

Pentland floating offshore wind farm

Volume 4: Visual Materials A.17.4

Cultural Heritage Visual Materials



OFFSHORE EIAR (VOLUME 4): VISUAL MATERIALS

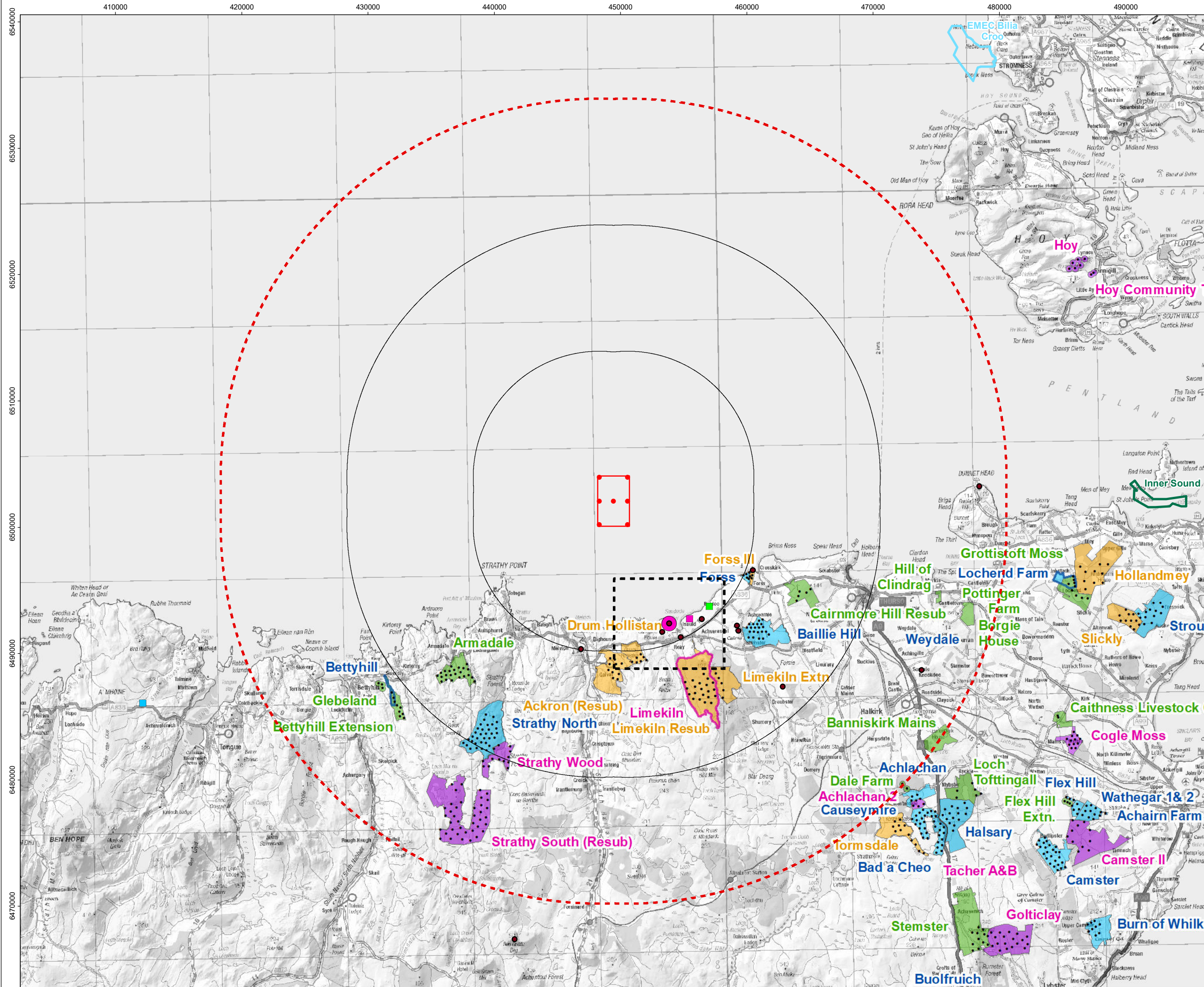
APPENDIX 17.4: CULTURAL HERITAGE VISUAL MATERIALS

Document Title:	Pentland Floating Offshore Wind Farm Offshore EIAR
Document no.	GBPNTD-ENV-ORA-PR-00002
Project:	Pentland Floating Offshore Wind Farm
Originator Company	Optimised Environments (OPEN) on behalf of Orkney Research Centre for Archaeology (ORCA)
Revision	01
Originator	Jo Phillips
Date	21.07.2022

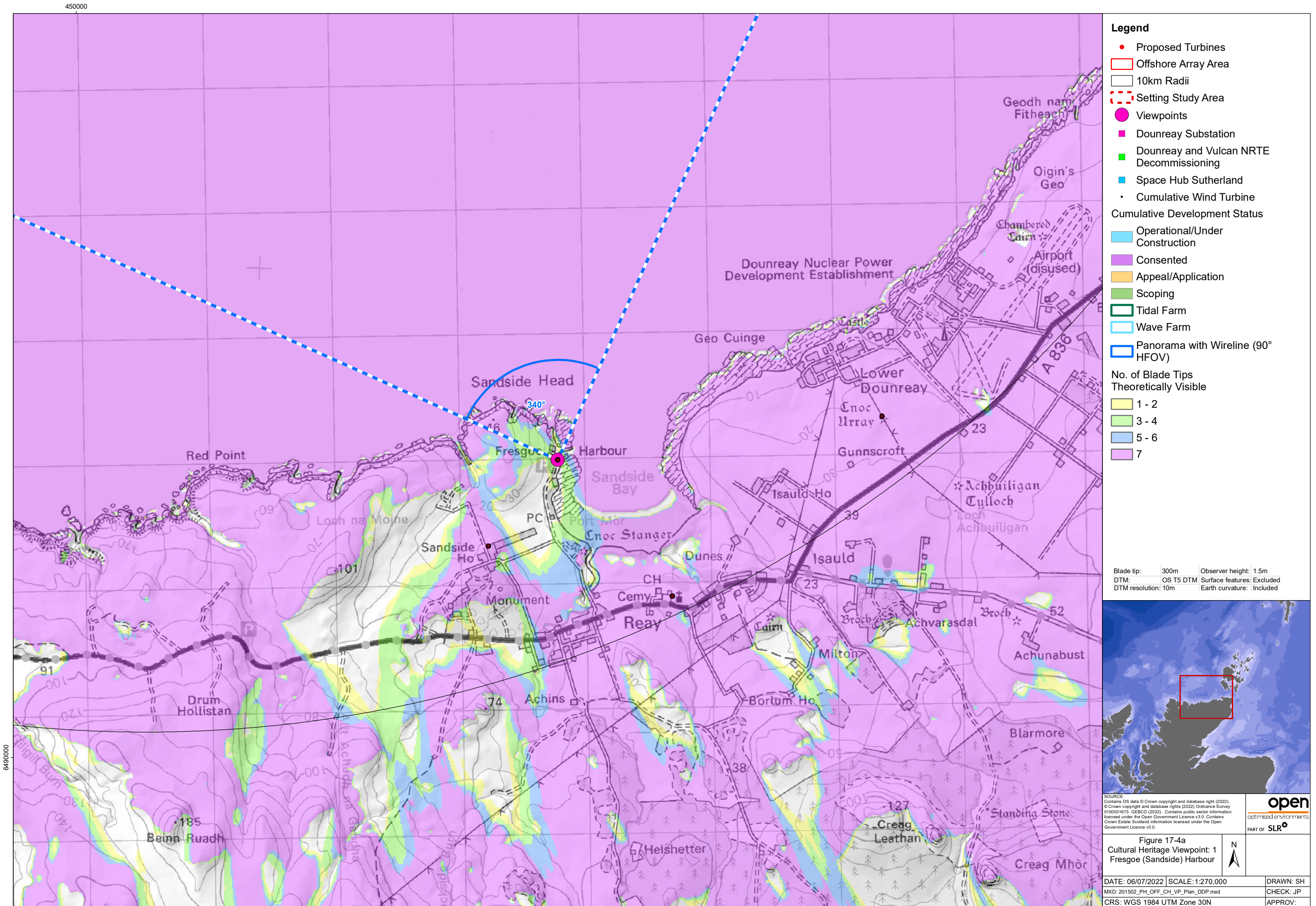
Revision History:

Revision	Date	Status	Originator	Reviewed	Approved
01	21.07.2022	Final	JP	TW/PM	PM





Scale: 1:270,000



Scale: 1:25,000

Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 Surface features: Excluded
 DTM resolution: 10m
 Earth curvature: Included

Figure 17-4a
 Cultural Heritage Viewpoint: 1
 Fresgoe (Sandside) Harbour

DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
 MOD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd CHECK: JP
 CRS: WGS 1984 UTM Zone 30N APPROV:

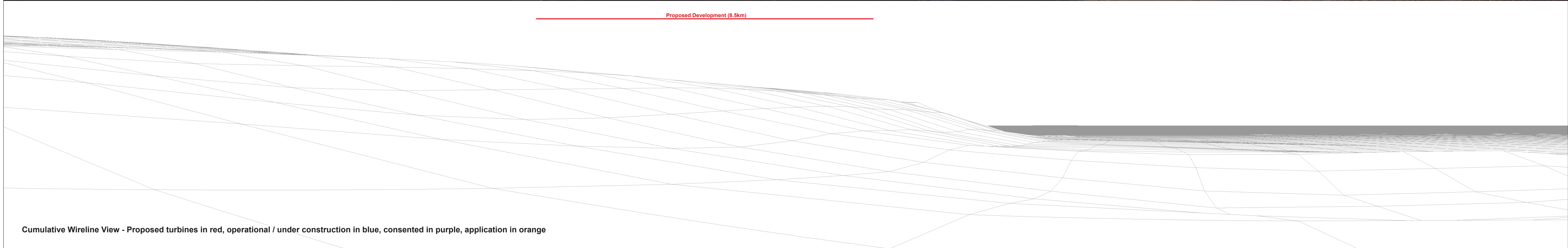
open
 optimised environments
 PART OF: SLR

