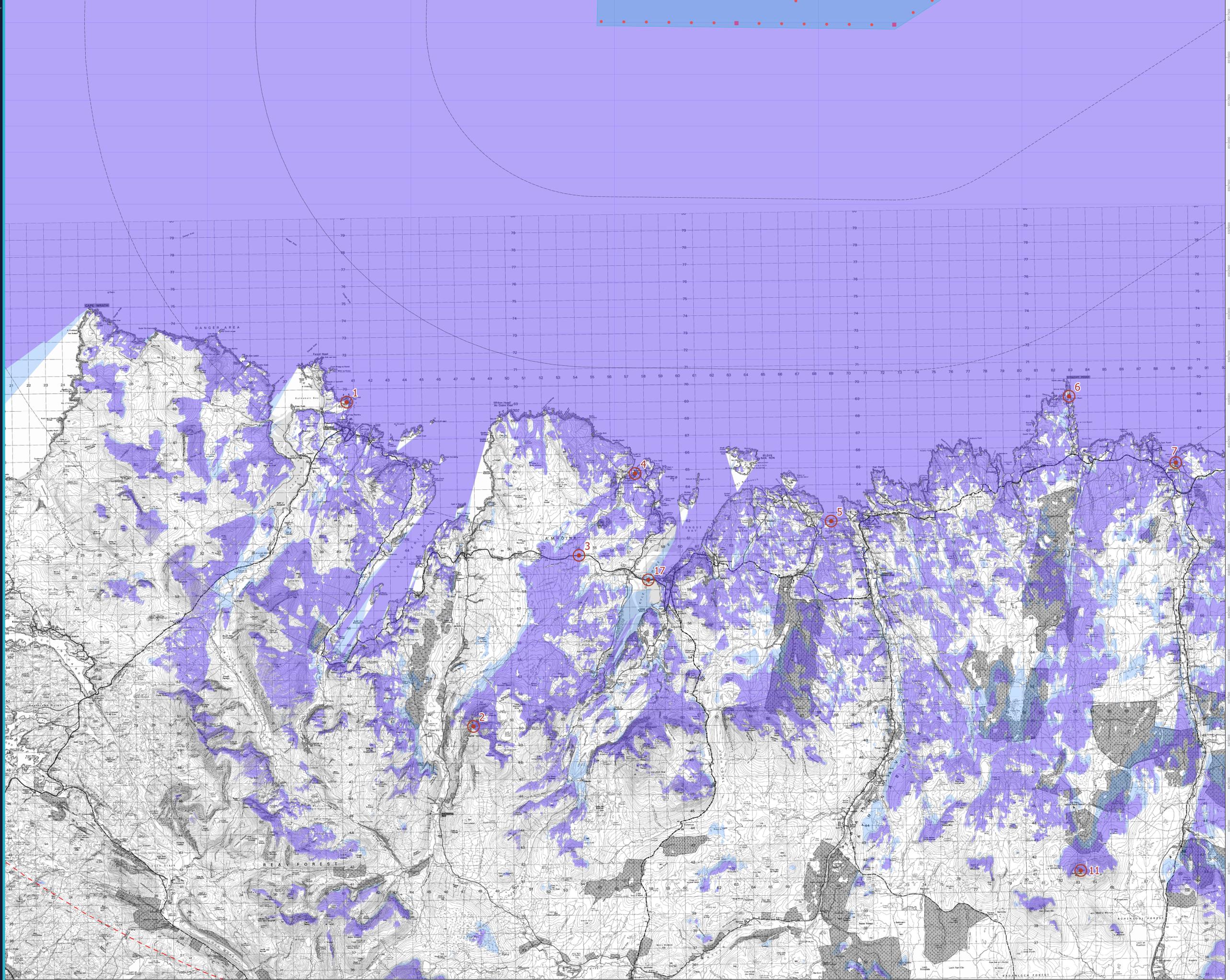
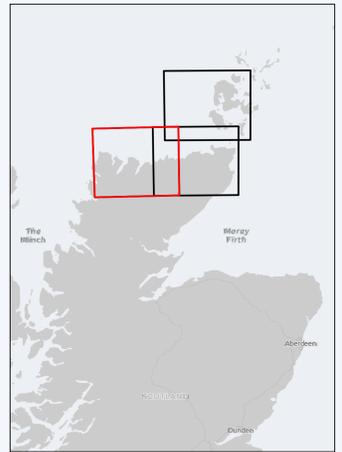
- [Light blue circle] Blade Tip ZTV (theoretical visibility of blades when above hub height)
- [Dark blue circle] Hub Height ZTV (theoretical visibility of anything above or including the hub)

Figure 18.9.2

Note:
The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.



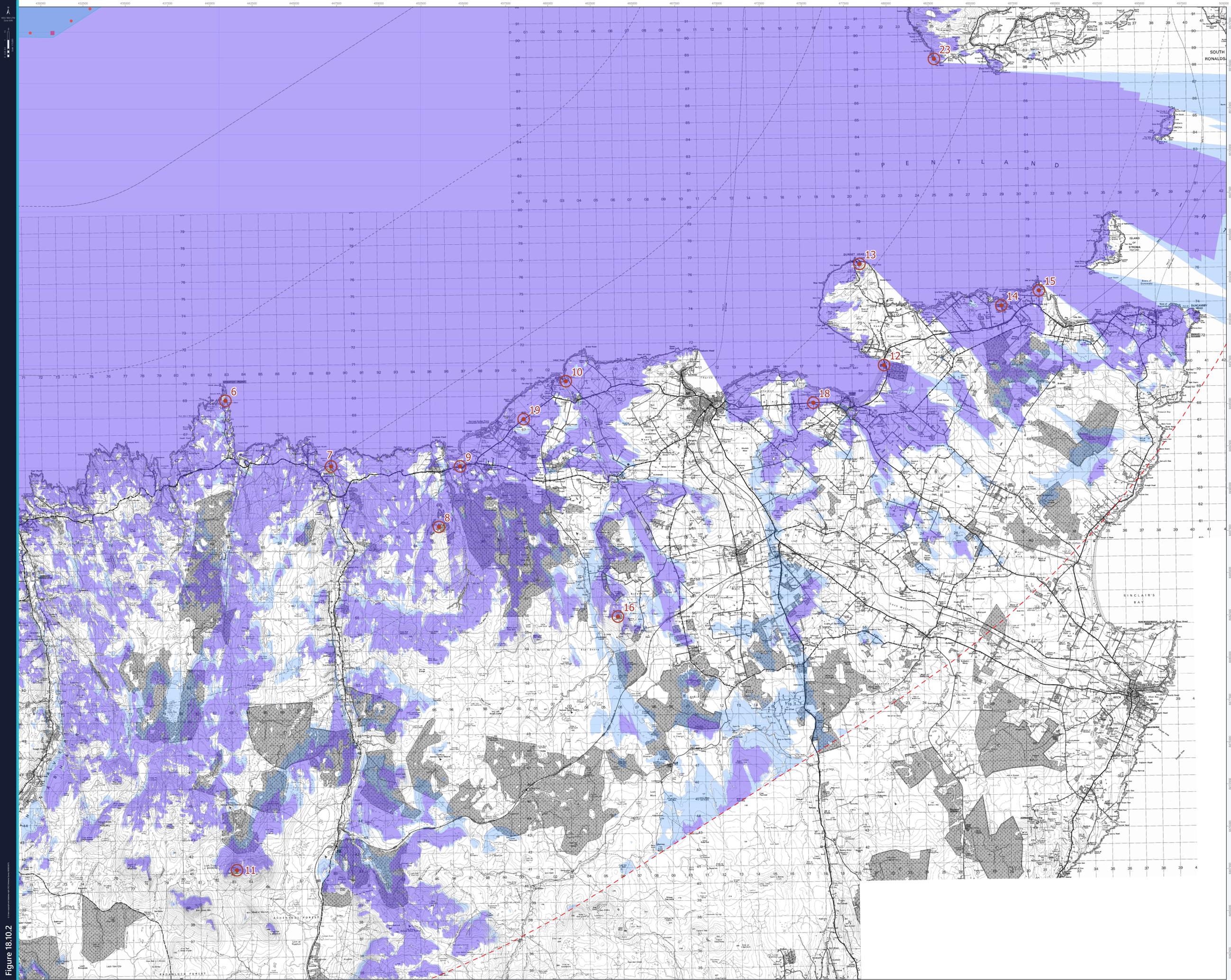
Comparative ZTV - Sheet 1 of 3

North Coast Viewpoints

1. North of Durness - Seanachaisteal
2. Ben Hope
3. A838 A'Noine peninsula
4. Kyle of Tongue - Achinivier beach
5. Torrisdale Bay
6. Strathly Point
7. Melich Bay/Big House LB
8. Beinn Ratha
9. Reay Kirk LB
10. Fors /Crosskir/St Mary's Chapel
11. Ben Gram Beg hillfort
12. Dunnet Bay
13. Dunnet Head
14. Castle of May LB & GD.
15. St John's Point
16. Beinn Freiceadain hillfort
17. Kyle of Tongue - A838 causeway
18. A836 Between Thurso and Castletown
19. A836 Dounreay

- Option Agreement Area
- 60km Study Area
- North Coast and Orkney Viewpoints
- Substations
- Turbines

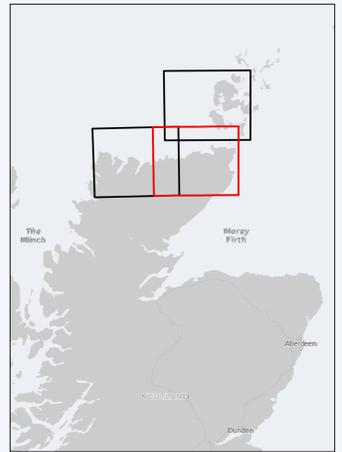
- Zone of Theoretical Visibility
- Blade Tip ZTV (theoretical visibility of blades when above hub height)
 - Hub Height ZTV (theoretical visibility of anything above or including the hub)



Note:
 The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.



Comparative ZTV - Sheet 2 of 3

North Coast Viewpoints

1. North of Durness - Seanachaisteal
2. Ben Hope
3. A838 A'Noine peninsula
4. Kyle of Tongue - Achinivier beach
5. Torrisdale Bay
6. Strathly Point
7. Melnich Bay/Big House LB
8. Beinn Ratha
9. Reay Kirk LB
10. Fors /Crosskir/St Mary's Chapel
11. Ben Gram Beg hillfort
12. Dunnet Bay
13. Dunnet Head
14. Castle of May LB & GDL
15. St John's Point
16. Beinn Freiceadain hillfort
17. Kyle of Tongue - A838 causeway
18. A836 Between Thurso and Castletown
19. A836 Dounreay

Orkney Viewpoints

20. Scabster- Stromness Ferry
21. Rackwick Bay
22. Path to Old Man of Hoy
23. Tor Ness, Hoy
24. Waverbeth
25. Yesnaby - Brough of Bigging
26. Bay of Skall
27. Marwick Head Kitchener Memorial
28. Earl's Palace Birsay, Brough Road

Option Agreement Area

60km Study Area

North Coast and Orkney Viewpoints

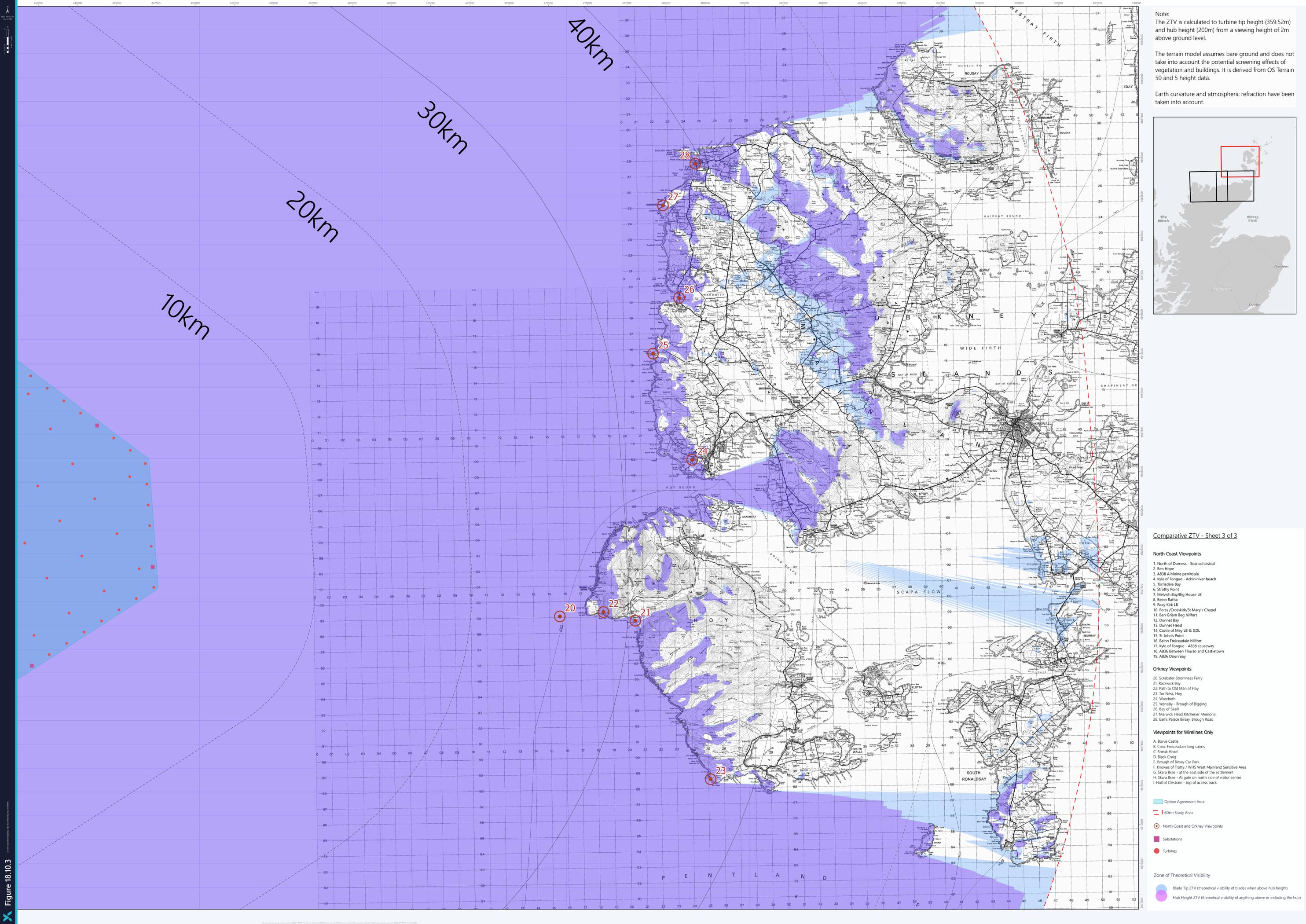
Substations

Turbines

Zone of Theoretical Visibility

- Blade Tip ZTV (theoretical visibility of blades when above hub height)
- Hub Height ZTV (theoretical visibility of anything above or including the hub)

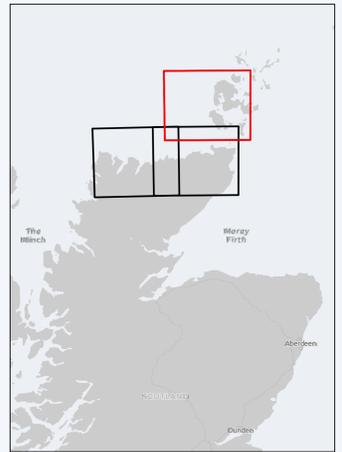
Figure 18.10.2



Note:
 The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.