This image provides landscape and visual context only



Existing View

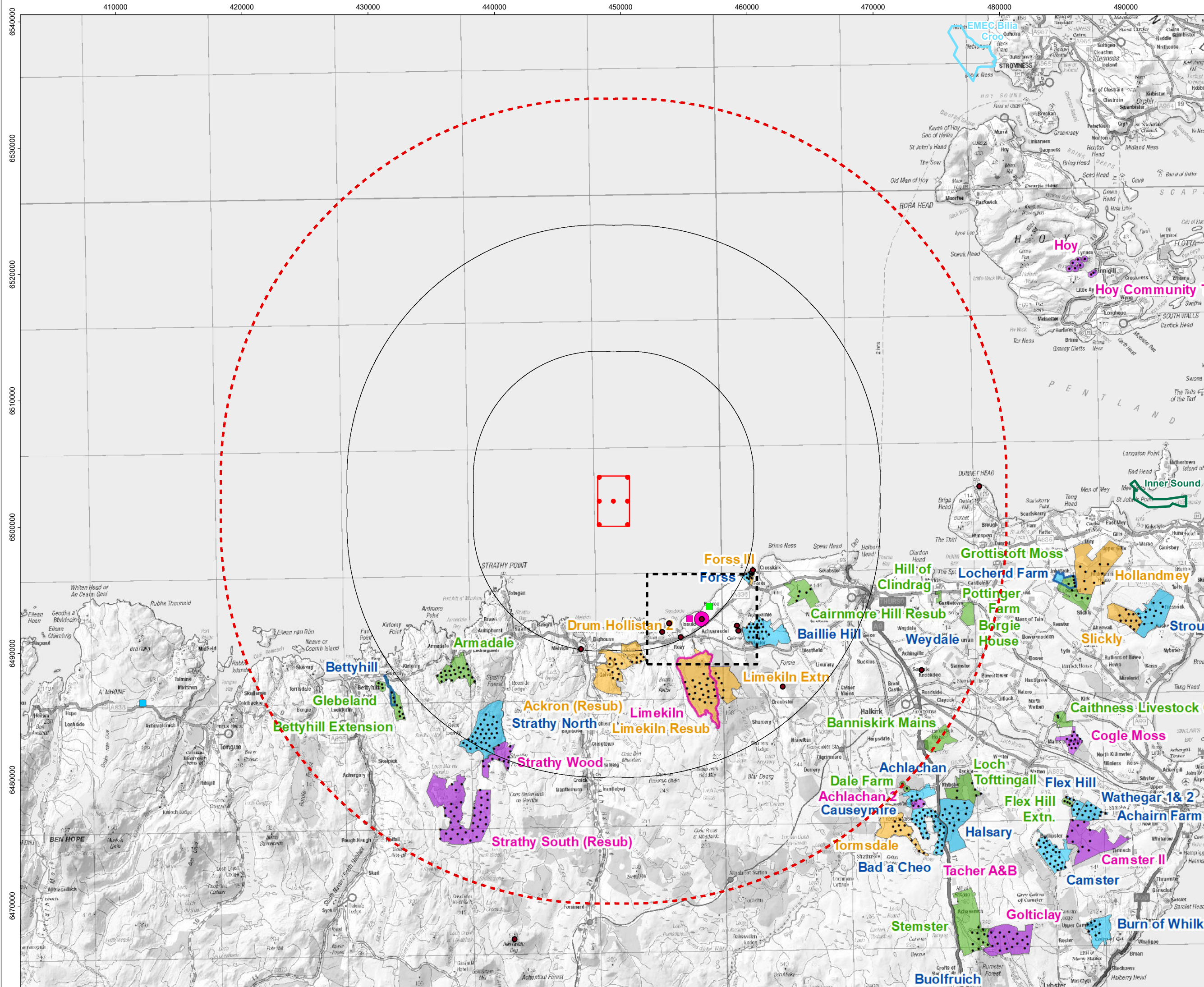
Proposed Development (8.5km)



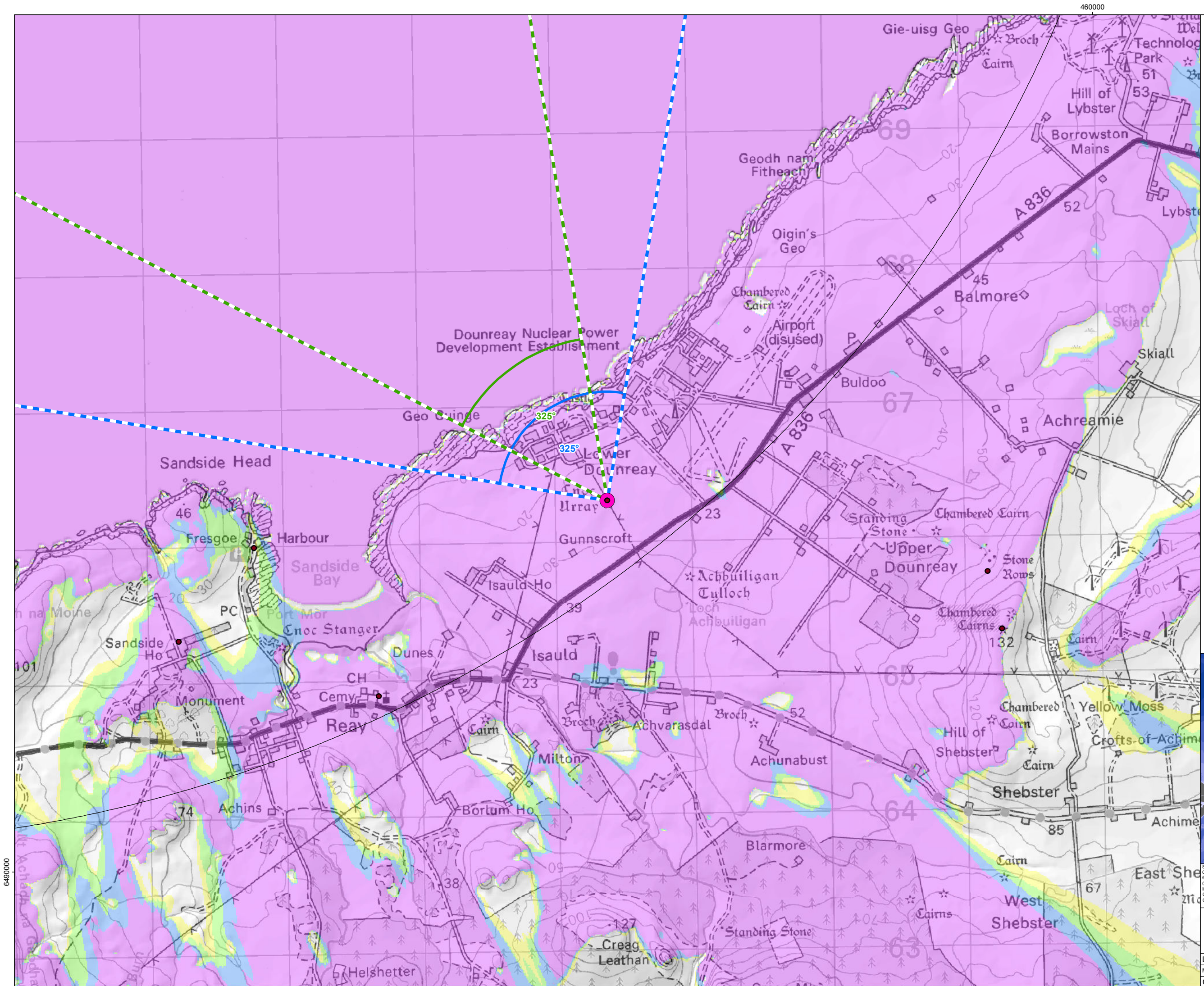
Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	295785 E 965990 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	2.3 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	340°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	8,490 m	Correct printed image size	820 x 130 mm	Date & time taken	10/11/2021 11:25

Figure 17.4b
Viewpoint 1: Fresgoe (Sandside) Harbour Panorama with Cumulative Wireline



Scale: 1:270,000



Scale: 1:25,000

Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 DTM resolution: 10m
 Surface features: Excluded
 Earth curvature: Included

Figure 17-5a
 Cultural Heritage Viewpoint: 2
 Cnoc Urray broch

DATE: 06/07/2022 | SCALE: 1:270,000 | DRAWN: SH
 MOD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd | CHECK: JP
 CRS: WGS 1984 UTM Zone 30N | APPROV:

open
 PART OF: SLR

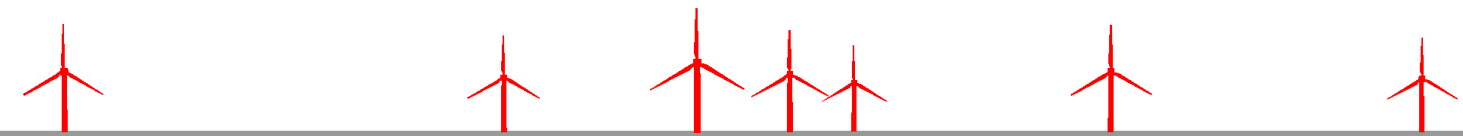
This image provides landscape and visual context only



Existing View

Extent of 53.5° planar panorama

Proposed Development (9.5km)

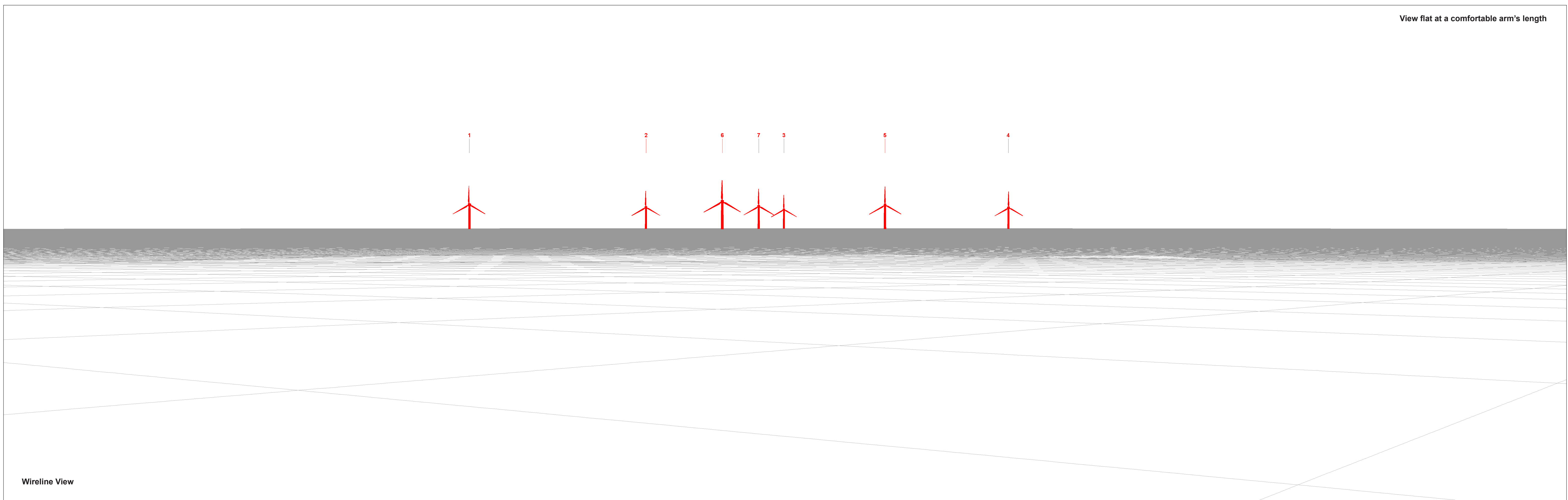


Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	298383 E 966300 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	25.1 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	325°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	9,513 m	Correct printed image size	820 x 130 mm	Date & time taken	10/11/2021 08:55

Figure 17.5b
Viewpoint 2: Cnoc Urray broch Panorama with Cumulative Wireline

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Wireline View

OS reference 298383 E 966300 N
Elevation 25.1 m AOD
Direction of view 325°
Nearest turbine 9,513 m