Comparative ZTV - Sheet 3 of 3

North Coast Viewpoints

1. North of Durness - Seanachaisteal
2. Ben Hope
3. A838 A'Noine peninsula
4. Kyle of Tongue - Achinivier beach
5. Torrisdale Bay
6. Strathly Point
7. Melnich Bay/Big House LB
8. Beinn Ratha
9. Reay Kirk LB
10. Fors /Crosskir/St Mary's Chapel
11. Ben Gram Beg hillfort
12. Dunnet Bay
13. Dunnet Head
14. Castle of May LB & GDJ
15. St John's Point
16. Beinn Freiceadain hillfort
17. Kyle of Tongue - A838 causeway
18. A836 Between Thurso and Castletown
19. A836 Dounreay

Orkney Viewpoints

20. Scrabster-Stromness Ferry
21. Rackwick Bay
22. Path to Old Man of Hoy
23. Tor Ness, Hoy
24. Waverburn
25. Yesnaby - Brough of Bigging
26. Bay of Skall
27. Marwick Head Kitchener Memorial
28. Earl's Palace Birsay, Brough Road

Viewpoints for Wirelines Only

- A. Borne Castle
- B. Croc Freiceadain long cairns
- C. Sneuk Head
- D. Black Croag
- E. Brough of Birsay Car Park
- F. Knowes of Trotty / WHS West Mainland Sensitive Area
- G. Skara Brae - at the east side of the settlement
- H. Skara Brae - At gate on north side of visitor centre
- I. Hall of Cestrain - top of access track

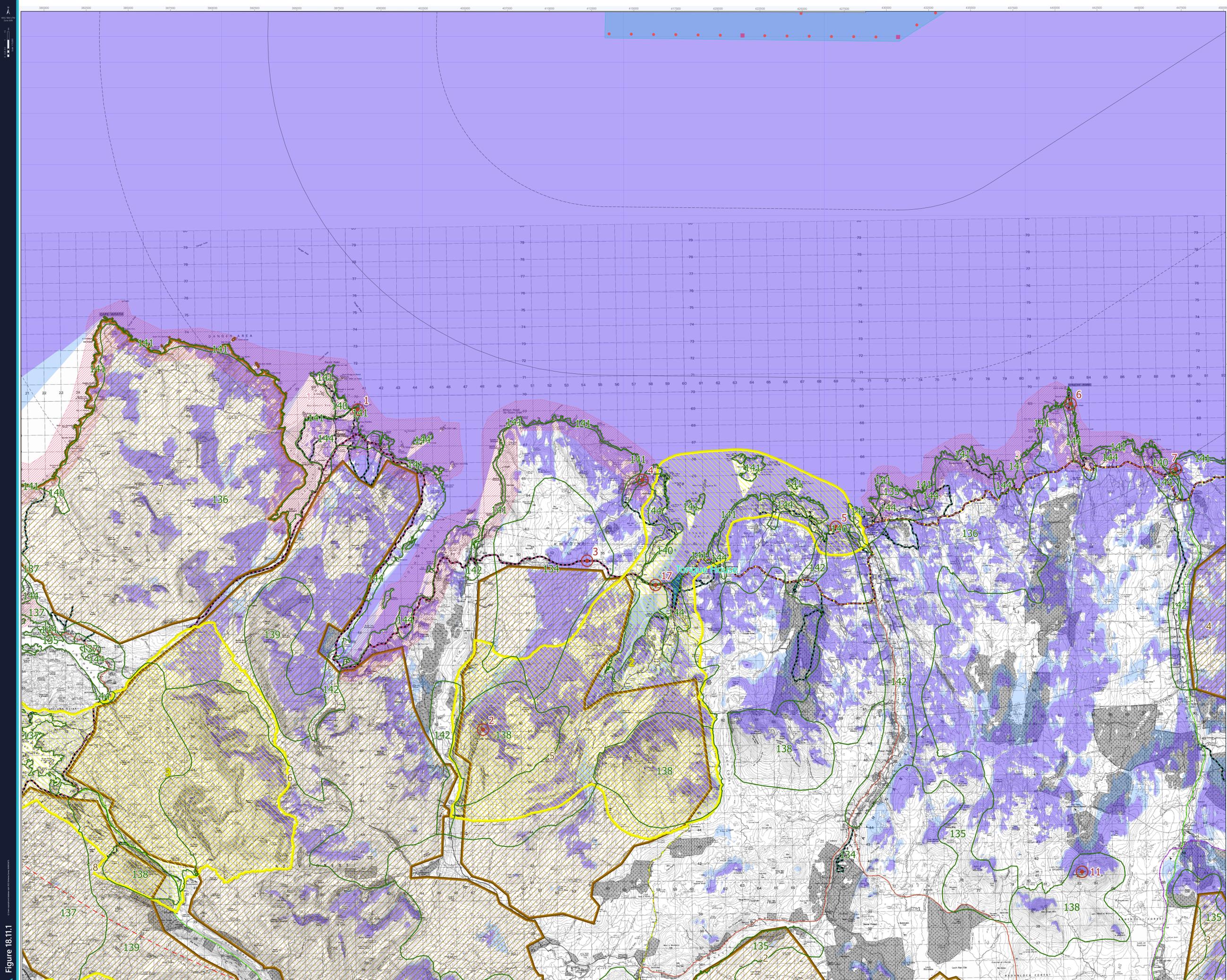
Legend

- Option Agreement Area
- 60km Study Area
- North Coast and Orkney Viewpoints
- Substations
- Turbines

Zone of Theoretical Visibility

- Blade Tip ZTV (theoretical visibility of blades when above hub height)
- Hub Height ZTV (theoretical visibility of anything above or including the hub)

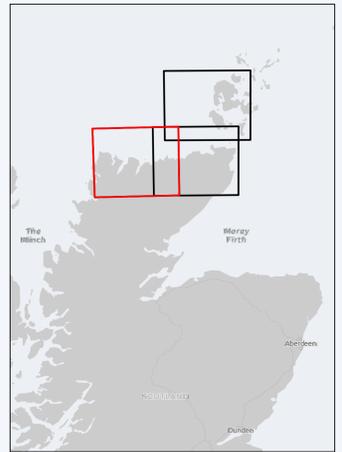
Figure 18.10.3



Note: The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.



ZTV with Landscape and Visual receptors Sheet 1 of 3

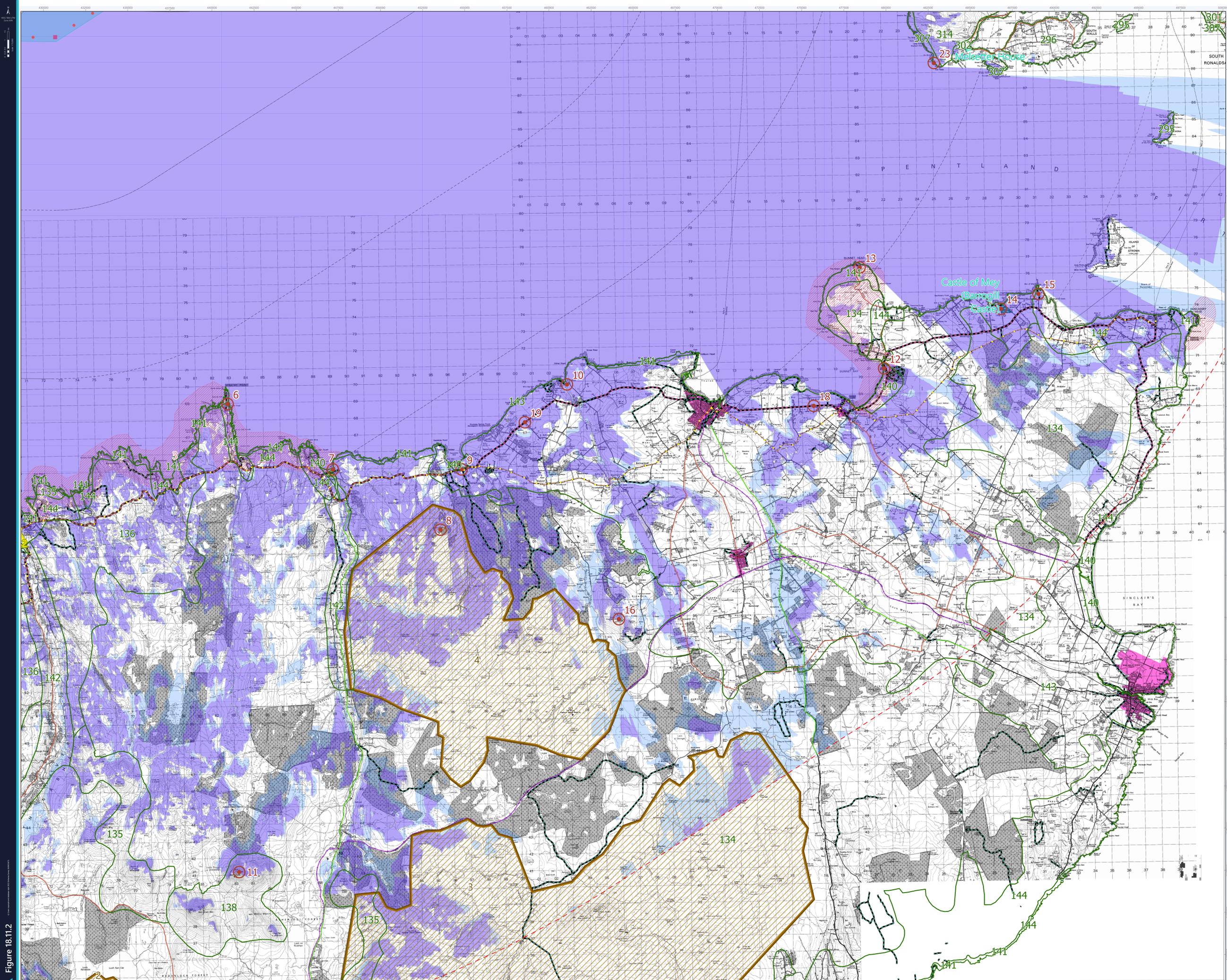
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| <p>North Coast Viewpoints</p> <ol style="list-style-type: none"> 1. North of Durness - Seanaichteal 2. Ben Hope 3. A838 A/Moine peninsula 4. Kyle of Tongue - Adhwinver beach 5. Torridale Bay 6. Strathly Point 7. Melich Bay/House LB 8. Benin Ratha 9. Ray Kirk LB 10. Ben Croisair/St Mary's Chapel 11. Ben Grian Beg hillfort 12. Dunnet Bay 13. Dunnet Head 14. Castle of Mey LB & GDL 15. St John's Point 16. Benin Freiceadan hillfort 17. Kyle of Tongue - A838 causeway 18. A836 Between Thurso and Castletown 19. A836 Downway | <p>Orkney Viewpoints</p> <ol style="list-style-type: none"> 20. Scaister Greenness Ferry 21. Rackwick Bay 22. Path to Old Man of Hoy 23. Tor Ness, Hoy 24. Wavereth 25. Yemathly - Brough of Bigging 26. Bay of Skall 27. Marwick Head Kitchener Memorial 28. Earth Palace Brough Brough Head <p>Viewpoints for Windlines Only</p> <ol style="list-style-type: none"> A. Bone Castle B. Croc Freiceadan long cairns C. Sneak Head D. Black Croc E. Brough of Brsay Car Park F. Knowes of Hoy / West West Mainland Sensitive Area G. Skara Brae - at gate on north side of the settlement H. Skara Brae - at gate on east side of visitor centre I. Hall of Crocanan - top of access track |
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- 60km Study Area
- Option Agreement Area
- North Coast and Orkney Viewpoints
- Substations
- Turbines

- Zone of Theoretical Visibility**
- Blade Tip ZTV (theoretical visibility of blades when above hub height)
 - Hub Height ZTV (theoretical visibility of anything above or including the hub)

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| <p>Heart of Neolithic</p> <ul style="list-style-type: none"> Orkney World Heritage Site Sensitive Area Heart of Neolithic Orkney World Heritage Site Buffer Zone Heart of Neolithic Orkney World Heritage Site Boundary | <p>Landscape Character Types</p> <ol style="list-style-type: none"> 134 Sweeping Moorland and Flows 135 Rounded Hills - Caithness & Sutherland 136 Rocky Hills and Moorland 137 Crocan - Caithness & Sutherland 138 Lone Mountains 139 Rugged Mountain Massif - Caithness & Sutherland 140 Sandy Beaches and Dunes 141 High Cliffs and Sheltered Bays 142 Strath - Caithness & Sutherland 143 Farned Lowland Plain 144 Coastal Crofts & Small Farms 295 Holms 296 Whaleback Islands 297 Ridgeline Islands 298 Low Island Pastures 299 Undulating Island Pasture 300 Coastal Plain - Orkney 301 Coastal Basin 302 Inclined Coastal Pasture 303 Rocky Coastal Pasture 304 Isolated Coastal Knolls 305 Enclosed Bays 306 Coastal Hills and Heath Flows 307 Cliffs - Orkney 308 Coast with Sand - Orkney 309 Peatland Basin 310 Loch Basin - Orkney 311 Low Moorland 312 Plateau Heath and Pasture 313 Rolling Hill Fringe 314 Moorland Hills - Orkney 315 U-Shaped Valley 316 Rugged Hills 334 Crocan - Ross & Cromarty 336 Coastal Moorlands and Crofts |
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- Landscape Designation**
- National Scenic Areas
 - Hoy and West Mainland
 - Kyle of Tongue
 - North - West Sutherland
 - Special Landscape Areas (The Highland Council)
- Wild Land Areas**
- 1. Hoy
 - 2. Ben Kilbreck - Armine Forest
 - 3. Causerymie - Knockin Flows
 - 4. East Halladale Flows
 - 5. Ben Hope - Ben Loyal
 - 6. Foinaven - Ben Hee
 - 7. Cape Wrath
 - 8. Rosy - Casley
- Garden and Designed Landscapes**
- Southern National Route
 - Railway
 - Core Paths
 - North Coast 500
 - Settlement
 - Primary Road, A Road
 - B Road

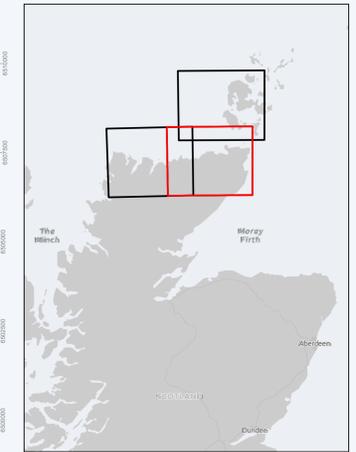
Figure 18.11.1



Note: The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.