Horizontal field of view 53.5° (planar projection)
Principal distance 812.5 mm
Paper size 841 x 297 mm (half A1)
Correct printed image size 820 x 260 mm

Camera Canon EOS 5D Mark II
Lens Canon EF 50mm f/1.4
Camera height 1.5 m AGL
Date & time taken 10/11/2021 08:55

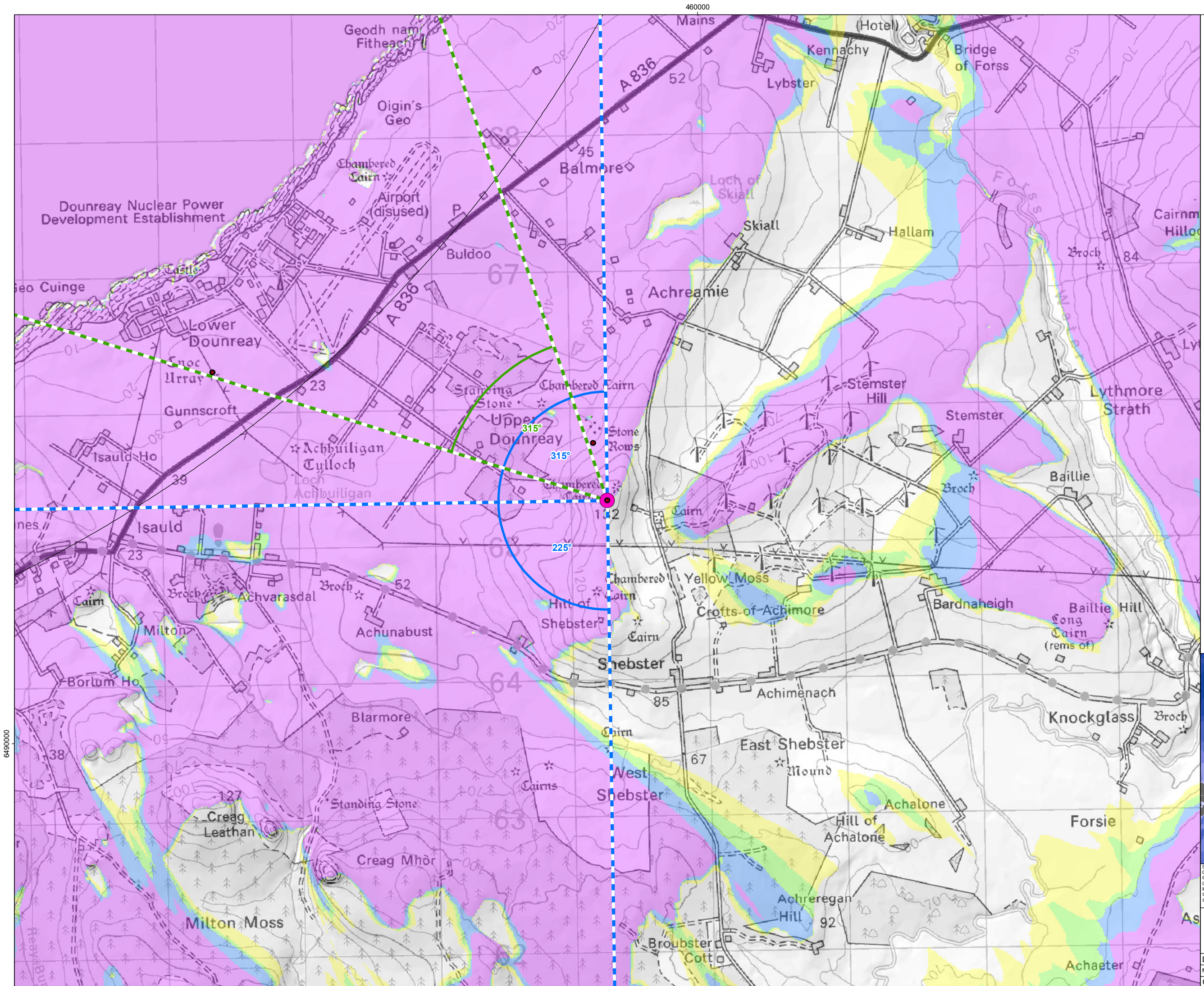
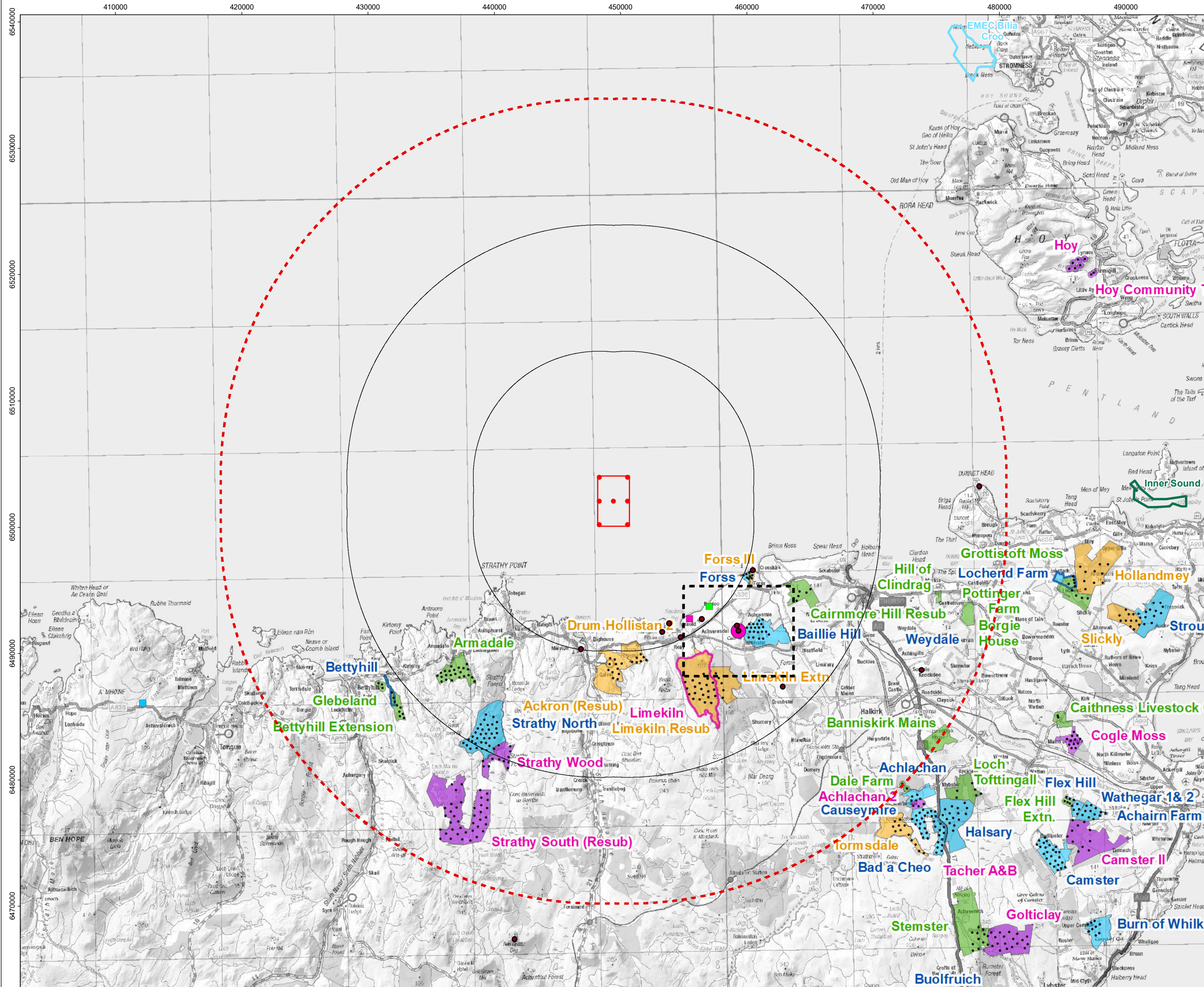
Figure 17.5c
Viewpoint 2: Cnoc Urray broch Wireline



Photomontage

OS reference	298383 E 966300 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	25.1 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	325°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	9,513 m	Correct printed image size	820 x 260 mm	Date & time taken	10/11/2021 08:55

Figure 17.5d
Viewpoint 2: Cnoc Urray broch Photomontage



Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Downreay Substation
- Downreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 DTM resolution: 10m
 Surface features: Excluded
 Earth curvature: Included

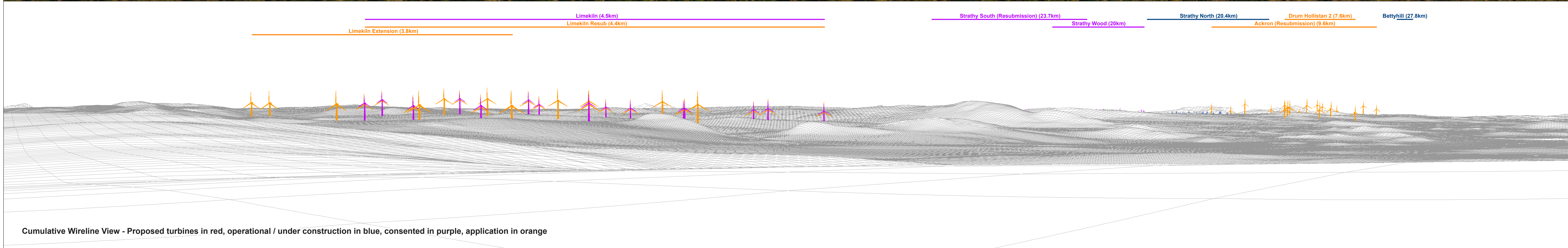
Figure 17-6a
 Cultural Heritage Viewpoint: 3
 Cnoc Freiceadain cairns

DATE: 06/07/2022 | SCALE: 1:270,000 | DRAWN: SH
 MKD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd | CHECK: JP
 CRS: WGS 1984 UTM Zone 30N | APPROV:

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 optimised environments
 PART OF: SLR



Existing View



OS reference	301266 E 965316 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	127.9 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	225°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	12,163 m	Correct printed image size	820 x 130 mm	Date & time taken	10/11/2021 11:40

Figure 17.6b
Viewpoint 3: Cnoc Freiceadain cairns Panorama with Cumulative Wireline (view 1 of 2)

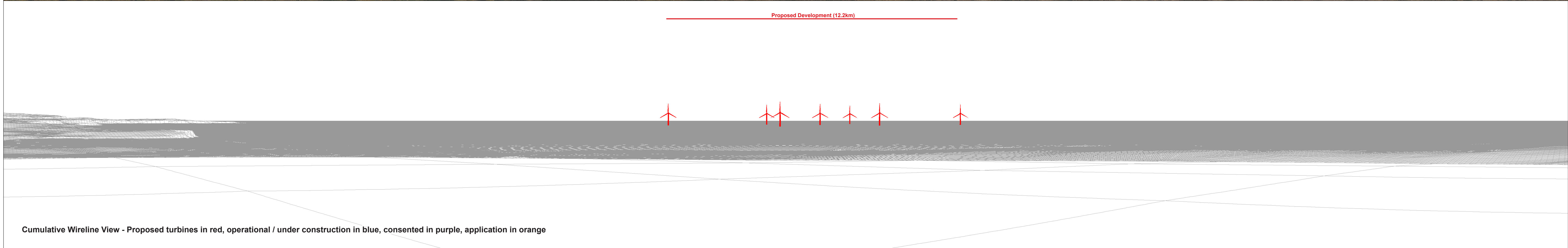
This image provides landscape and visual context only