ZTV with Landscape and Visual receptors Sheet 2 of 3

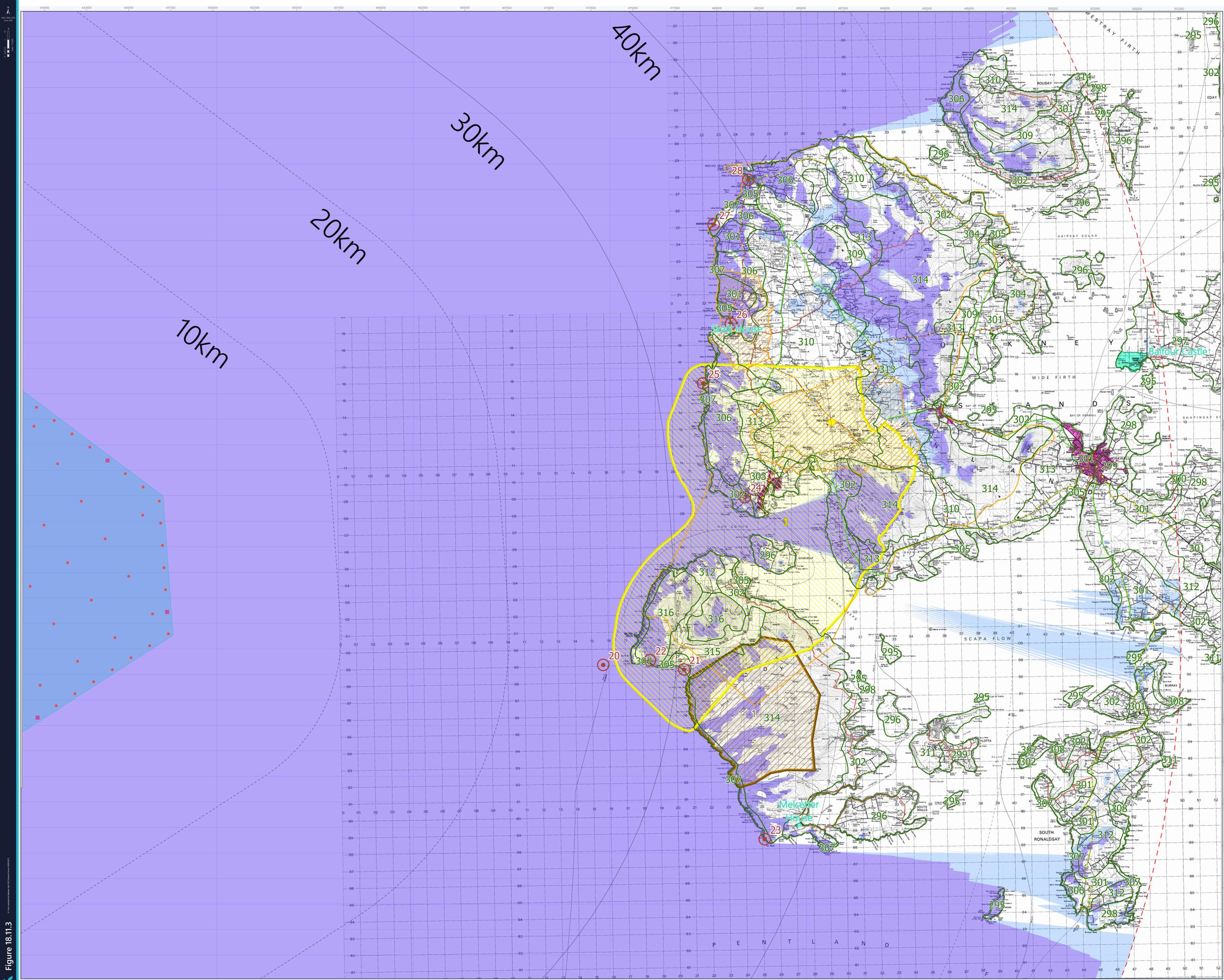
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| <p>North Coast Viewpoints</p> <ol style="list-style-type: none"> 1 North of Durness - Seanaichteal 2 Ben Hope 3 A838 A'Moine peninsula 4 Kyle of Tongue - Achnawsher beach 5 Torridale Bay 6 Strathly Point 7 Melich Bay/Hill House LB 8 Benin Ratha 9 Reyk Kix LB 10 Fone Croisik/St Mary's Chapel 11 Ben Grian Beg hillfort 12 Dunnet Bay 13 Dunnet Head 14 Castle of Mey LB & GDL 15 St John's Point 16 Benn Freiceadan hillfort 17 Kyle of Tongue - A838 causeway 18 A836 Between Thurso and Castletown 19 A836 Dunrobin | <p>Orkney Viewpoints</p> <ol style="list-style-type: none"> 20 Scauness Greenness Ferry 21 Rackwick Bay 22 Path to Old Man of Hoy 23 Tor Ness, Hoy 24 Wavereth 25 Yemaby - Brough of Bigging 26 Bay of Skall 27 Marwick Head Kitchen Memorial 28 Earth Palace Stone Brough Head <p>Viewpoints for Windlines Only</p> <ol style="list-style-type: none"> A Bone Castle B Croc Freiceadan long cairns C Sneak Head D Black Croc E Brough of Brisay Car Park F Knowes of Hoy - NW of West Mainland Sensitive Area G Skara Brae - at the east side of the settlement H Skara Brae - at gate on north side of visitor centre I Hall of Crocanan - top of access track |
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| <p>Legend</p> <ul style="list-style-type: none"> 60km Study Area Option Agreement Area North Coast and Orkney Viewpoints Substations Turbines | <p>Zone of Theoretical Visibility</p> <ul style="list-style-type: none"> Blade Tip ZTV (theoretical visibility of blades when above hub height) Hub Height ZTV (theoretical visibility of anything above or including the hub) |
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| <p>Heritage</p> <ul style="list-style-type: none"> Heart of Neolithic Orkney World Heritage Site Sensitive Area Heart of Neolithic Orkney World Heritage Site Buffer Zone Heart of Neolithic Orkney World Heritage Site Boundary | <p>Landscape Character Types</p> <ul style="list-style-type: none"> 134 Sweeping Moorland and Flows 135 Rounded Hills - Caithness & Sutherland 136 Rocky Hills and Moorland 137 Crocan - Caithness & Sutherland 138 Lone Mountains 139 Rugged Mountain Massif - Caithness & Sutherland 140 Sandy Beaches and Dunes 141 High Cliffs and Sheltered Bays 142 Strath - Caithness & Sutherland 143 Farned Lowland Plain 144 Coastal Crofts & Small Farms 295 Holms 296 Whaleback Islands 297 Ridgeline Islands 298 Low Island Pastures 299 Undulating Island Pasture 300 Coastal Plain - Orkney 301 Coastal Basin 302 Inclined Coastal Pasture 303 Rocky Coastal Pasture 304 Isolated Coastal Knolls 305 Enclosed Bays 306 Coastal Hills and Heath Flows 307 Cliffs - Orkney 308 Coast with Sand - Orkney 309 Peatland Basin 310 Loch Basin - Orkney 311 Low Moorland 312 Plateau Heath and Pasture 313 Rolling Hill Fringe 314 Moorland Hills - Orkney 315 U-Shaped Valley 316 Rugged Hills 334 Crocan - Ross & Cromarty 336 Coastal Moorlands and Crofts |
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| <p>Landscape Designation</p> <ul style="list-style-type: none"> National Scenic Areas 1 Hoy and West Mainland 2 Kyle of Tongue 3 North - West Sutherland <p>Special Landscape Areas (The Highland Council)</p> <ul style="list-style-type: none"> 1 Oldshoremore, Cape Wrath and Durness 2 Erboll East and Whiten Head 3 Far Bay, Strathly and Portskerra 4 Dunnet Head 5 Duncansby Head <p>Wild Land Areas</p> <ul style="list-style-type: none"> 1 Hoy 2 Ben Kilbreck - Armine Forest 3 Causymire - Knockin Flows 4 East Halladale Flows 5 Ben Hope - Ben Loyal 6 Foinaven - Ben Hee 7 Cape Wrath 8 Rey - Casley <p>Garden and Designed Landscapes</p> <ul style="list-style-type: none"> Sustrans National Route Railway Core Paths North Coast 500 Settlement Primary Road; A Road B Road | <p>Other Designations</p> <ul style="list-style-type: none"> Option Agreement Area Substations Turbines |
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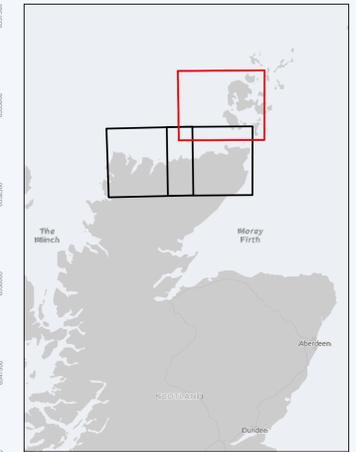
Figure 18.11.2



Note: The ZTV is calculated to turbine tip height (359.52m) and hub height (200m) from a viewing height of 2m above ground level.

The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.

Earth curvature and atmospheric refraction have been taken into account.



ZTV with Landscape and Visual receptors Sheet 3 of 3

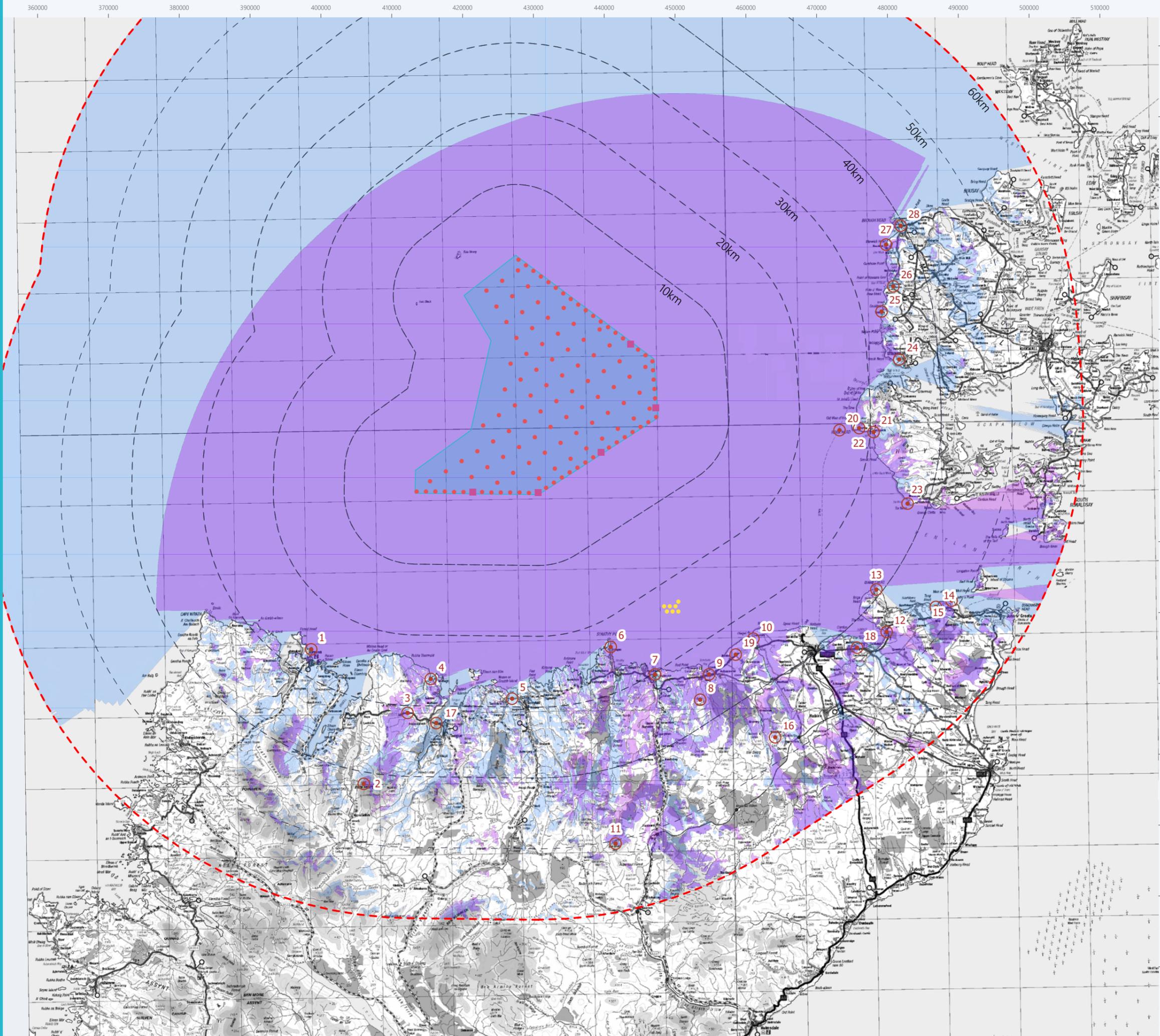
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| <p>North Coast Viewpoints</p> <ol style="list-style-type: none"> 1. North of Duness - Seanaichteal 2. Ben Hope 3. A836 A'Moine peninsula 4. Kyle of Tongue - Aithwisher beach 5. Torridale Bay 6. Strathly Point 7. Melich Bay/Big House LB 8. Beinn Ratha 9. Ray Kirk LB 10. Fony Cross/Str Mary's Chapel 11. Ben Grian Beg hillfort 12. Dunnet Bay 13. Dunnet Head 14. Castle of Mey LB & GD 15. St John's Point 16. Beinn Freiceadan hillfort 17. Kyle of Tongue - A836 causeway 18. A836 Between Thurso and Caithness 19. A836 Downway | <p>Orkney Viewpoints</p> <ol style="list-style-type: none"> 20. Scaillaber-Grinness Ferry 21. Rackwick Bay 22. Path to Old Man of Hoy 23. Tor Ness, Hoy 24. Warebeth 25. Yemaby - Brough of Bigging 26. Bay of Scall 27. Marwick Head Kitchener Memorial 28. Earl's Palace Strony Brough Road <p>Viewpoints for Windlines Only</p> <ol style="list-style-type: none"> A. Bone Castle B. Croc Freiceadan long cairns C. Sneak Head D. Black Croc E. Brough of Birsay Car Park F. Knowes of Hoy/ West Mainland Sensitive Area G. Skara Brae - at the east side of the settlement H. Skara Brae - at gate on north side of visitor centre I. Hall of Crocan - top of access track |
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| <p>60km Study Area</p> <p>Option Agreement Area</p> <p>North Coast and Orkney Viewpoints</p> <p>Substations</p> <p>Turbines</p> | <p>Zone of Theoretical Visibility</p> <p>Blade Tip ZTV (theoretical visibility of blades when above hub height)</p> <p>Hub Height ZTV (theoretical visibility of anything above or including the hub)</p> |
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| <p>Heart of Neolithic</p> <p>Orkney World Heritage Site Sensitive Area</p> <p>Heart of Neolithic Site Buffer Zone</p> <p>Orkney World Heritage Site Boundary</p> | <p>Landscape Character Types</p> <ol style="list-style-type: none"> 134 Sweeping Moorland and Flows 135 Rounded Hills - Caithness & Sutherland 136 Rocky Hills and Moorland 137 Crocan - Caithness & Sutherland 138 Lone Mountains 139 Rugged Mountain Massif - Caithness & Sutherland 140 Sandy Beaches and Dunes 141 High Cliffs and Sheltered Bays 142 Strath - Caithness & Sutherland 143 Farmed Lowland Plain 144 Coastal Crofts & Small Farms 295 Holms 296 Whaleback Islands 297 Ridgeline Islands 298 Low Island Pastures 299 Undulating Island Pasture 300 Coastal Plain - Orkney 301 Coastal Basin 302 Inclined Coastal Pasture 303 Rocky Coastal Pasture 304 Isolated Coastal Knolls 305 Enclosed Bays 306 Coastal Hills and Heath Flows 307 Cliffs - Orkney 308 Coast with Sand - Orkney 309 Peatland Basin 310 Loch Basin - Orkney 311 Low Moorland 312 Plateau Heath and Pasture 313 Rolling Hill Fringe 314 Moorland Hills - Orkney 315 U-Shaped Valley 316 Rugged Hills 334 Crocan - Ross & Cromarty 336 Coastal Moorlands and Crofts |
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| <p>Landscape Designation</p> <p>National Scenic Areas</p> <ol style="list-style-type: none"> 1. Hoy and West Mainland 2. Kyle of Tongue 3. North - West Sutherland <p>Special Landscape Areas (The Highland Council)</p> <ol style="list-style-type: none"> 1. Oldshoremore, Cape Wrath and Duness 2. Erriboll East and Whiten Head 3. Far Bay, Strathly and Portskerra 4. Dunnet Head 5. Duncansby Head <p>Wild Land Areas</p> <ol style="list-style-type: none"> 1. Hoy 2. Ben Kilbreck - Armine Forest 3. Causymire - Knockfin Flows 4. East Halladale Flows 5. Ben Hope - Ben Loyal 6. Foinaven - Ben Hee 7. Cape Wrath 8. Reay - Casley | <p>Garden and Designed Landscapes</p> <p>Sustrans National Route</p> <p>Railway</p> <p>Core Paths</p> <p>North Coast 500</p> <p>Settlement</p> <p>Primary Road, A Road</p> <p>B Road</p> |
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Figure 18.11.3

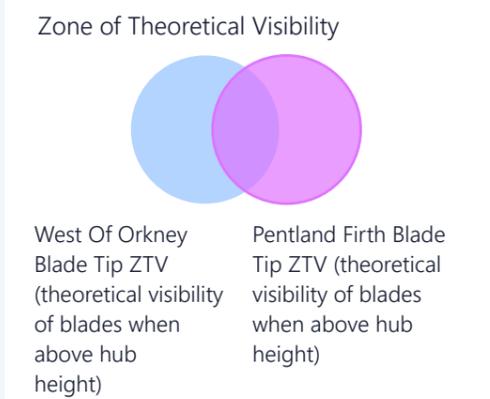


Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 300m Pentland) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

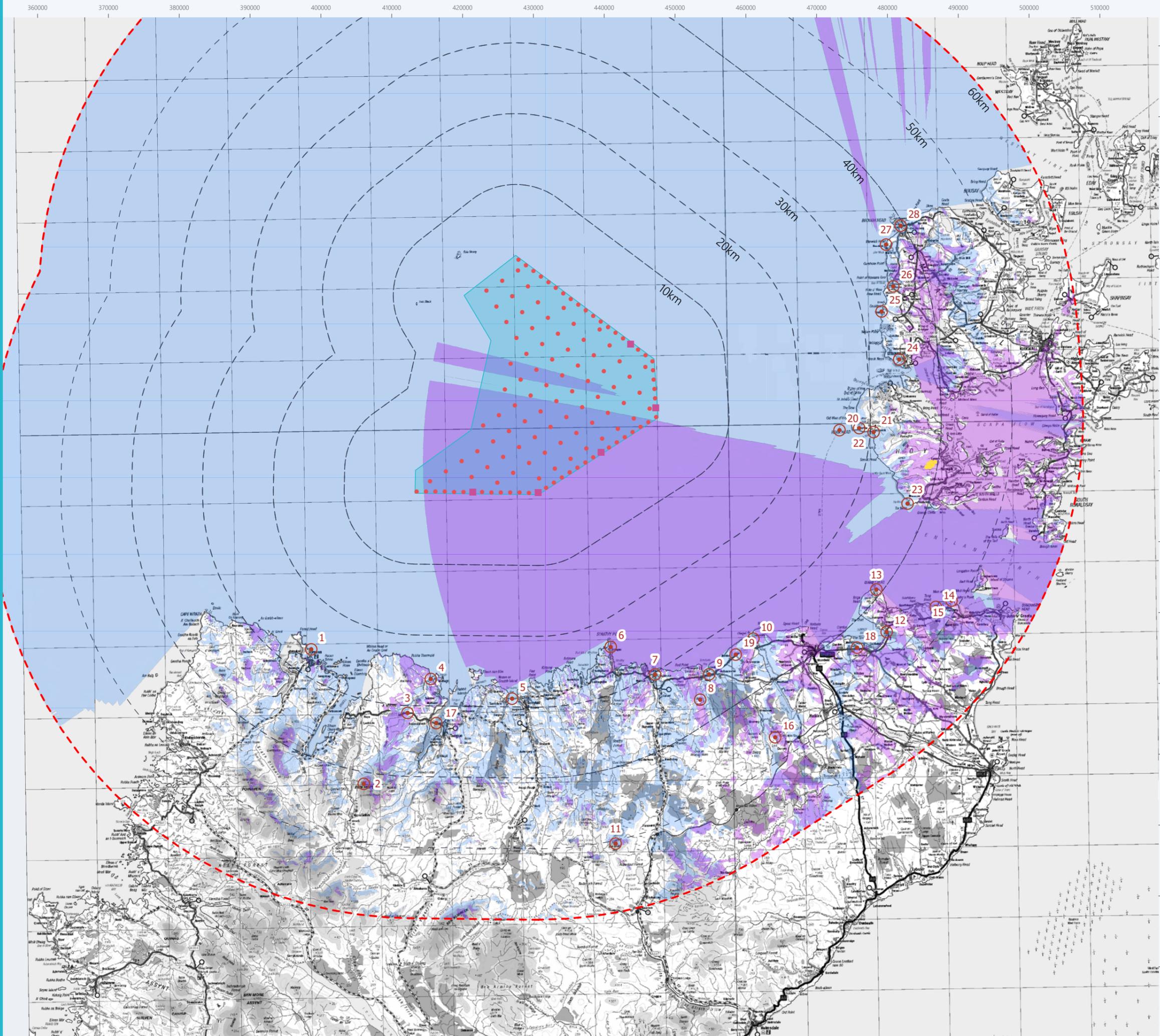
Cumulative ZTV with Pentland Firth Offshore

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Pentland Firth Offshore Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



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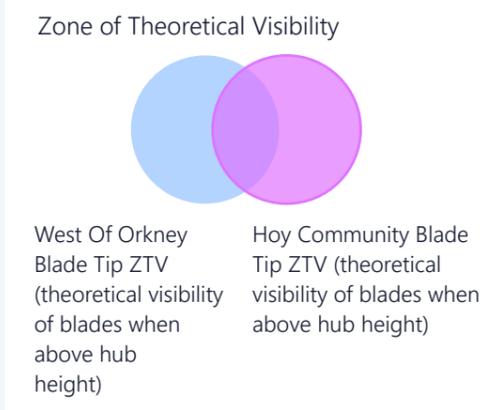


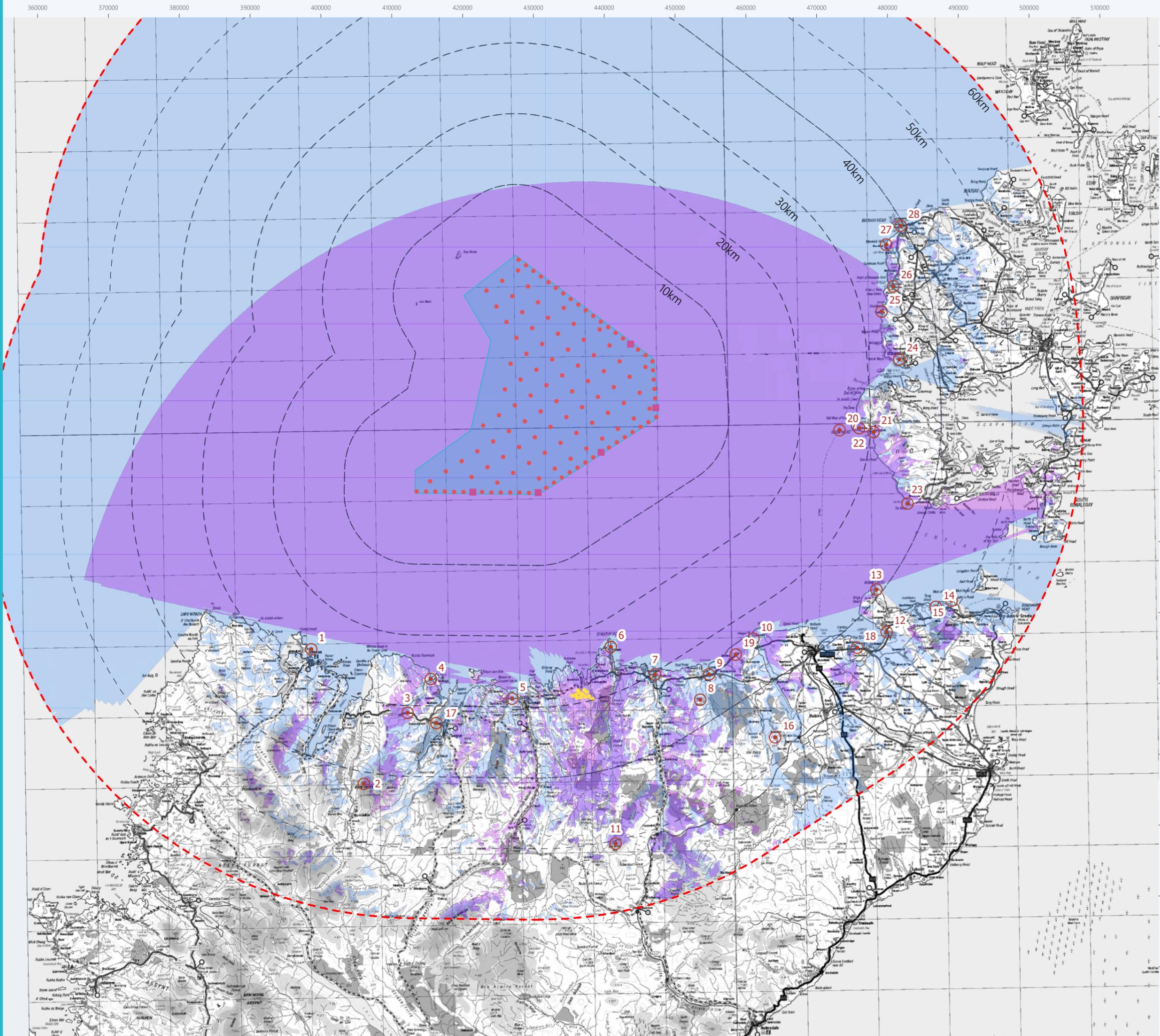
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 149.9m Hoy Community) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Hoy Community

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisleal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Hoy Community Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



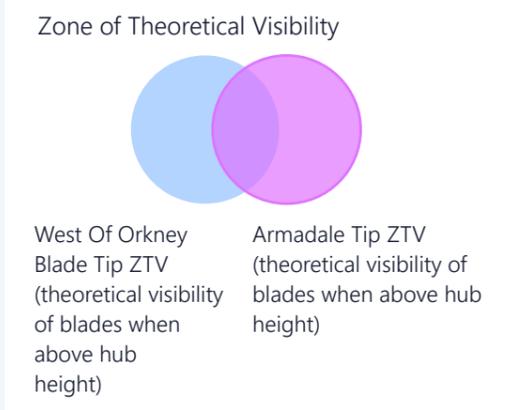


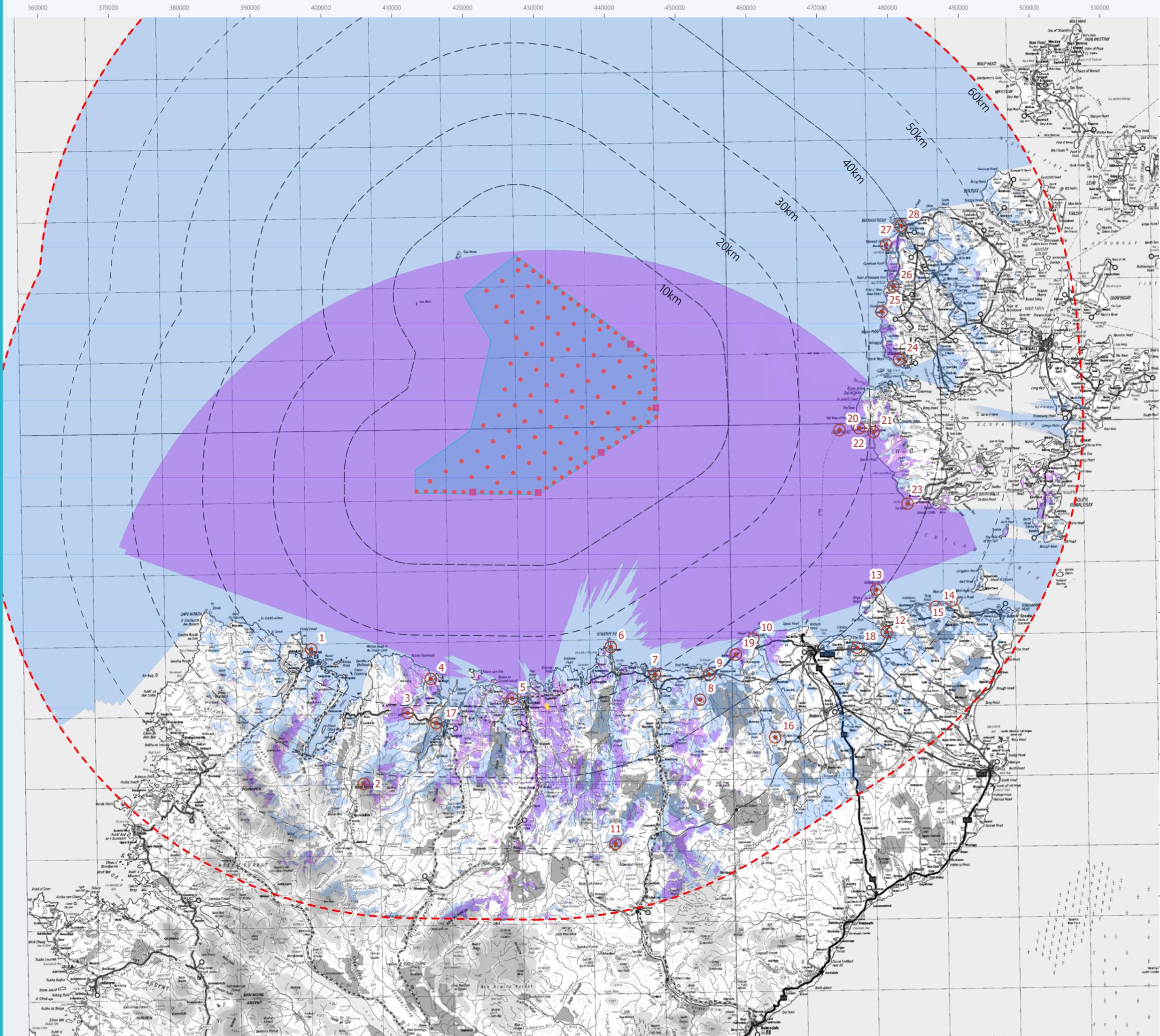
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 149.9m Armadale) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Armadale

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Armadale Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



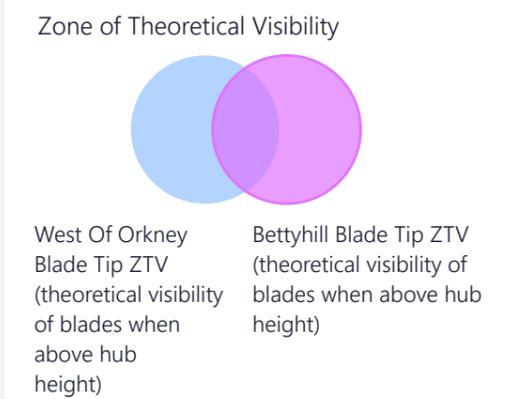


Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 119m Bettyhill) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Bettyhill

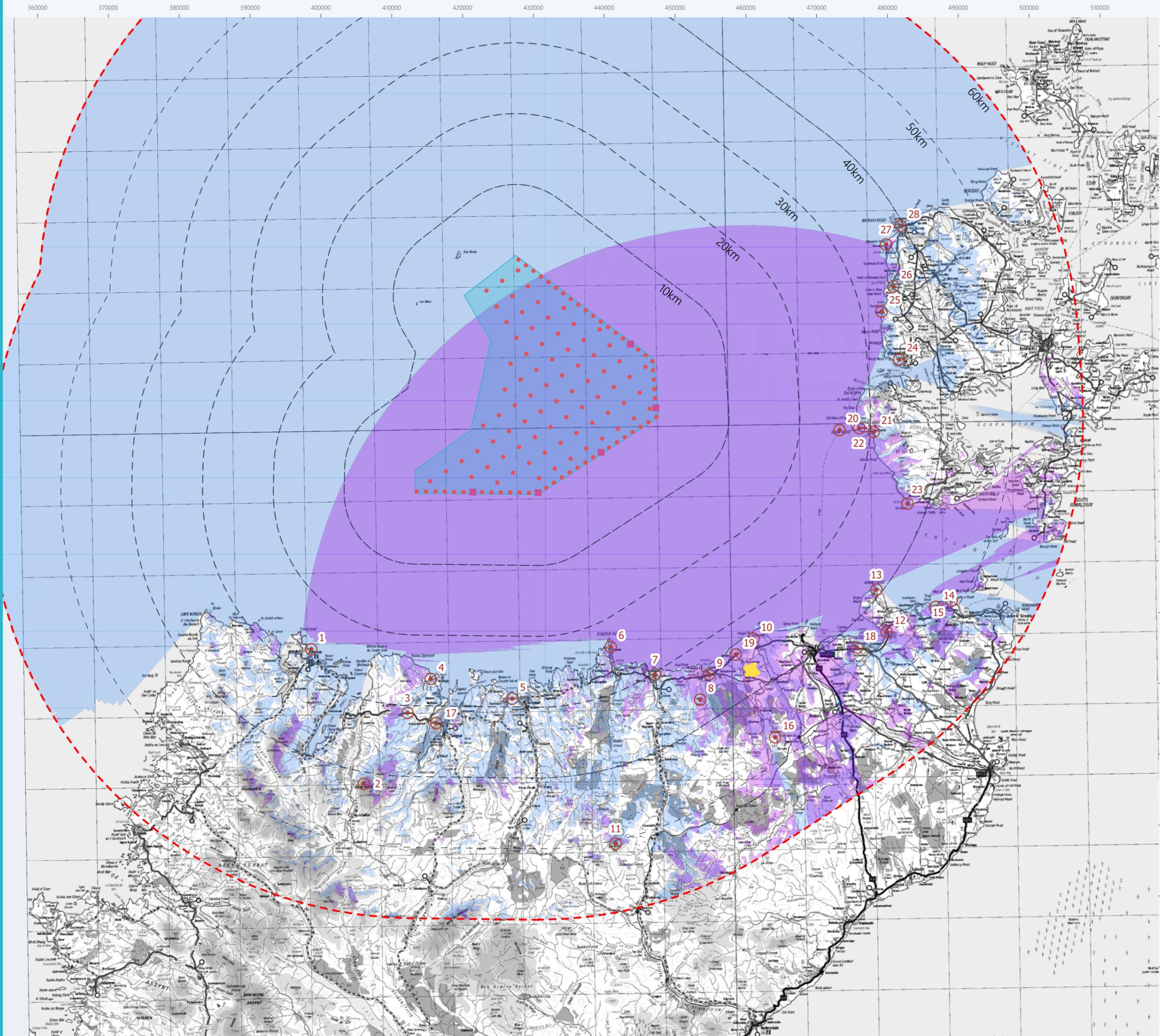
- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Bettyhill Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



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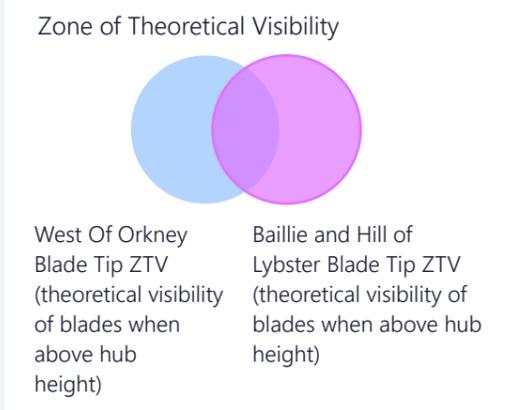