Existing View

Extent of 53.5° planar panorama

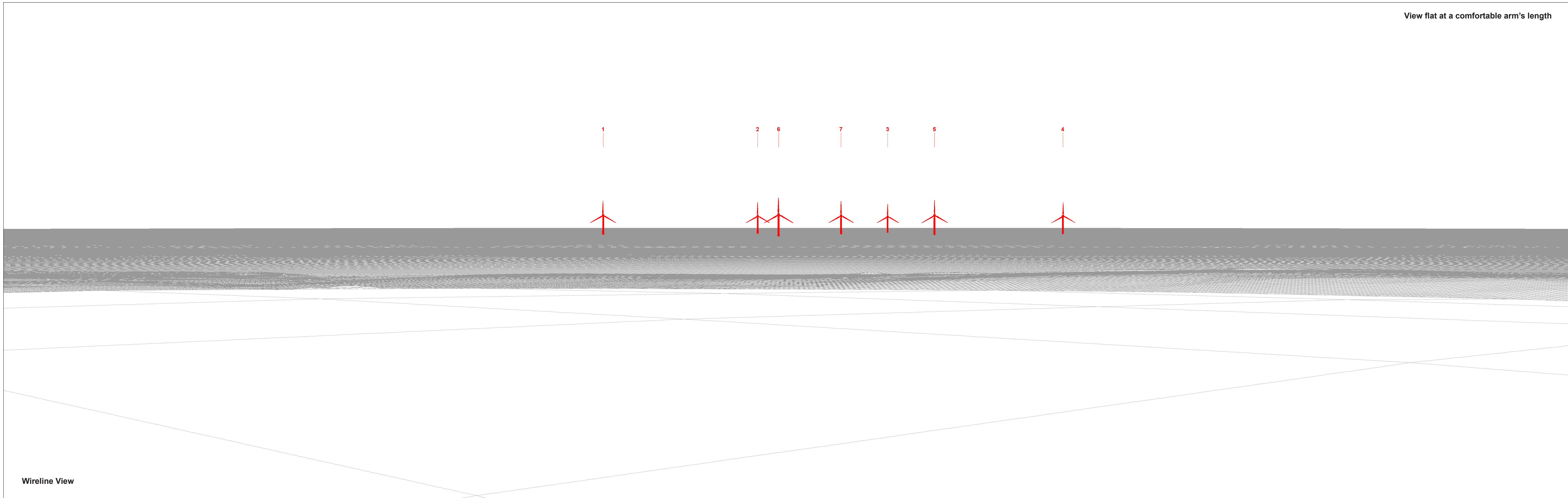
Proposed Development (12.2km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	301266 E 965316 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	127.9 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	12,163 m	Correct printed image size	820 x 130 mm	Date & time taken	10/11/2021 11:40

Figure 17.6c
Viewpoint 3: Cnoc Freiceadain cairns Panorama with Cumulative Wireline (view 2 of 2)



Wireline View

OS reference	301266 E 965316 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	127.9 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	12,163 m	Correct printed image size	820 x 260 mm	Date & time taken	10/11/2021 11:40

Figure 17.6d
Viewpoint 3: Cnoc Freiceadain cairns Wireline

View flat at a comfortable arm's length

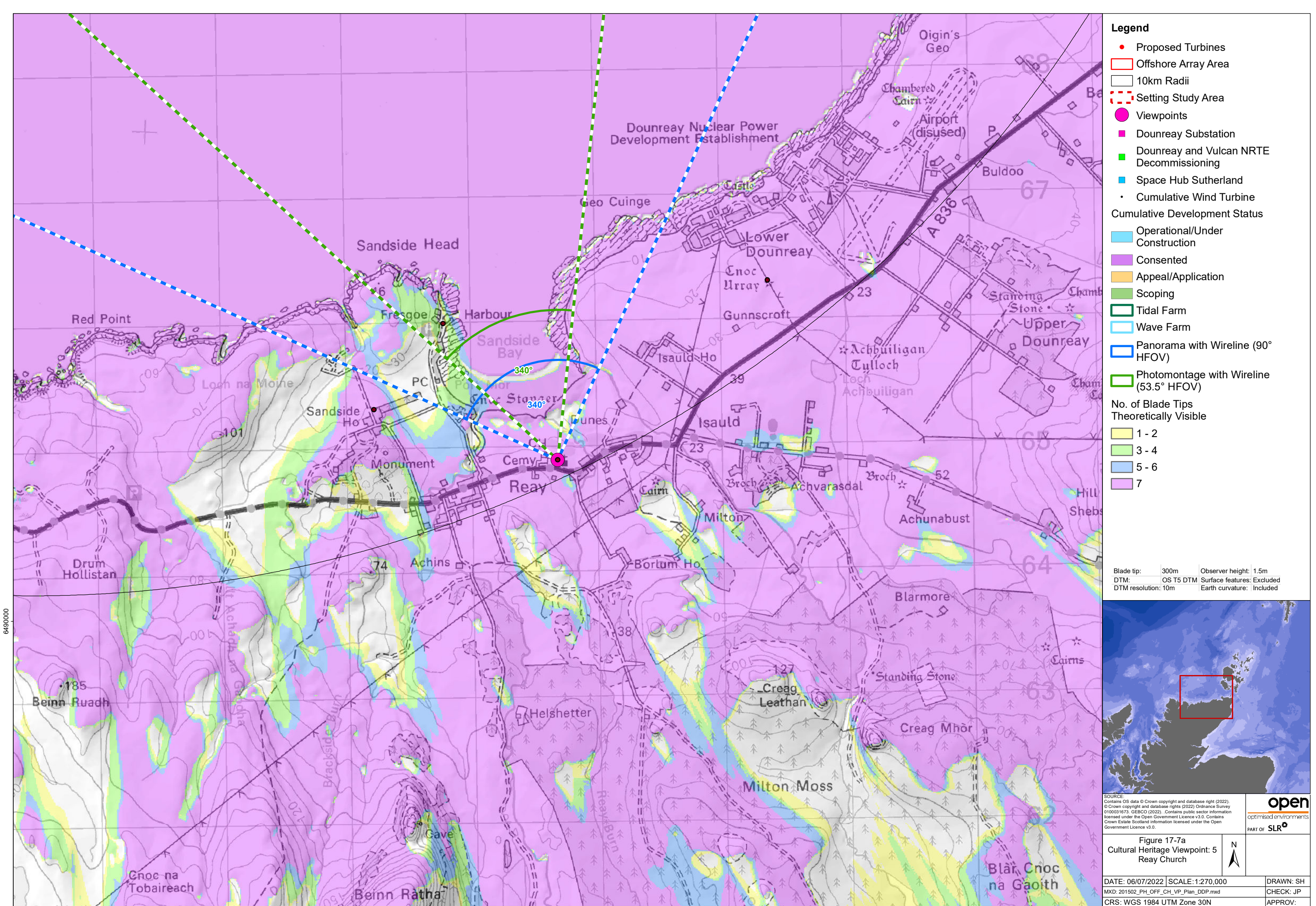
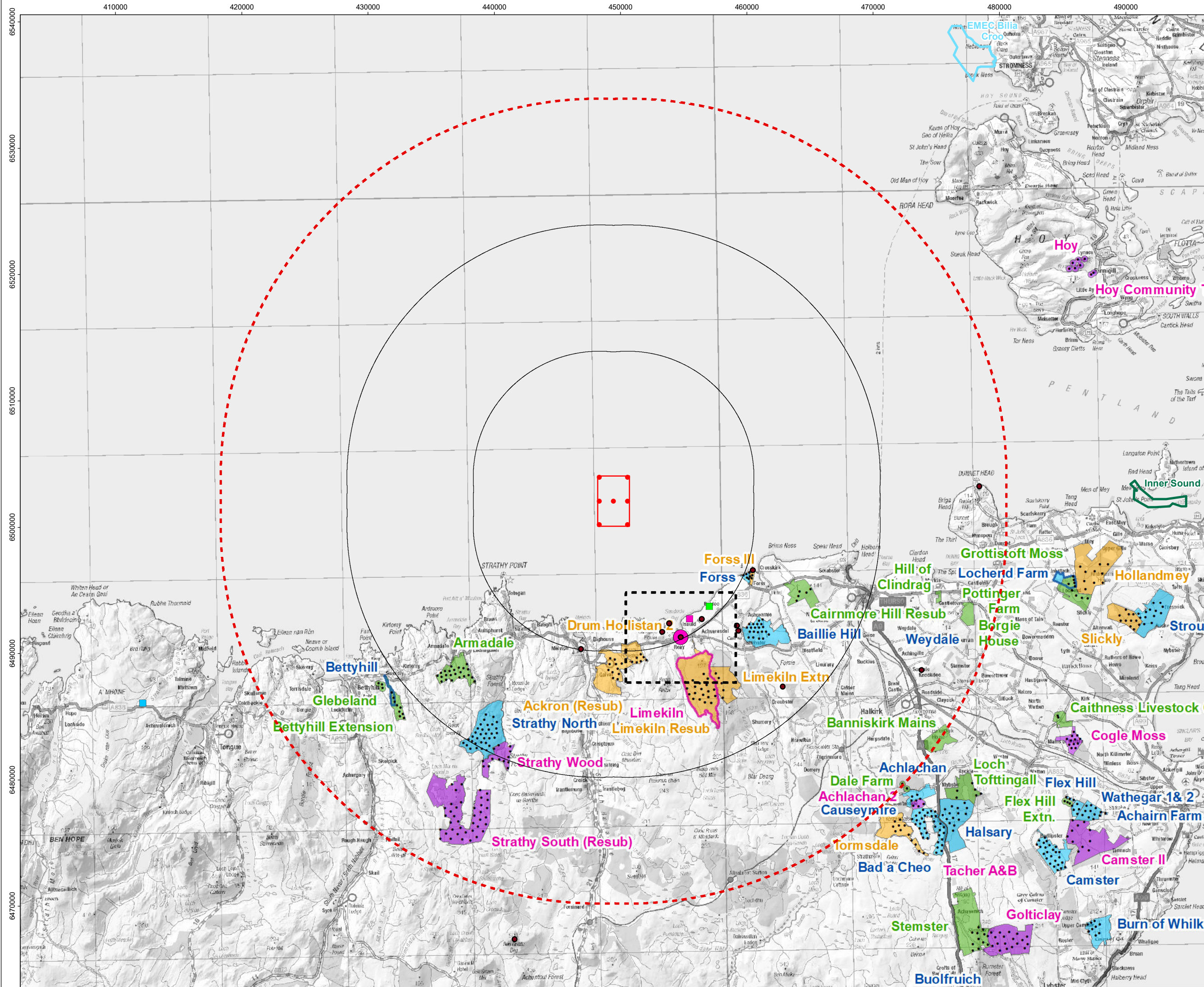


Photomontage

OS reference	301266 E 965316 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	127.9 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	12,163 m	Correct printed image size	820 x 260 mm	Date & time taken	10/11/2021 11:40

Figure 17.6e
Viewpoint 3: Cnoc Freiceadain cairns Photomontage

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Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 Surface features: Excluded
 DTM resolution: 10m
 Earth curvature: Included

Figure 17-7a
 Cultural Heritage Viewpoint: 5
 Reay Church

DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
 MOD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd CHECK: JP
 CRS: WGS 1984 UTM Zone 30N APPROV:

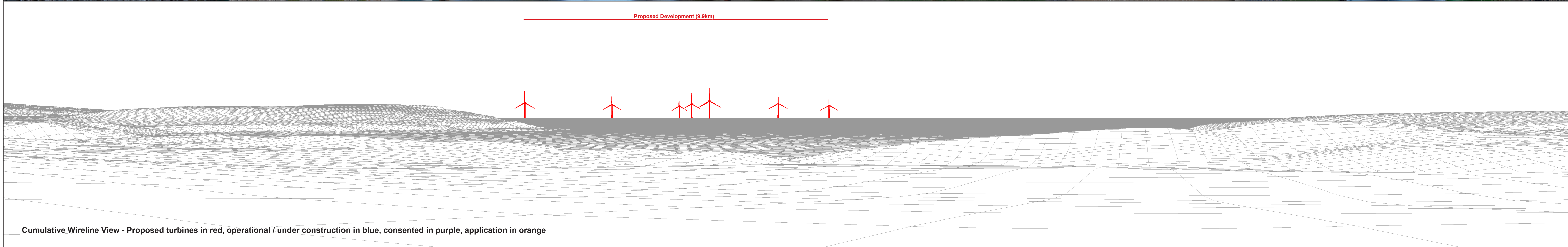
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Existing View

Extent of 53.5° planar panorama

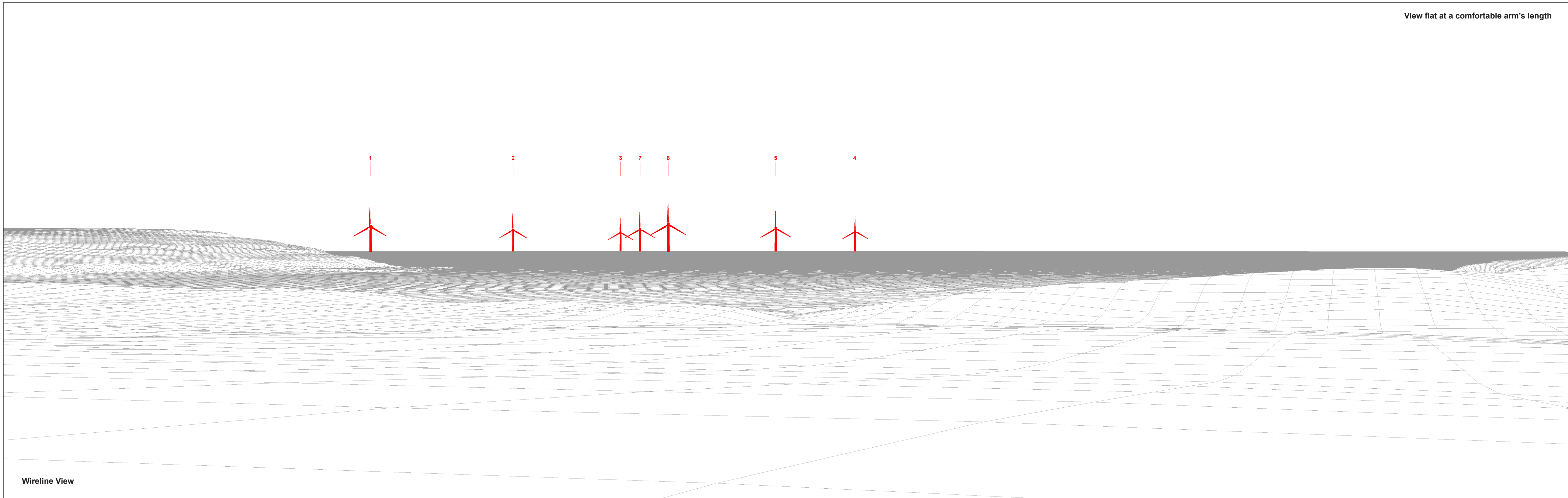
Proposed Development (9.9km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	296685 E 964888 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	20.4 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	340°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	9,857 m	Correct printed image size	820 x 130 mm	Date & time taken	10/11/2021 13:40

Figure 17.7b
Viewpoint 5: Reay Church Panorama with Cumulative Wireline



Wireline View

OS reference	296685 E 964888 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	20.4 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	340°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	9,857 m	Correct printed image size	820 x 260 mm	Date & time taken	10/11/2021 13:40

Figure 17.7c
Viewpoint 5: Reay Church Wireline
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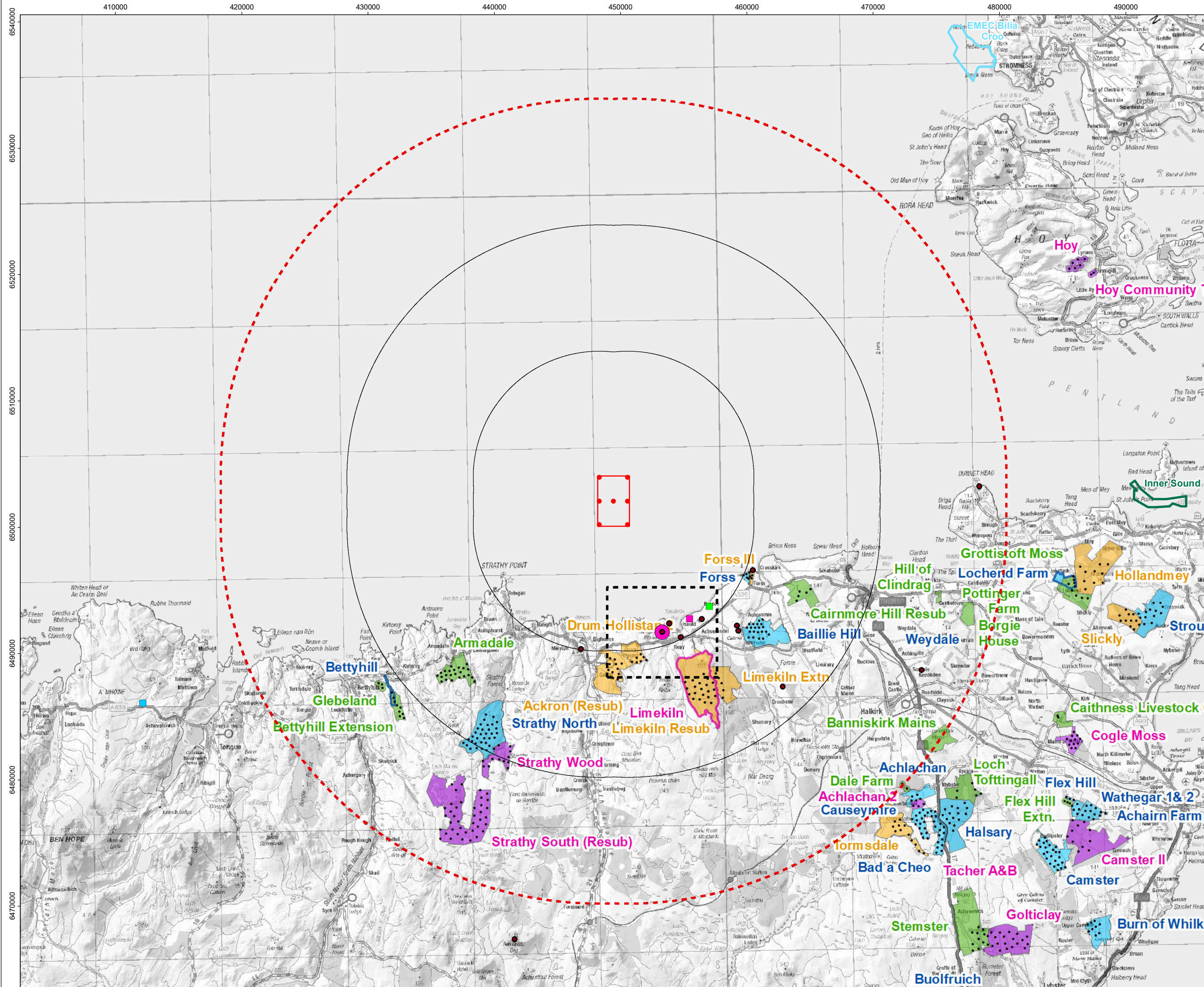
Photomontage

OS reference 296685 E 964888 N
Elevation 20.4 m AOD
Direction of view 340°
Nearest turbine 9,857 m

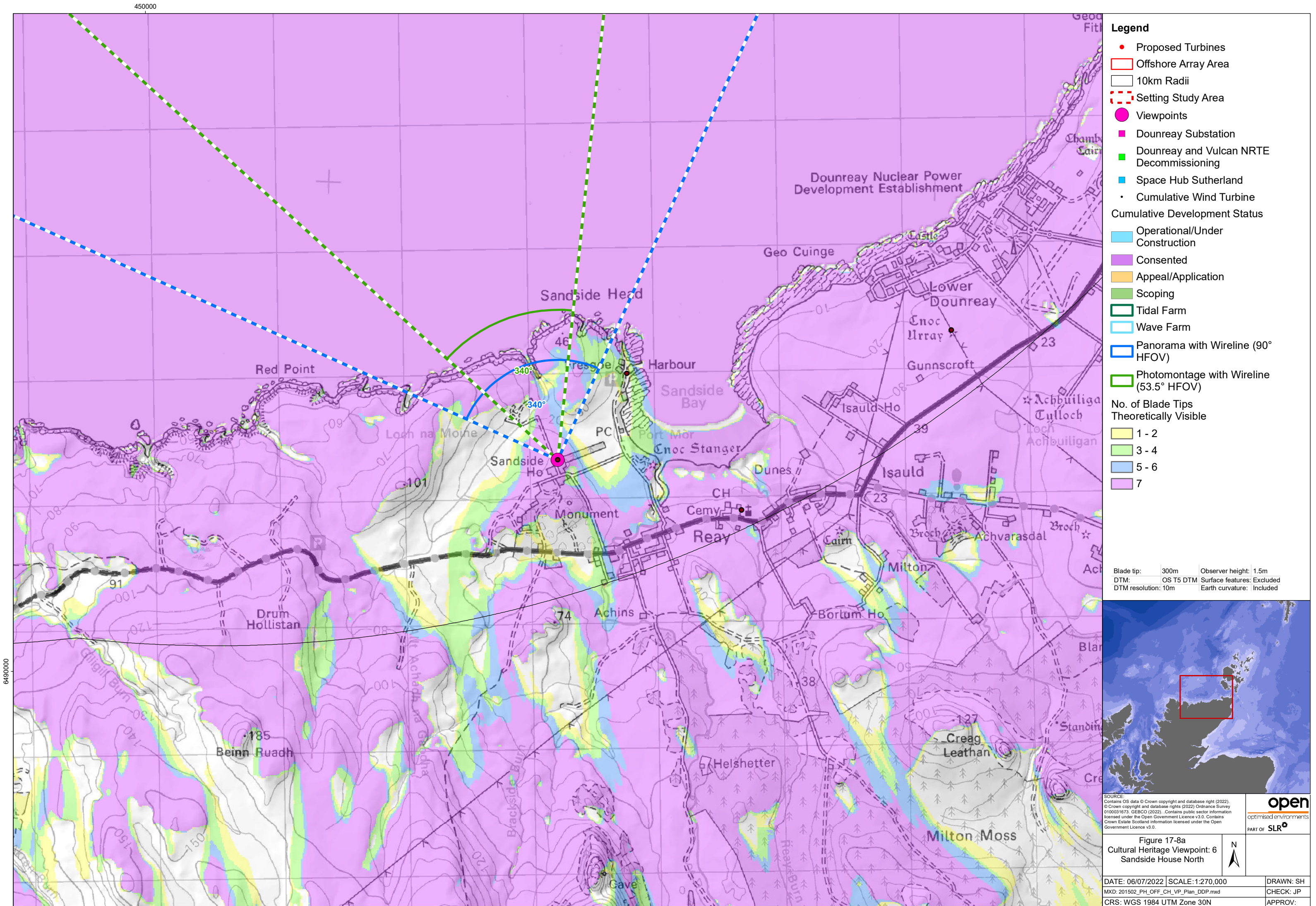
Horizontal field of view 53.5° (planar projection)
Principal distance 812.5 mm
Paper size 841 x 297 mm (half A1)
Correct printed image size 820 x 260 mm