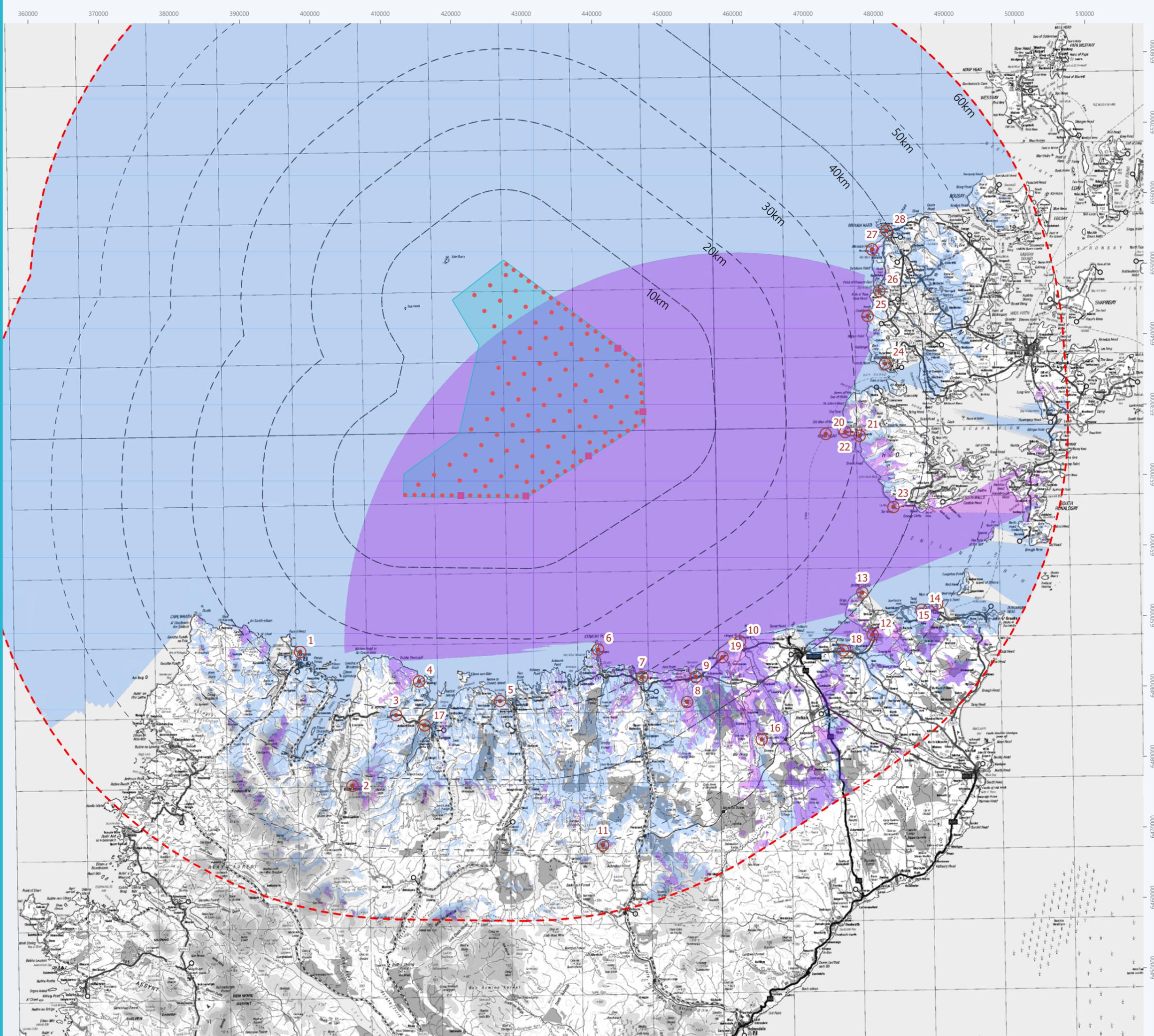
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 110m Baillie and 99.5 Hill of Lybster) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Baillie and Hill of Lybster

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Baillie and Hill of Lybster Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



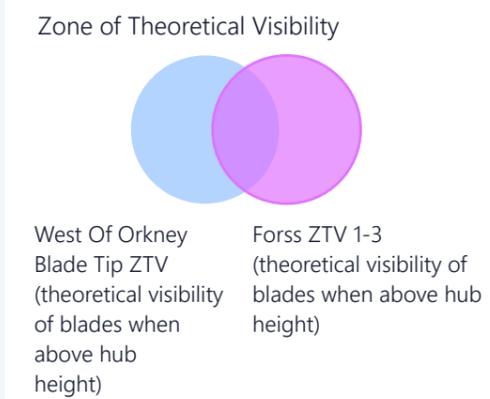


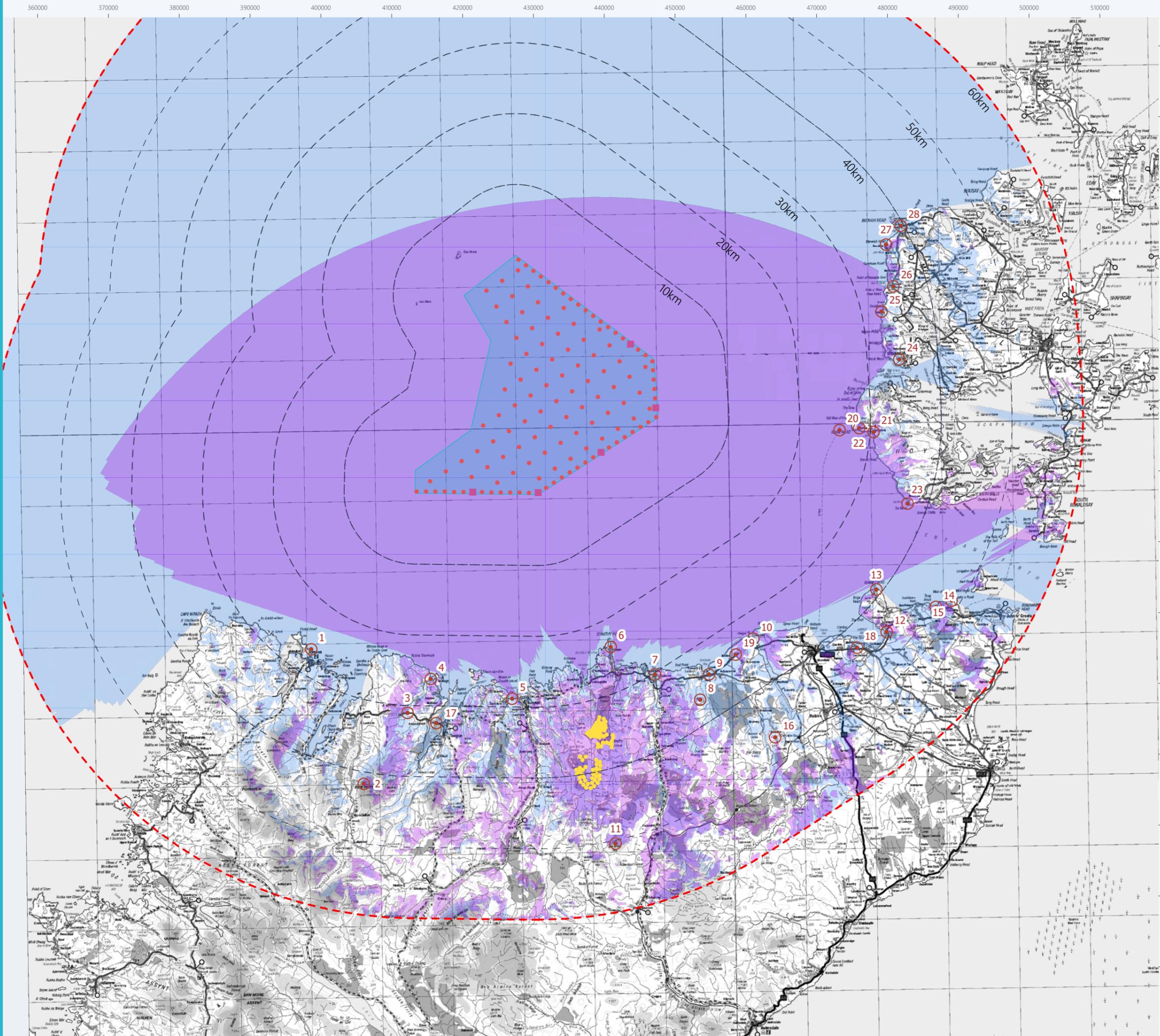
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 78m Forss 1 & 2, 124.5m Forss 3) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Forss 1-3

- | | |
|--|---------------------------------------|
| North Coast Viewpoints | Orkney Viewpoints |
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathly Bay | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Forss 1-3 Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



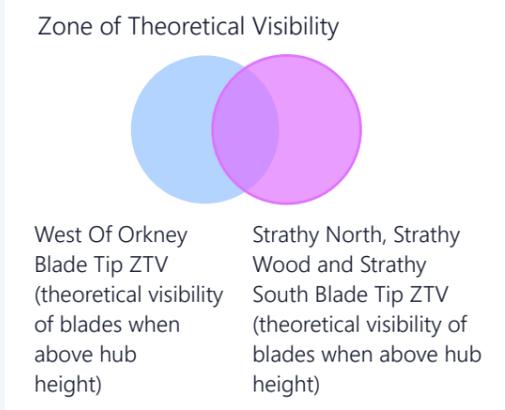


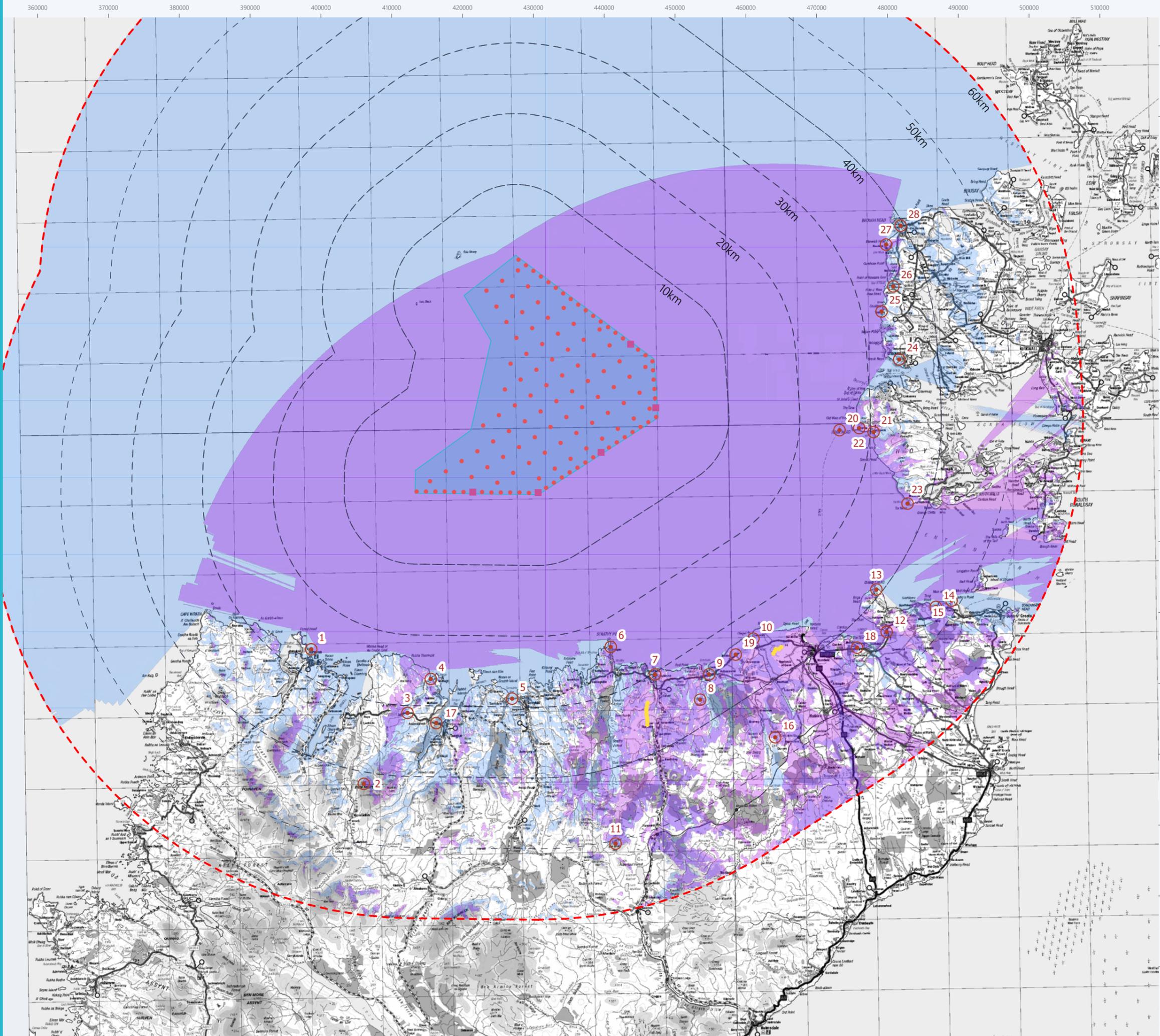
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 110m Strathy North, 180m Strathy Wood and 200m Strathy South) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Strathy North, Strathy Wood and Strathy South

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Strathy Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



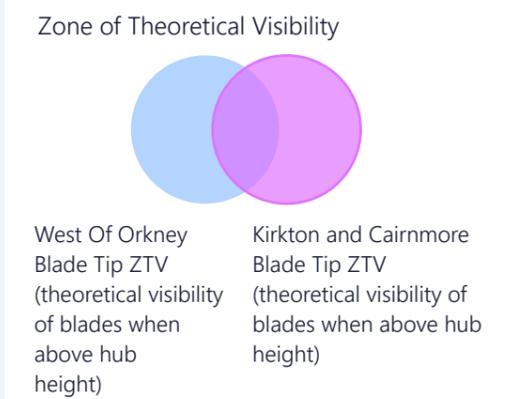


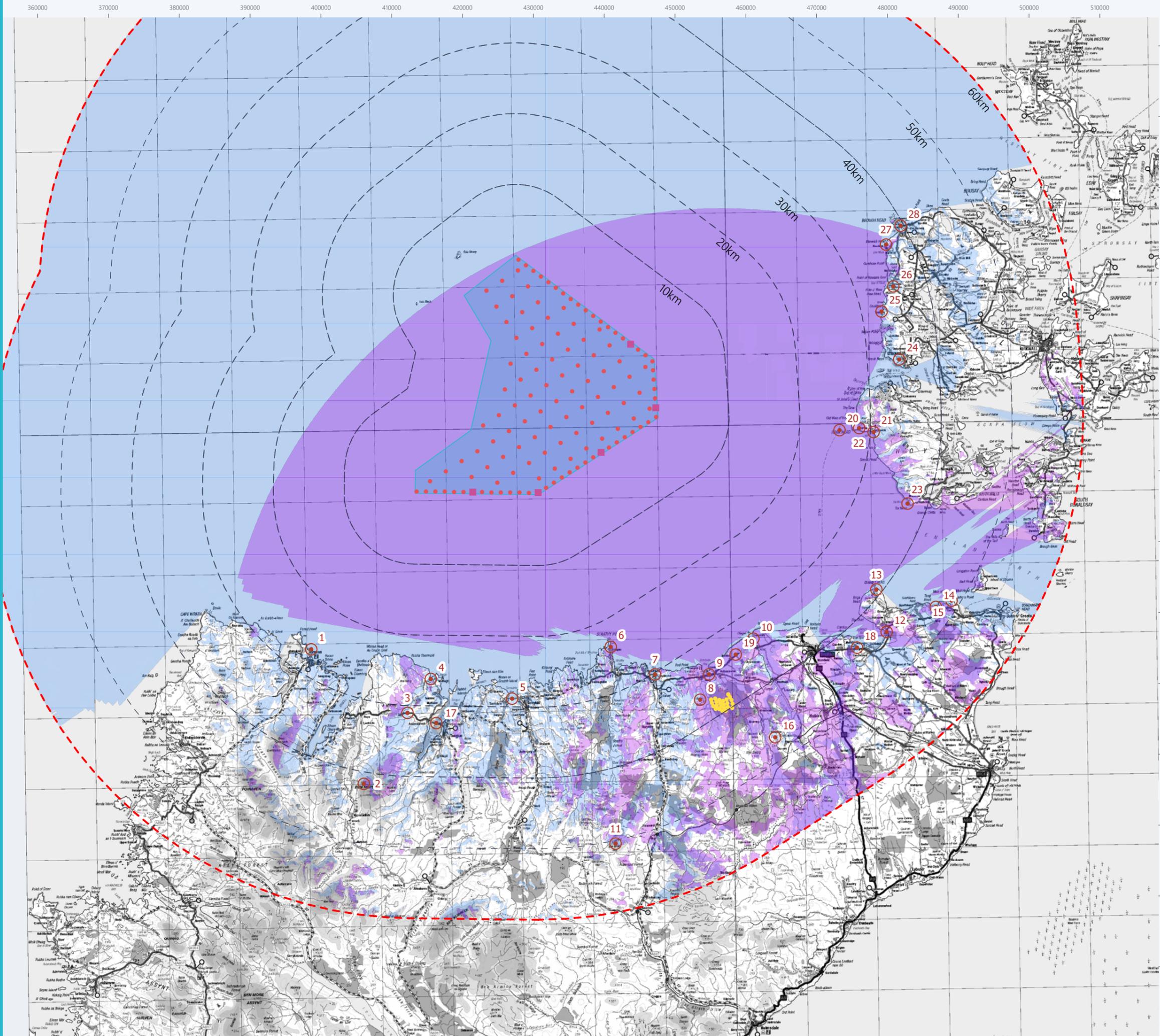
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 149.9m Kirkton and 138.5m Cairnmore) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Kirkton and Cairnmore