Camera Canon EOS 5D Mark II
Lens Canon EF 50mm f/1.4
Camera height 1.5 m AGL
Date & time taken 10/11/2021 13:40

Figure 17.7d
Viewpoint 5: Reay Church Photomontage



Scale: 1:270,000



Scale: 1:25,000

Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounray Substation
- Dounray and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 Surface features: Excluded
 DTM resolution: 10m
 Earth curvature: Included

Figure 17-8a
 Cultural Heritage Viewpoint: 6
 Sandside House North

DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
 MOD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd CHECK: JP
 CRS: WGS 1984 UTM Zone 30N APPROV:

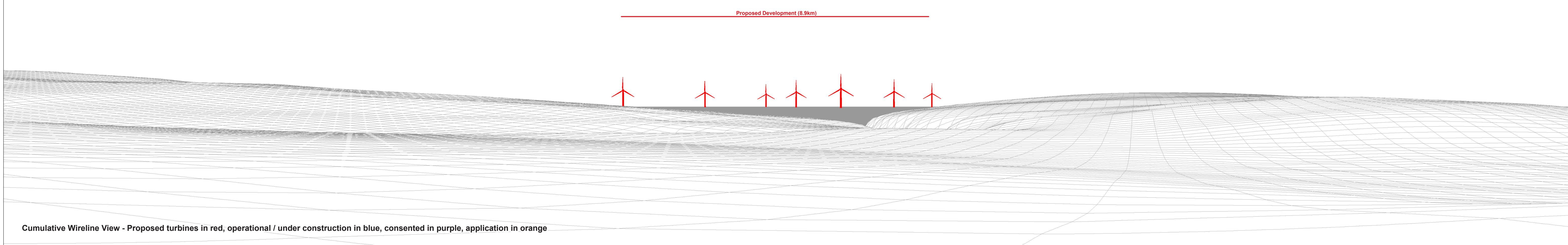
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Existing View

Extent of 53.5° planar panorama

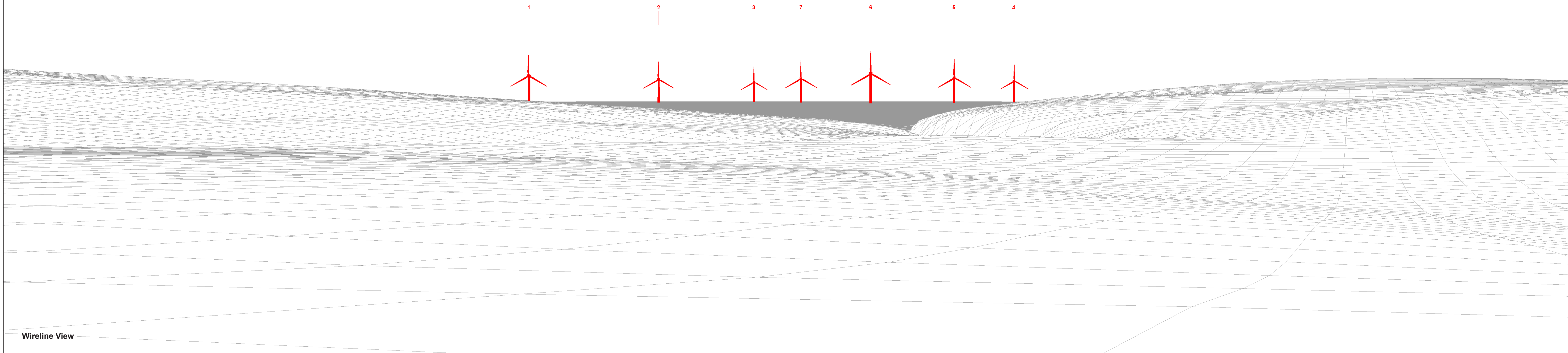
Proposed Development (8.9km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	295222 E 965309 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	32.5 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	340°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	8,945 m	Correct printed image size	820 x 130 mm	Date & time taken	10/11/2021 09:50

Figure 17.8b
Viewpoint 6: Sandside House North Panorama with Cumulative Wireline



Wireline View

Figure 17.8c
Viewpoint 6: Sandside House North Wireline

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View flat at a comfortable arm's length

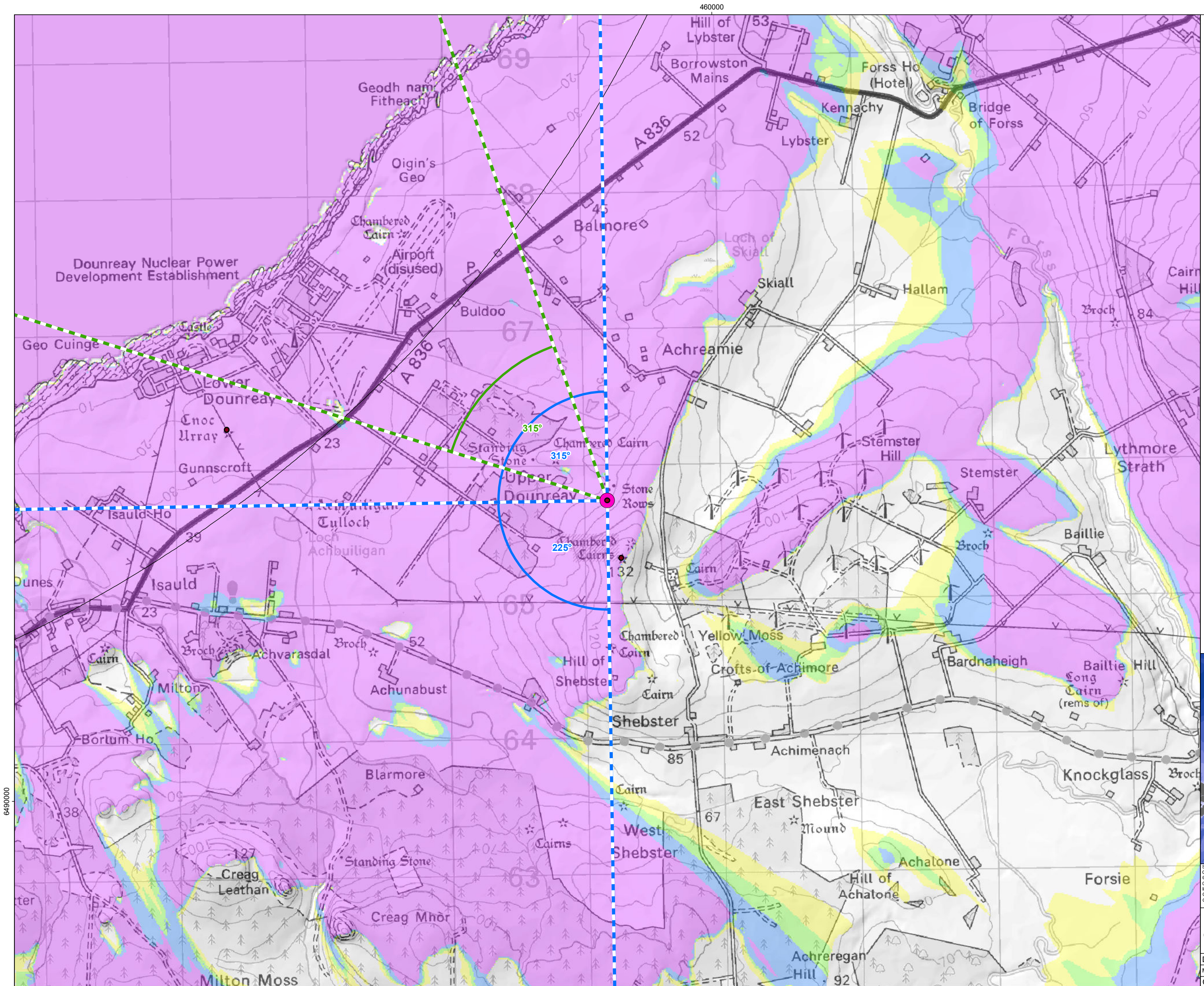
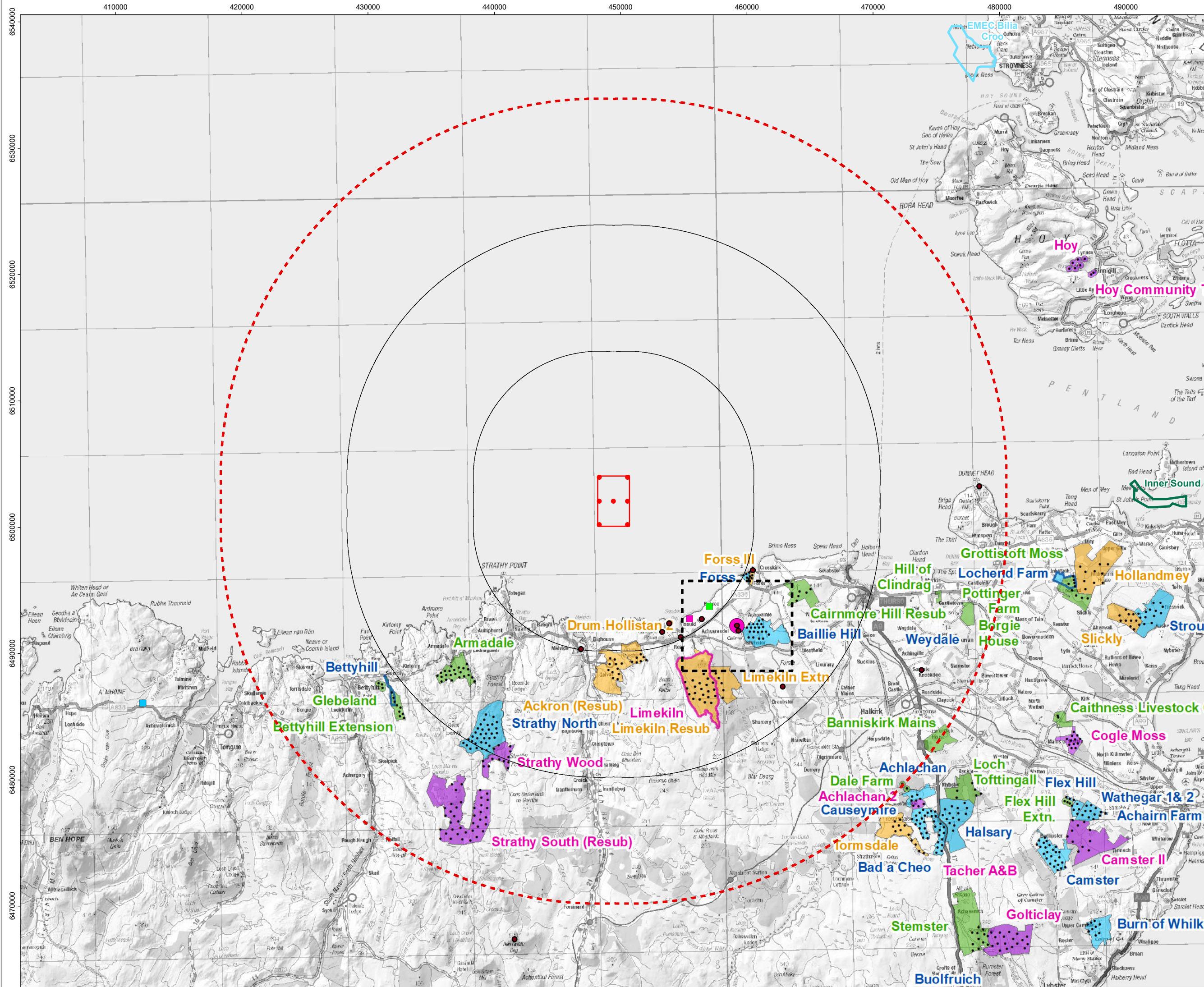