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Kirkton and Cairnmore Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints



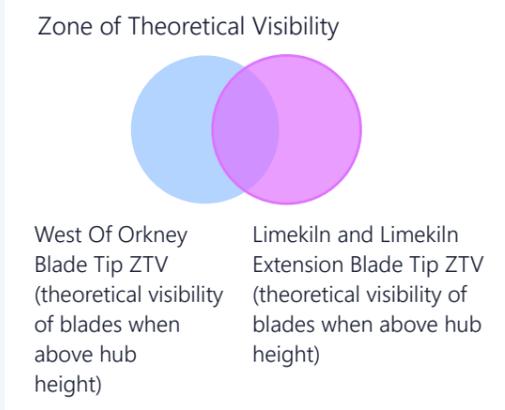


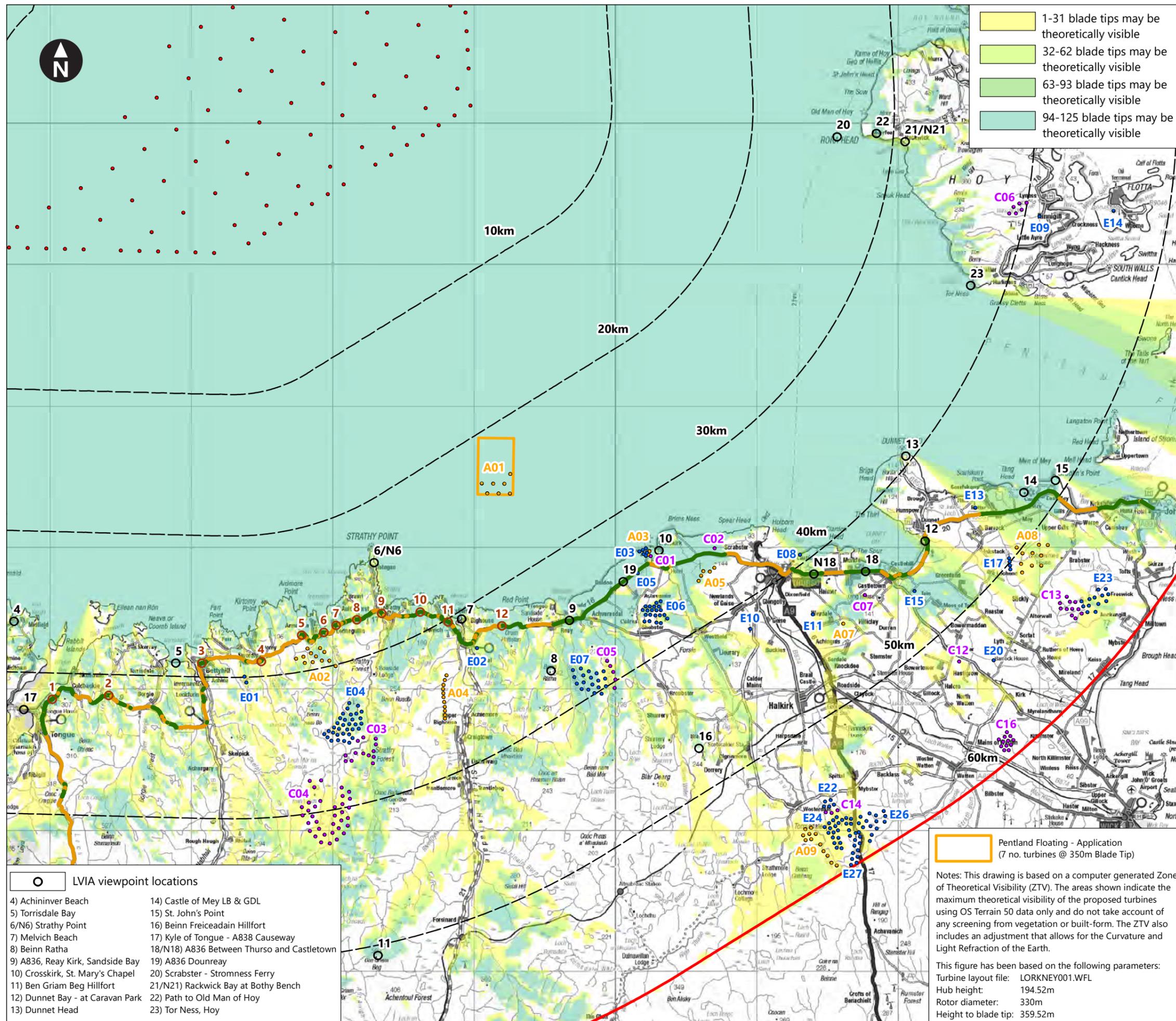
Note:
The ZTV is calculated to turbine tip height (359.52m West of Orkney, 149.9m Limekiln and 149.9m Limekiln Extension) from a viewing height of 2m above ground level.
The terrain model assumes bare ground and does not take into account the potential screening effects of vegetation and buildings. It is derived from OS Terrain 50 and 5 height data.
Earth curvature and atmospheric refraction have been taken into account.

Cumulative ZTV with Limekiln and Limekiln Extension

- | North Coast Viewpoints | Orkney Viewpoints |
|--|---------------------------------------|
| 1. North of Durness - Seanachaisteal | 20. Scrabster-Stromness Ferry |
| 2. Ben Hope | 21. Rackwick Bay |
| 3. AB38 A'Moine peninsula | 22. Path to Old Man of Hoy |
| 4. Kyle of Tongue - Achininiver beach | 23. Tor Ness, Hoy |
| 5. Torrisdale Bay | 24. Warebeth |
| 6. Strathy Point | 25. Yesnaby - Brough of Bigging |
| 7. Melvich Bay/Big House LB | 26. Bay of Skail |
| 8. Beinn Ratha | 27. Marwick Head Kitchener Memorial |
| 9. Reay Kirk LB | 28. Earl's Palace Birsay, Brough Road |
| 10. Forss /Crosskirk/St Mary's Chapel | |
| 11. Ben Griam Beg hillfort | |
| 12. Dunnet Bay | |
| 13. Dunnet Head | |
| 14. Castle of Mey LB & GDL | |
| 15. St John's Point | |
| 16. Beinn Freiceadain hillfort | |
| 17. Kyle of Tongue - AB38 causeway | |
| 18. AB36 Between Thurso and Castletown | |
| 19. AB36 Dounreay | |

- Option Agreement Area
- West Of Orkney Turbines
- West Of Orkney Substations
- Limekiln and Limekiln Extension Turbines
- 60km Study Area
- North Coast and Orkney Viewpoints





- 1-31 blade tips may be theoretically visible
- 32-62 blade tips may be theoretically visible
- 63-93 blade tips may be theoretically visible
- 94-125 blade tips may be theoretically visible

- Key
- Proposed turbine locations
 - Landscape and Visual Study Area
 - Lines indicating distance from the proposed turbine locations
 - Sequential viewpoint locations

- 1) Tongue
- 2) Moorland near Loch Cròcach
- 3) Bettyhill
- 4) Kirtomy Burn
- 5) Crasbackie Hill
- 6) Armadale Bay
- 7) Lednagullin
- 8) Car Park near Lochan Ealach
- 9) Strathy Valley
- 10) Car Park (Signposted Viewpoint)
- 11) Melvich
- 12) Mackay Country Landmark

Offshore Project would be theoretically visible
 (Views may be screened by intervening local landform, vegetation or built form not accounted for in the ZTV)

Offshore Project would not be theoretically visible
 (Area is outwith the ZTV)

Existing / Under Construction Wind Farms

- E01) Bettyhill
- E02) Ackron Farm
- E03) Forss I & II
- E04) Strathy North
- E05) Balmore Farm
- E06) Baillie
- E07) Limekiln (Under Construction)
- E08) Thurso WWTW
- E09) Ore Brae, Hoy
- E10) Moss of Geise
- E11) Weydale Farm
- E13) Taigh na Muir
- E14) West Hill, Flotta
- E15) Thurdisoft Farm
- E17) Lochend
- E20) Burnside Lyth
- E22) Achlachan
- E23) Stroupster
- E24) Causeymire
- E26) Halsary
- E27) Bad a Cheo

- Consented Wind Farms
- C01) Hill of Lybster
- C02) Thusater Farm
- C03) Strathy Wood
- C04) Strathy South
- C05) Limekiln Extension
- C06) Hoy Community
- C07) Cnoc na Gaoithe
- C12) Thura Mains
- C13) Slickly
- C14) Achlachan II
- C16) Cogle Moss

- Application Wind Farms
- A01) Pentland Floating (Offshore)
- A02) Armadale
- A03) Forss III
- A04) Kirkton
- A05) Cairnmore Hill
- A07) East of Whitmoss
- A08) Hollandmey
- A09) Tormsdale

0 2 4 6 8 10 12 14 16 km
 Scale at A3: 1:260,000

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West of Orkney Offshore Wind Farm

Figure 18.21a
A836 Sequential Route Assessment

- LVIA viewpoint locations
- 4) Achinver Beach
- 5) Torrisdale Bay
- 6/N6) Strathy Point
- 7) Melvich Beach
- 8) Beinn Ratha
- 9) A836, Reay Kirk, Sandside Bay
- 10) Crosskirk, St. Mary's Chapel
- 11) Ben Griam Beg Hillfort
- 12) Dunnet Bay - at Caravan Park
- 13) Dunnet Head
- 14) Castle of Mey LB & GDL
- 15) St. John's Point
- 16) Beinn Freiceadain Hillfort
- 17) Kyle of Tongue - A838 Causeway
- 18/N18) A836 Between Thurso and Castletown
- 19) A836 Dounreay
- 20) Scrabster - Stromness Ferry
- 21/N21) Rackwick Bay at Bothy Bench
- 22) Path to Old Man of Hoy
- 23) Tor Ness, Hoy

Pentland Floating - Application
 (7 no. turbines @ 350m Blade Tip)

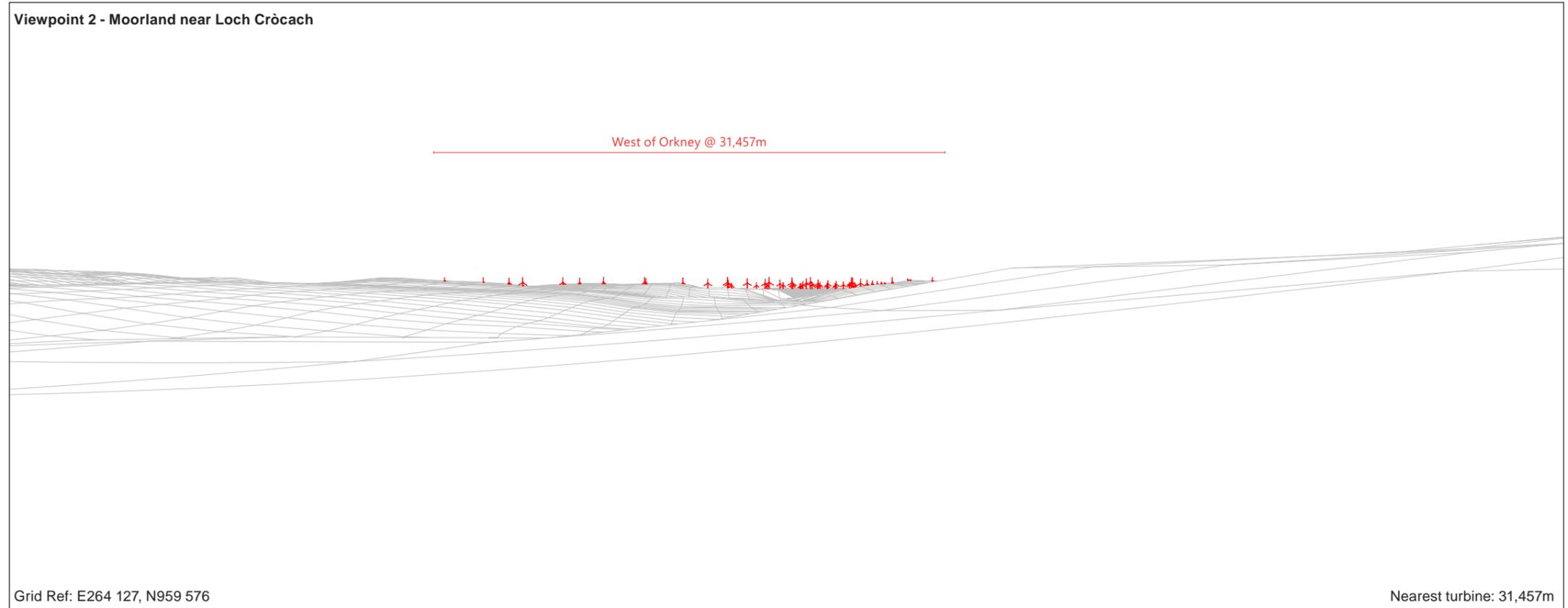
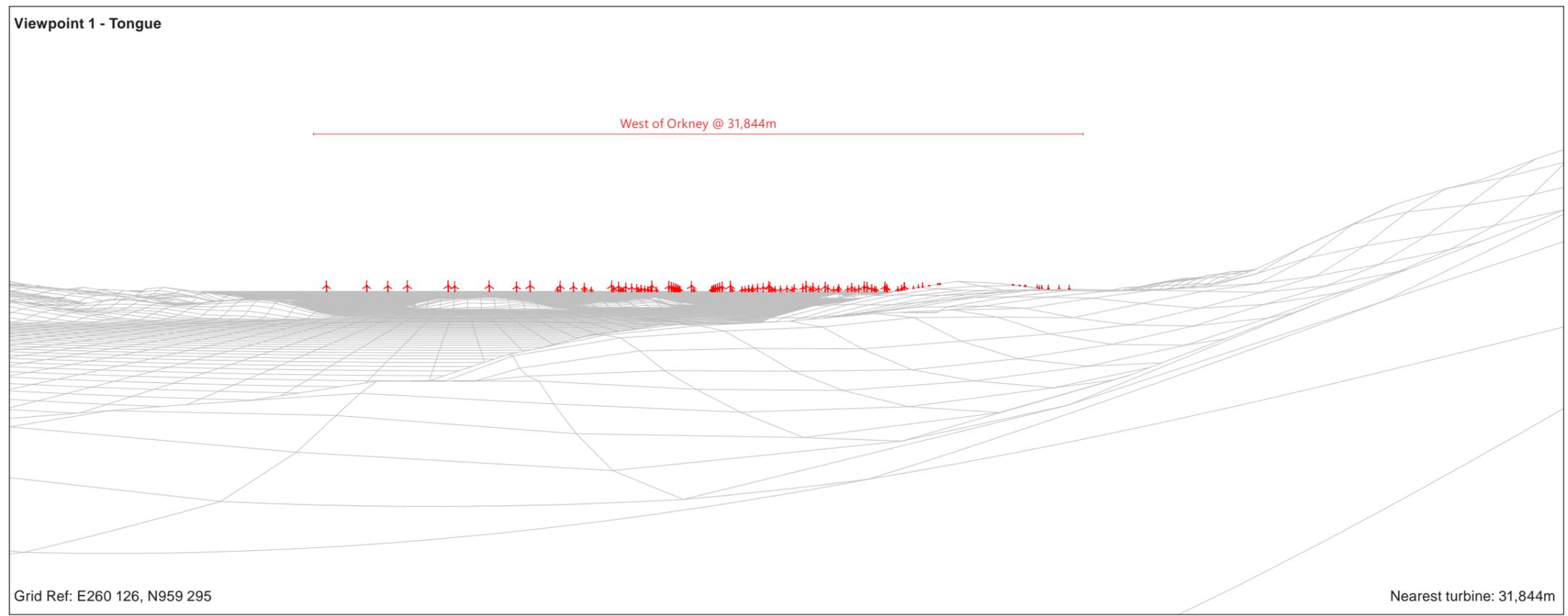
Notes: This drawing is based on a computer generated Zone of Theoretical Visibility (ZTV). The areas shown indicate the maximum theoretical visibility of the proposed turbines using OS Terrain 50 data only and do not take account of any screening from vegetation or built-form. The ZTV also includes an adjustment that allows for the Curvature and Light Refraction of the Earth.