Photomontage

OS reference	295222 E 965309 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	32.5 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	340°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	8,945 m	Correct printed image size	820 x 260 mm	Date & time taken	10/11/2021 09:50

Figure 17.8d
Viewpoint 6: Sandside House North Photomontage

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Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 DTM: OS T5 DTM
 DTM resolution: 10m

Observer height: 1.5m
 Surface features: Excluded
 Earth curvature: Included

Figure 17-9a
 Cultural Heritage Viewpoint: 7
 Creag Bheac Mhor stone rows

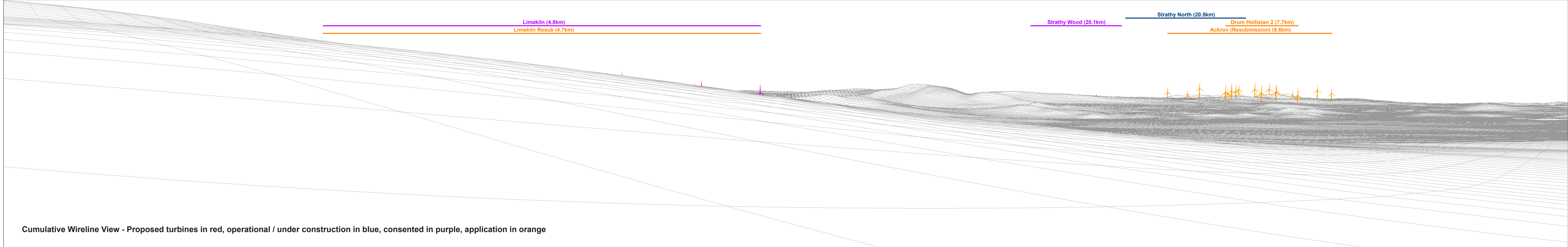
DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
 MOD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd CHECK: JP
 CRS: WGS 1984 UTM Zone 30N APPROV:

open
 optimised environments
 PART OF: SLR

This image provides landscape and visual context only



Existing View



OS reference	301168 E 965739 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	82.2 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	225°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	11,798 m	Correct printed image size	820 x 130 mm	Date & time taken	13/04/2021 14:25

Figure 17.9b
Viewpoint 7: Creag Bhreac Mhor stone rows Panorama with Cumulative Wireline (view 1 of 2)

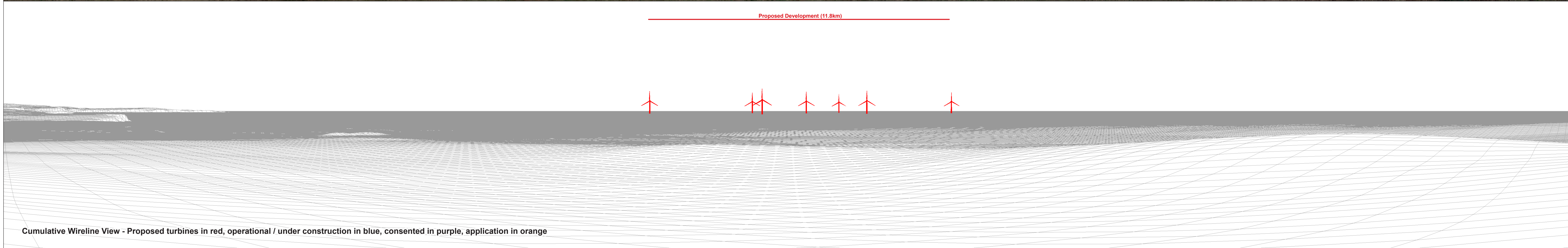
This image provides landscape and visual context only



Existing View

Extent of 53.5° planar panorama

Proposed Development (11.8km)

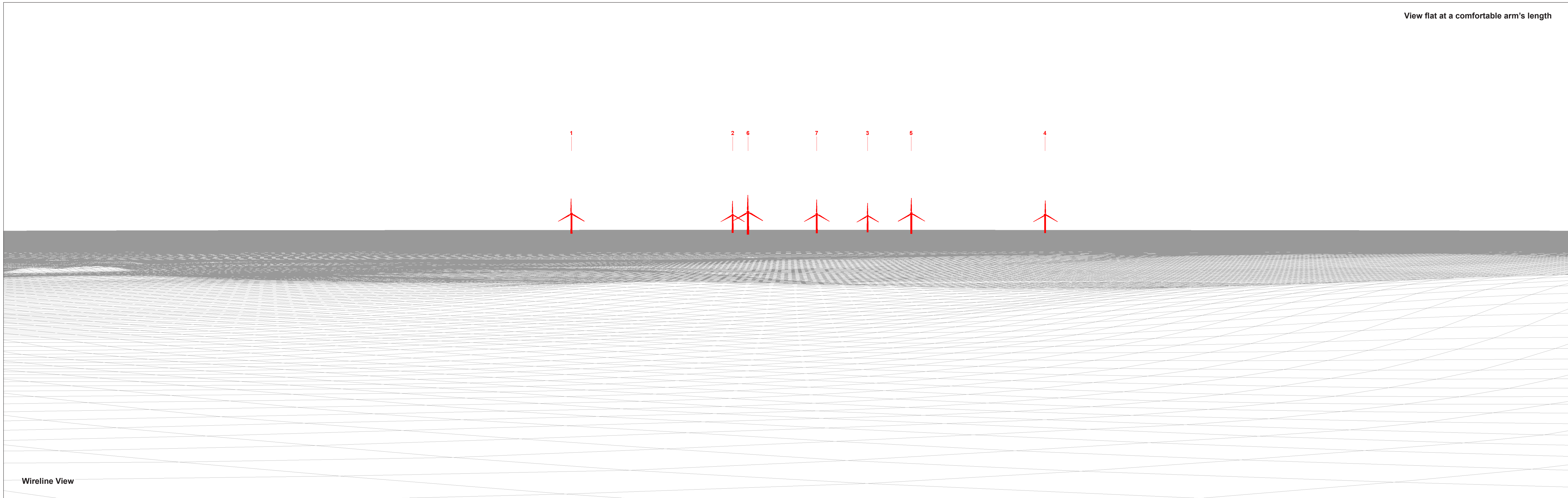


Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	301168 E 965739 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	82.2 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	11,798 m	Correct printed image size	820 x 130 mm	Date & time taken	13/04/2021 14:25

Figure 17.9c
Viewpoint 7: Creag Bhreac Mhor stone rows Panorama with Cumulative Wireline (view 2 of 2)

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Wireline View

OS reference	301168 E 965739 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	82.2 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	11,798 m	Correct printed image size	820 x 260 mm	Date & time taken	13/04/2021 14:25

Figure 17.9d
Viewpoint 7: Creag Bhreac Mhor stone rows Wireline

View flat at a comfortable arm's length

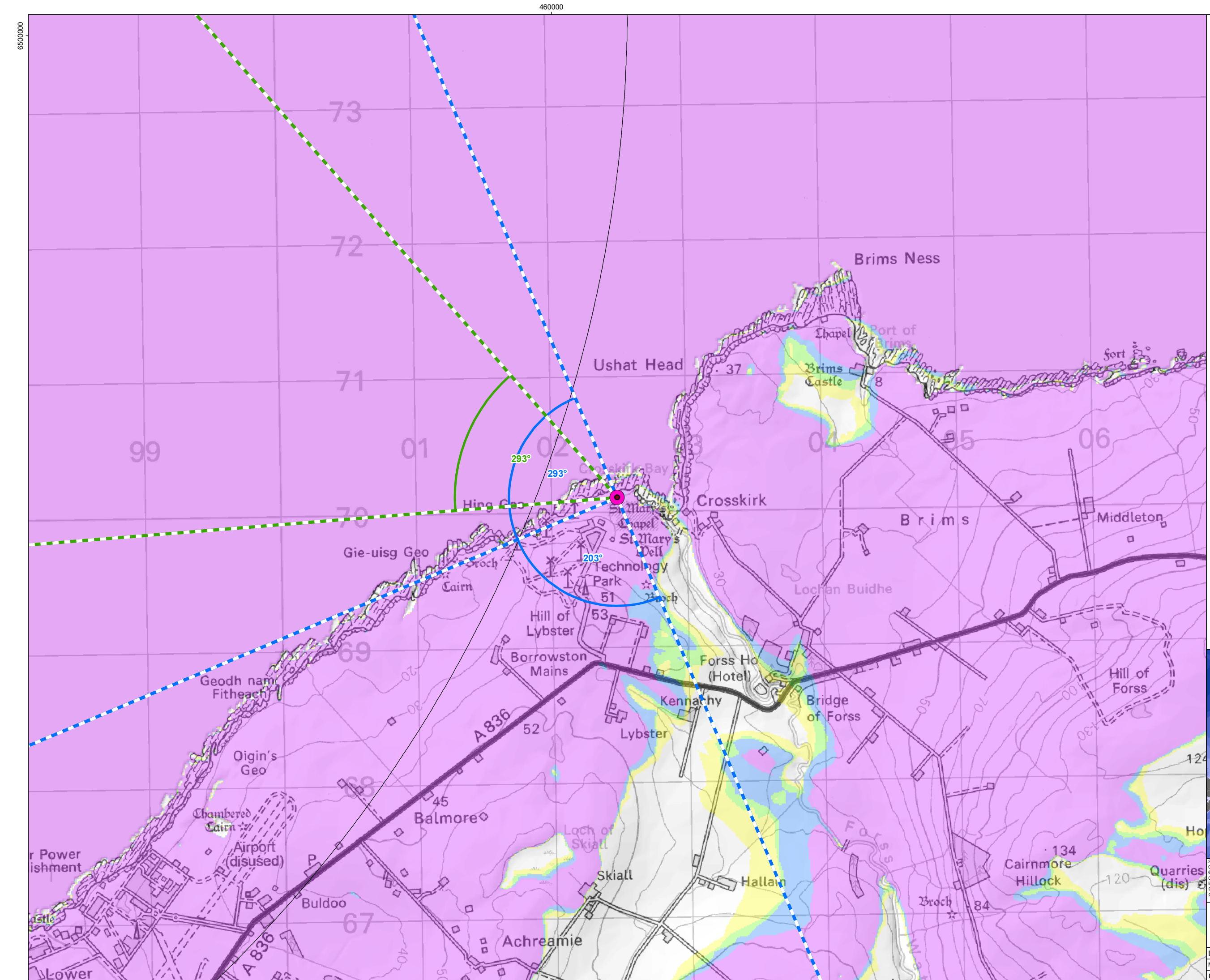
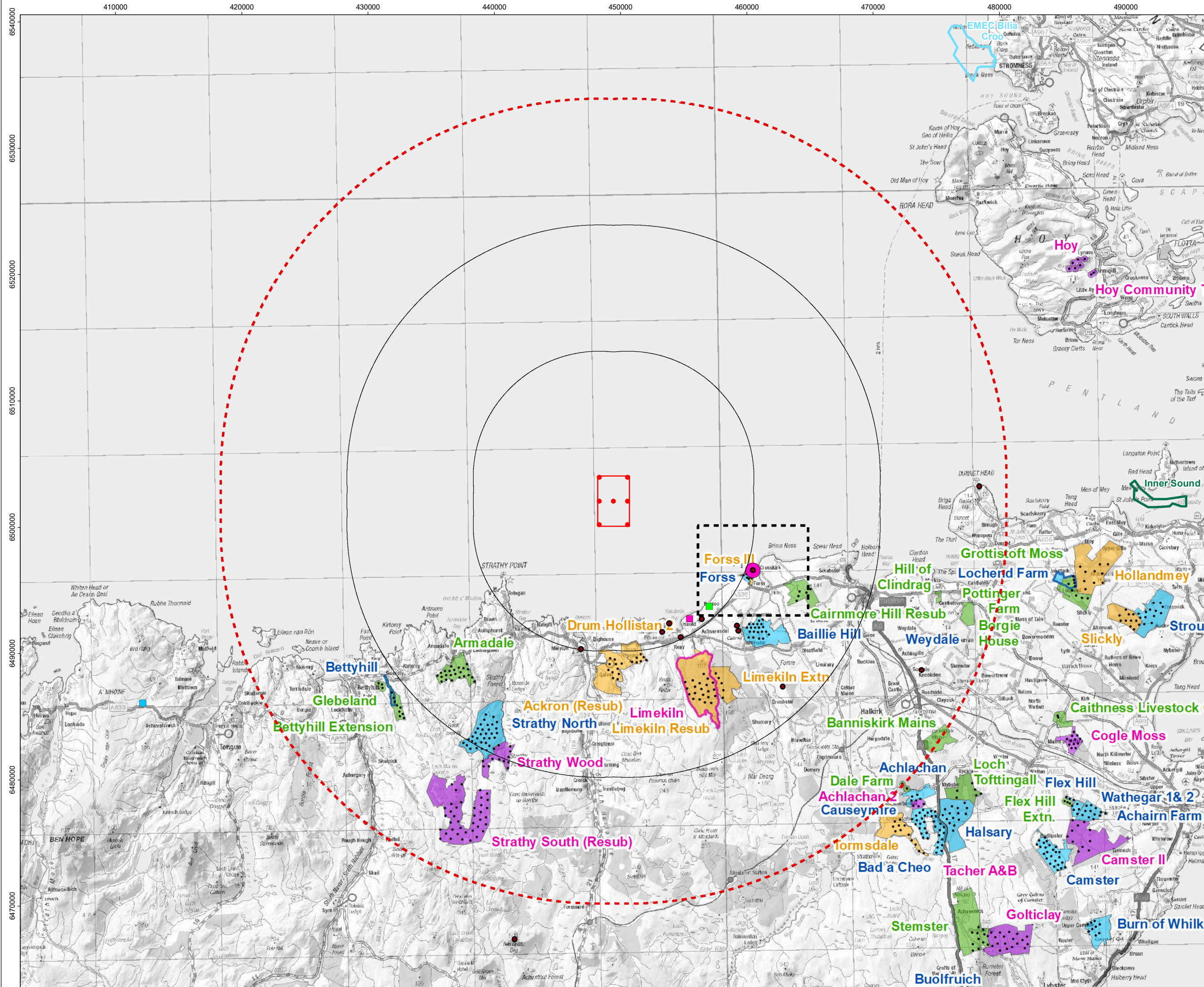


Photomontage

OS reference	301168 E 965739 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	82.2 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	315°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	11,798 m	Correct printed image size	820 x 260 mm	Date & time taken	13/04/2021 14:25

Figure 17.9e
Viewpoint 7: Creag Bhreac Mhor stone rows Photomontage

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Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 Surface features: Excluded
 DTM resolution: 10m
 Earth curvature: Included

Figure 17-10a
 Cultural Heritage Viewpoint: 8
 St Mary's Chapel, Forss

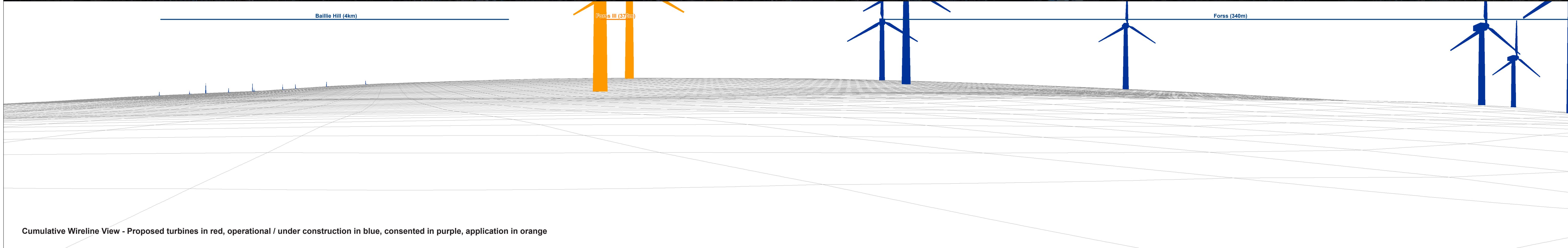
DATE: 06/07/2022 | SCALE: 1:270,000 | DRAWN: SH
 MKD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd | CHECK: JP
 CRS: WGS 1984 UTM Zone 30N | APPROV:

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This image provides landscape and visual context only



Existing View



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	302487 E 970105 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	15.3 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	203°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	10,564 m	Correct printed image size	820 x 130 mm	Date & time taken	13/04/2021 14:25

Figure 17.10b
Viewpoint 8: St Mary's Chapel, Forss Panorama with Cumulative Wireline (view 1 of 2)

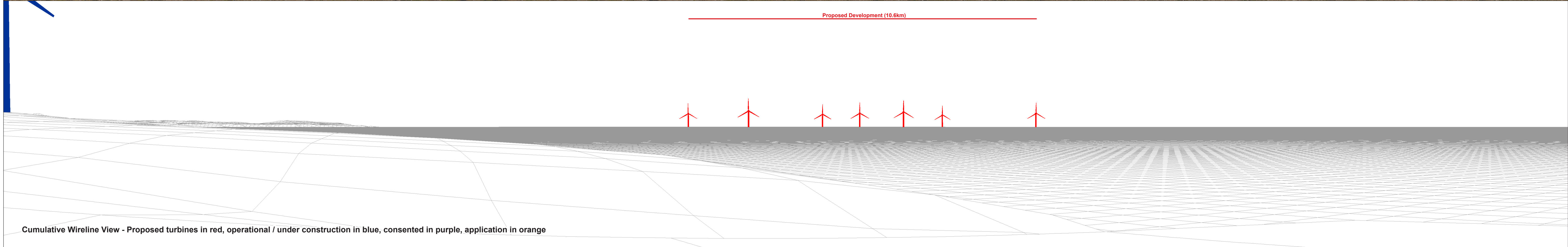
This image provides landscape and visual context only



Existing View

Extent of 53.5° planar panorama

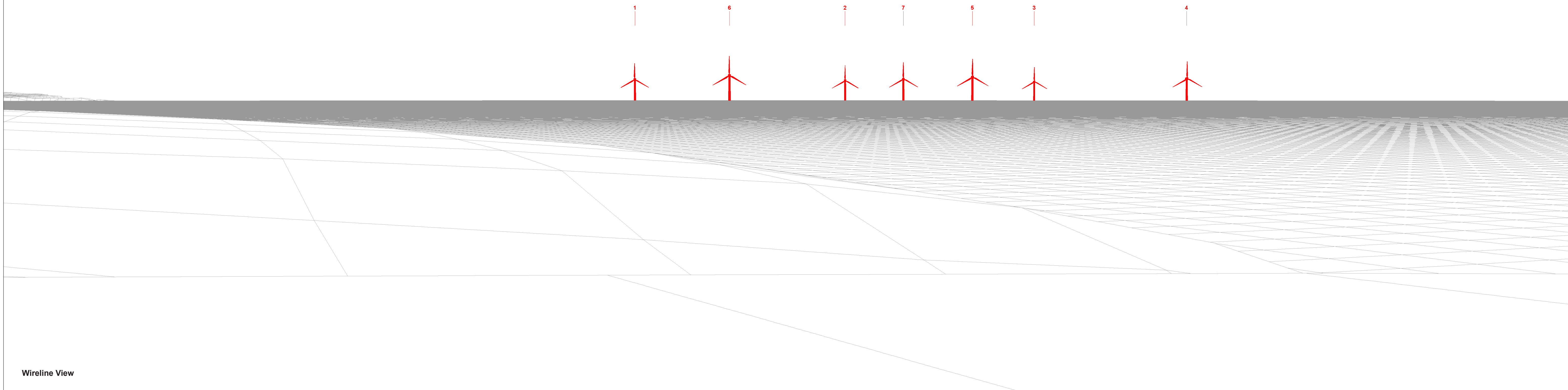
Proposed