This figure has been based on the following parameters:
 Turbine layout file: LORKNEY001.WFL
 Hub height: 194.52m
 Rotor diameter: 330m
 Height to blade tip: 359.52m

May 2023



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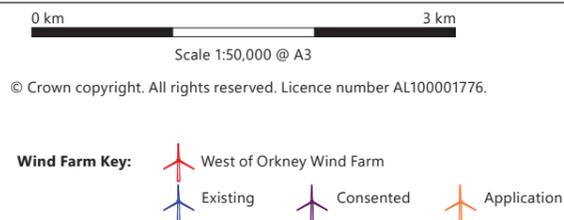
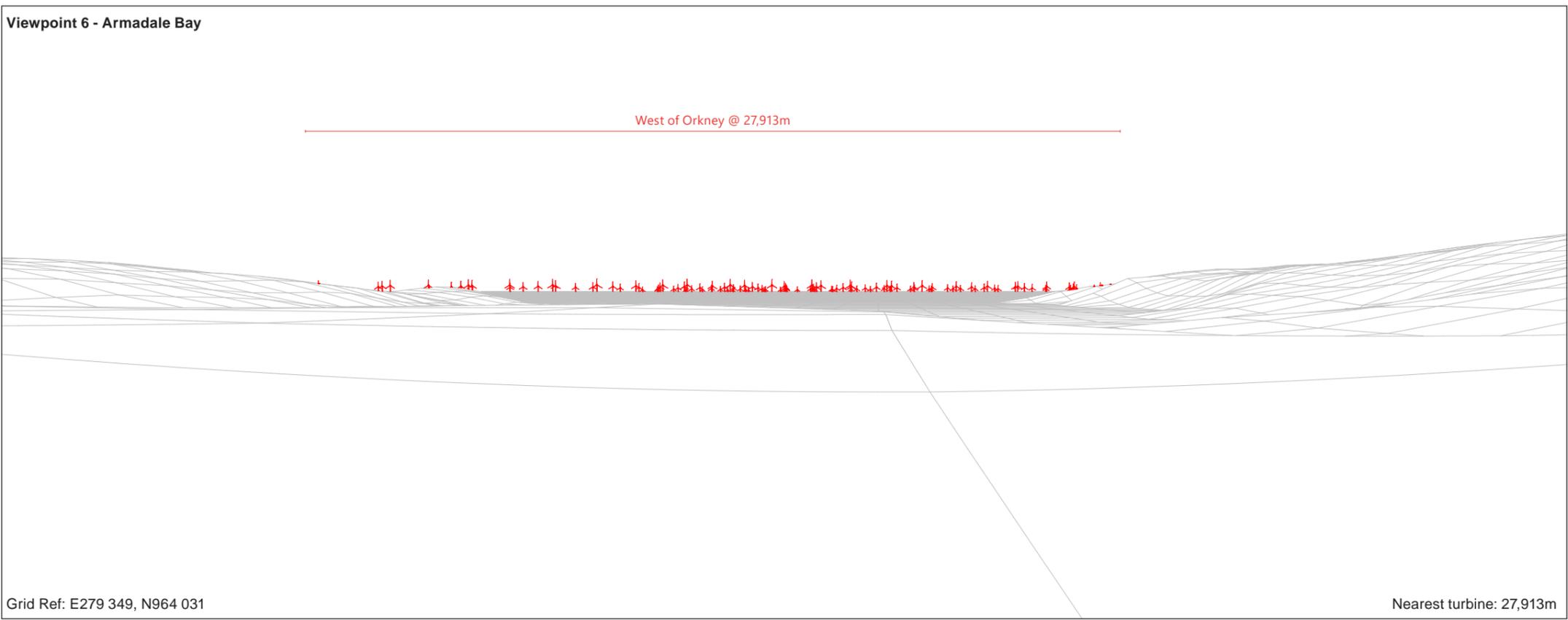
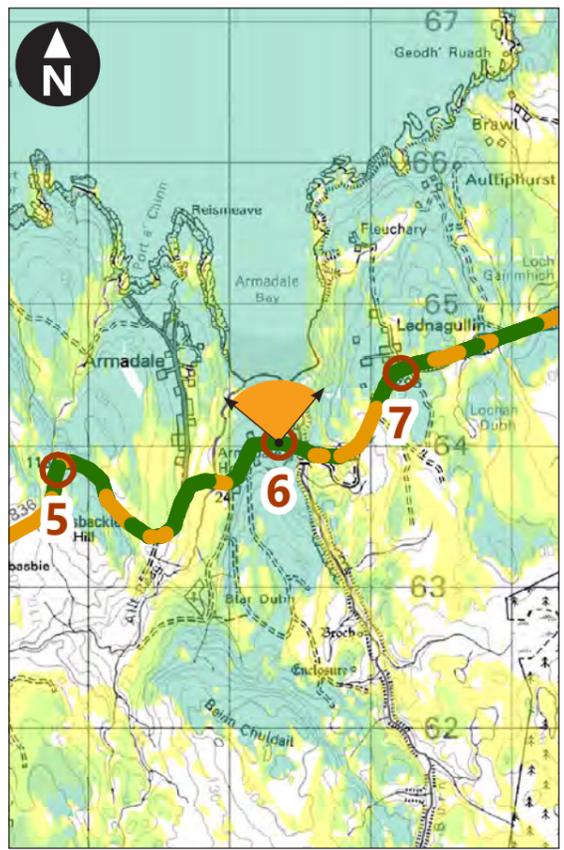
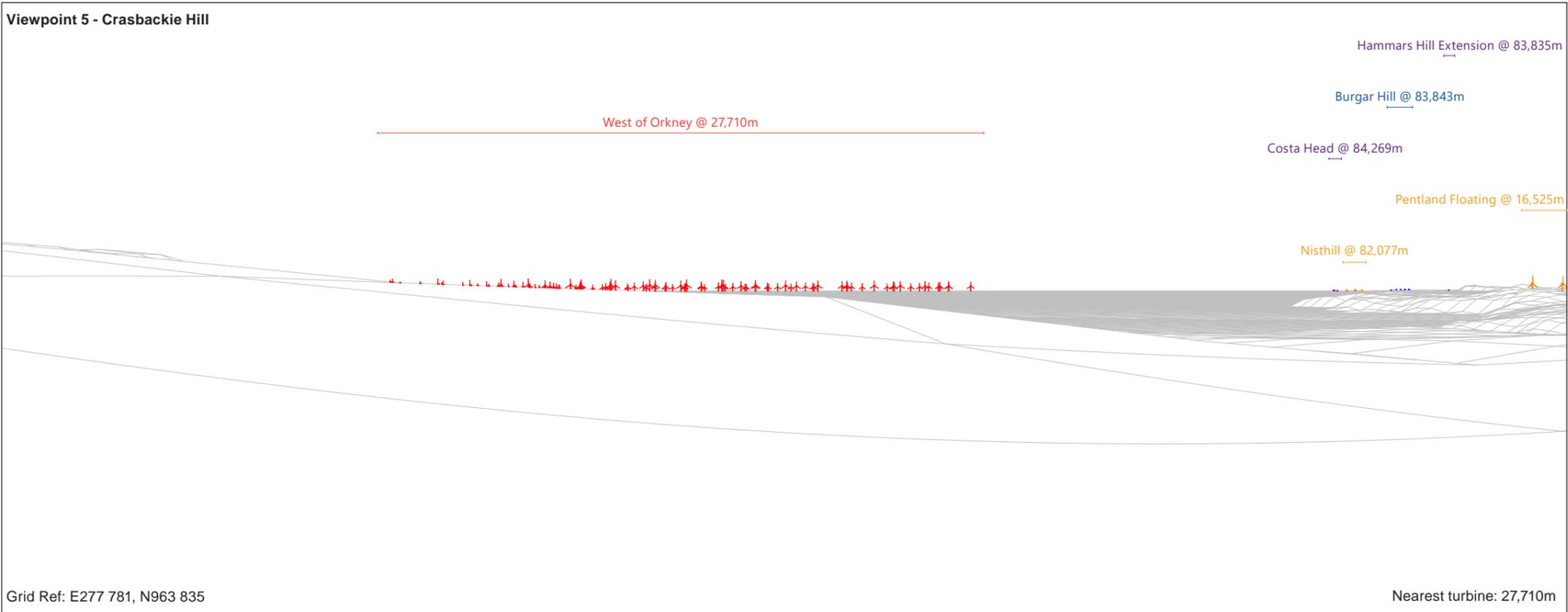
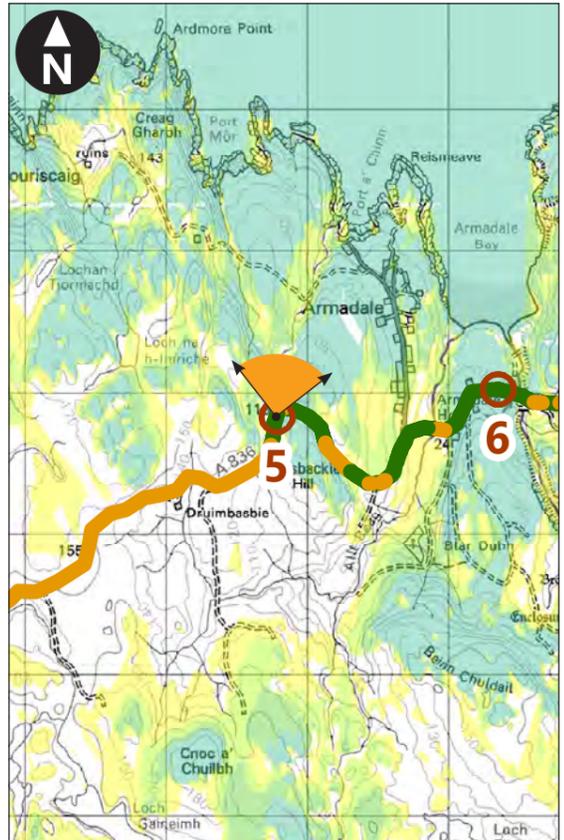


- Notes:
- i) Key for ZTV as illustrated on Figure 18.21a.
 - ii) Key for cumulative wind farms as illustrated on Figure 18.21a.
 - iii) The OS Terrain 50 data on the wirelines and ZTV does not take into account the screening effects of any localised landform, vegetation and built-form.
 - iv) Wirelines illustrate a 90° field of view (unless otherwise stated) and are provided for illustrative purposes only.

Client

Figure 18.21b
A836 Sequential Route Assessment

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Notes: i) Key for ZTV as illustrated on Figure 18.21a.
 ii) Key for cumulative wind farms as illustrated on Figure 18.21a.
 iii) The OS Terrain 50 data on the wirelines and ZTV does not take into account the screening effects of any localised landform, vegetation and built-form.
 iv) Wirelines illustrate a 90° field of view (unless otherwise stated) and are provided for illustrative purposes only.

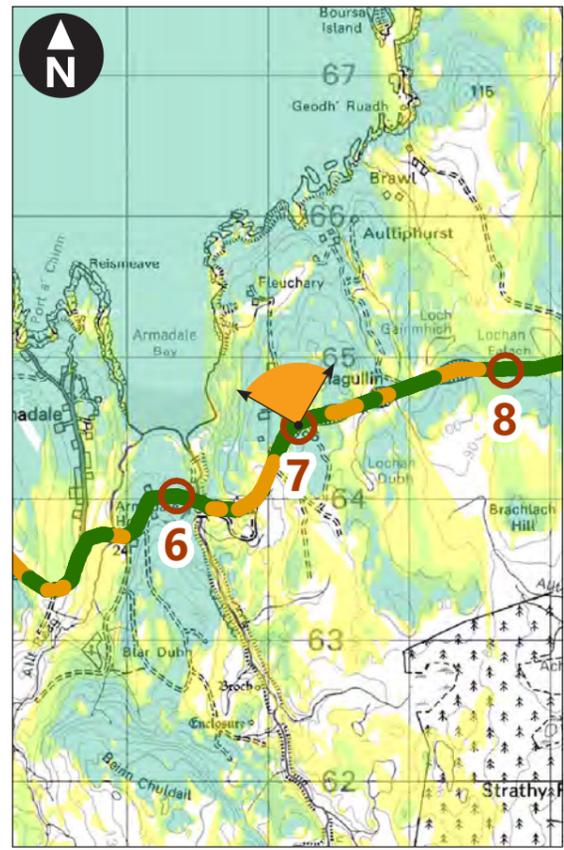
Client

Figure 18.21d
A836 Sequential Route Assessment

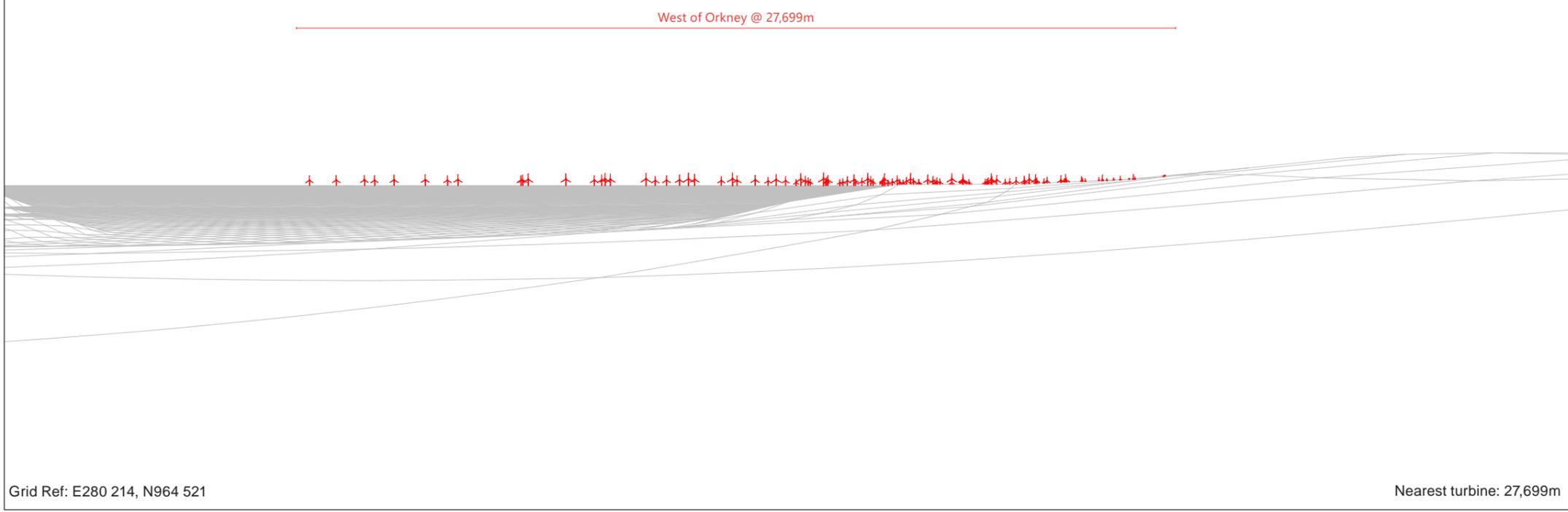
West of Orkney Offshore Wind Farm

May 2023

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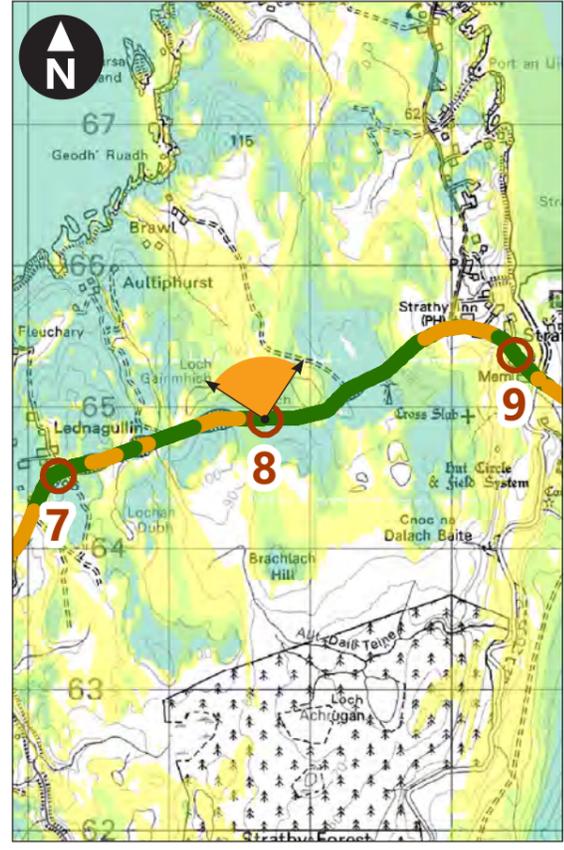


Viewpoint 7 - Lednagullin

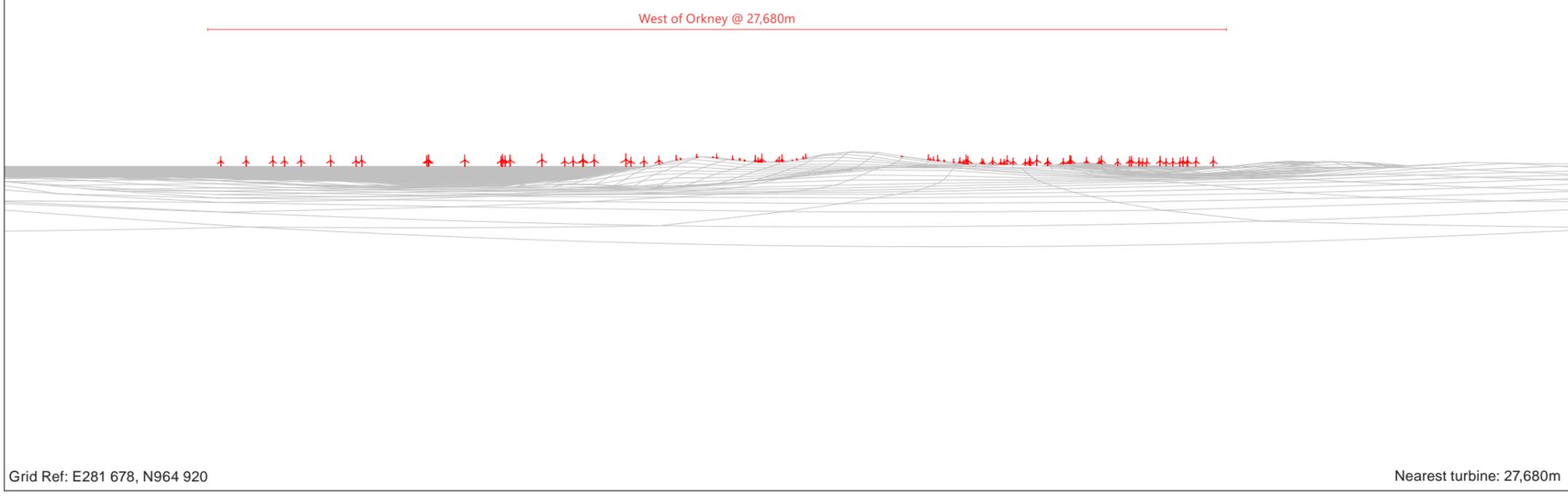


Grid Ref: E280 214, N964 521

Nearest turbine: 27,699m

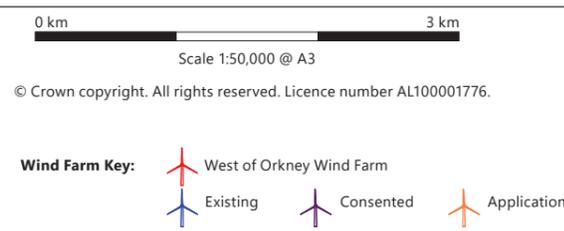


Viewpoint 8 - Car Park near Lochan Ealach



Grid Ref: E281 678, N964 920

Nearest turbine: 27,680m



- Notes: i) Key for ZTV as illustrated on Figure 18.21a.
 ii) Key for cumulative wind farms as illustrated on Figure 18.21a.
 iii) The OS Terrain 50 data on the wirelines and ZTV does not take into account the screening effects of any localised landform, vegetation and built-form.
 iv) Wirelines illustrate a 90° field of view (unless otherwise stated) and are provided for illustrative purposes only.

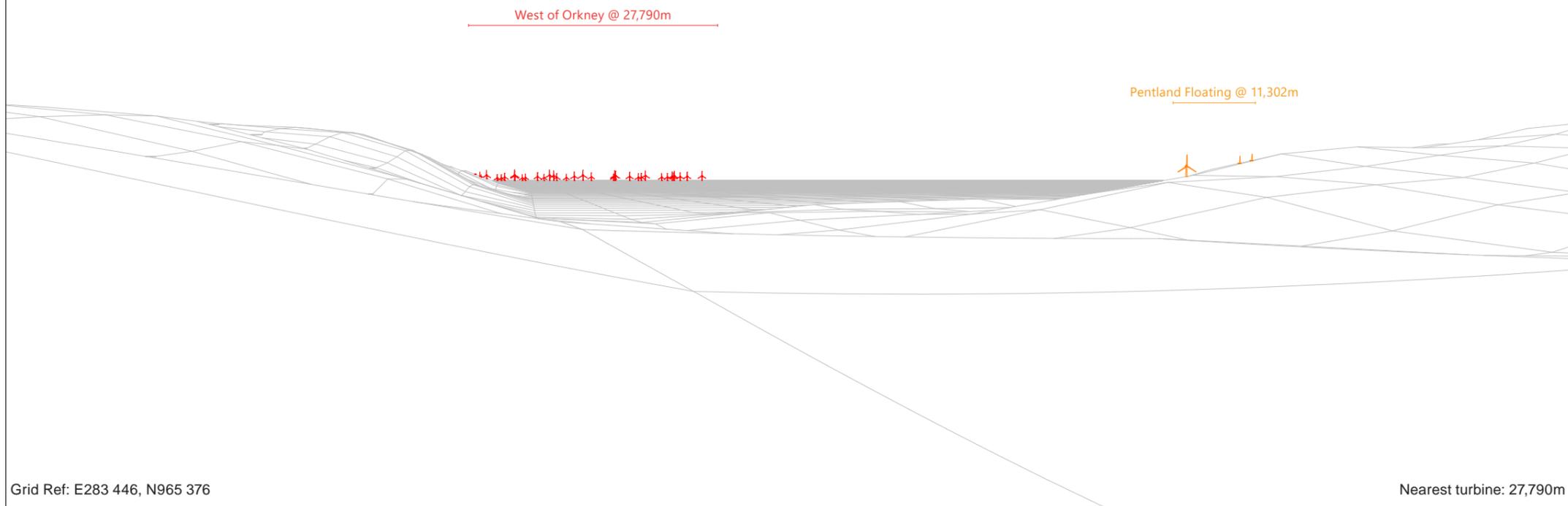
Client

Figure 18.21e
A836 Sequential Route Assessment

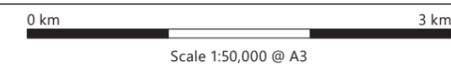
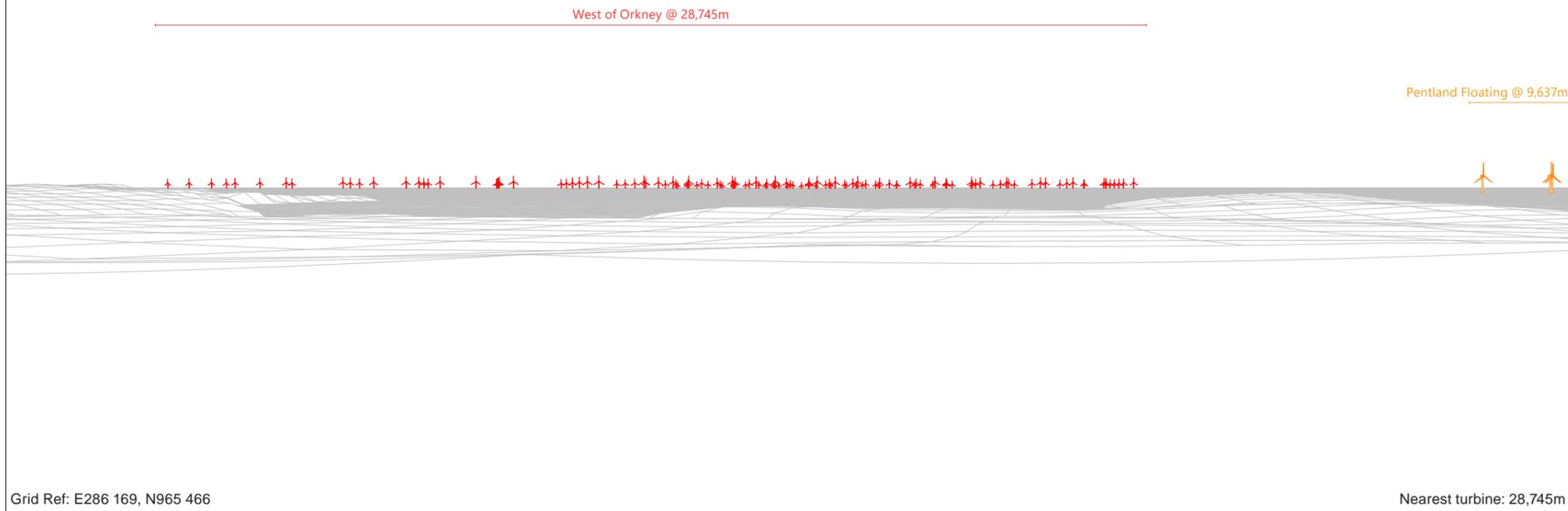
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Viewpoint 9 - Strathy Valley



Viewpoint 10 - Car Park (Signposted Viewpoint)



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- Notes:
- i) Key for ZTV as illustrated on Figure 18.21a.
 - ii) Key for cumulative wind farms as illustrated on Figure 18.21a.
 - iii) The OS Terrain 50 data on the wirelines and ZTV does not take into account the screening effects of any localised landform, vegetation and built-form.
 - iv) Wirelines illustrate a 90° field of view (unless otherwise stated) and are provided for illustrative purposes only.

Client

Figure 18.21f
A836 Sequential Route Assessment

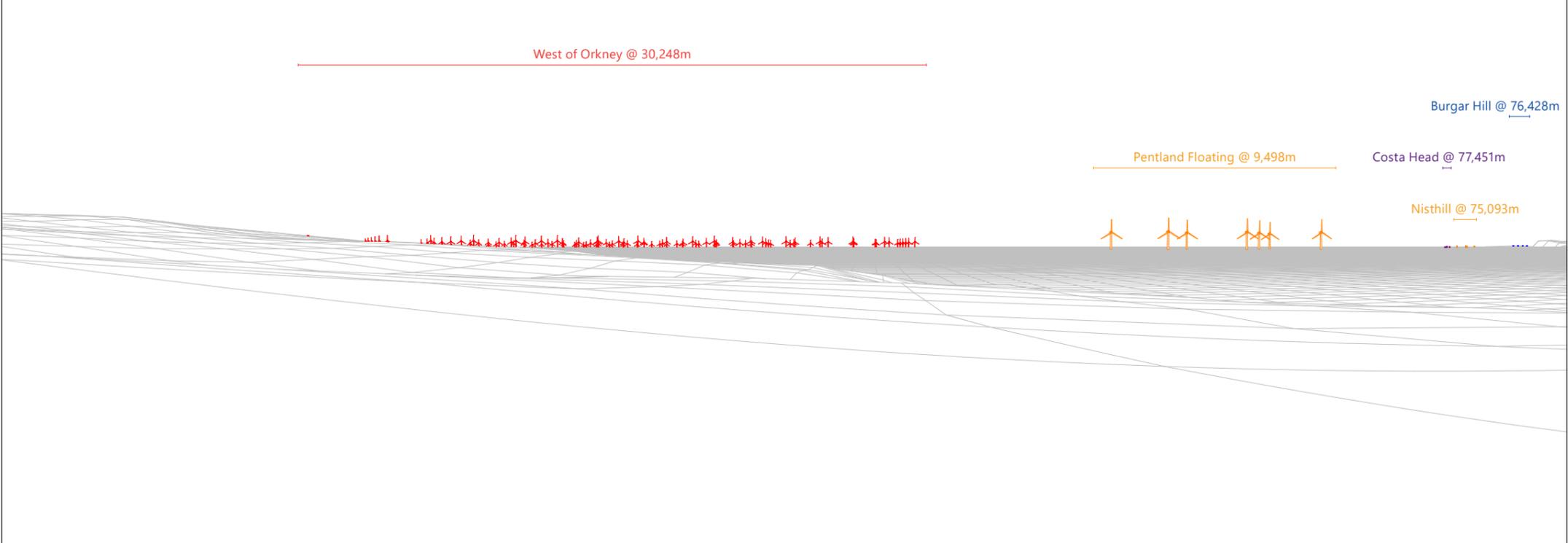
West of Orkney Offshore Wind Farm

May 2023

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Viewpoint 11 - Melvich

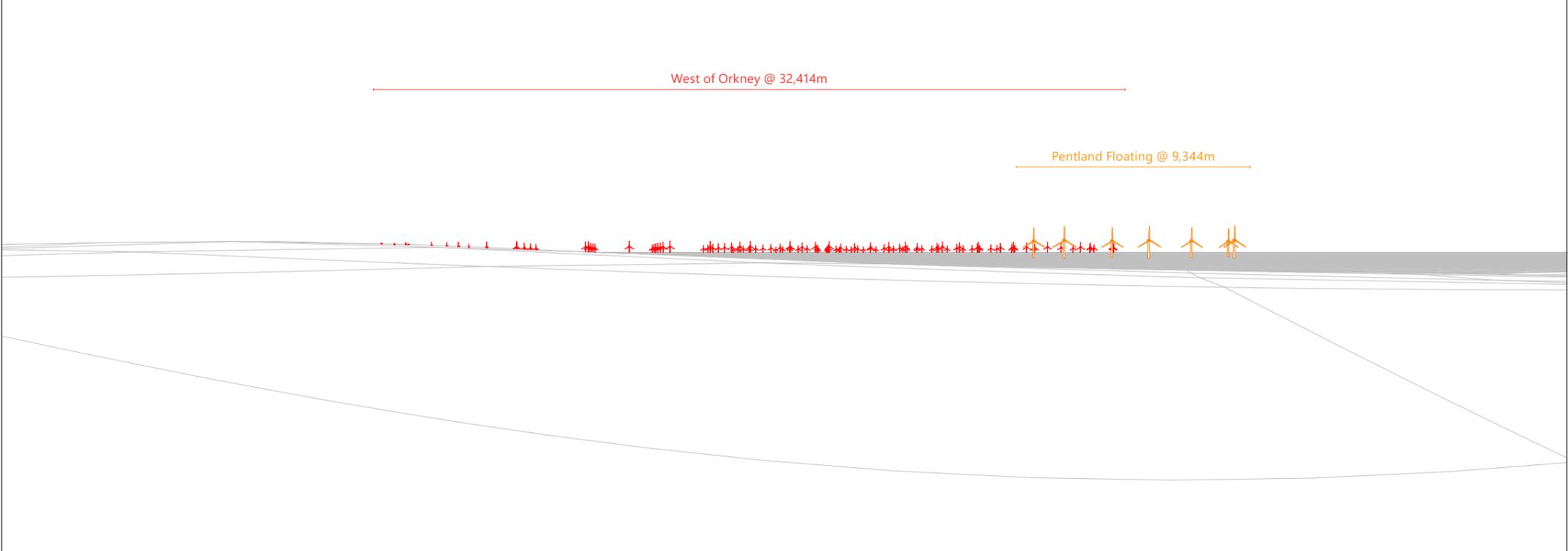


Grid Ref: E288 140, N964 767

Nearest turbine: 30,248m

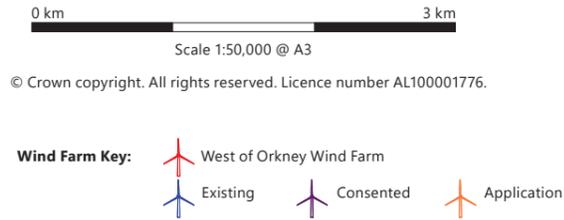


Viewpoint 12 - Mackay Country Landmark



Grid Ref: E291 947, N964 493

Nearest turbine: 32,414m



- Notes:
- i) Key for ZTV as illustrated on Figure 18.21a.
 - ii) Key for cumulative wind farms as illustrated on Figure 18.21a.
 - iii) The OS Terrain 50 data on the wirelines and ZTV does not take into account the screening effects of any localised landform, vegetation and built-form.
 - iv) Wirelines illustrate a 90° field of view (unless otherwise stated) and are provided for illustrative purposes only.

Client



Figure 18.21g
A836 Sequential Route Assessment

West of Orkney Offshore Wind Farm

May 2023

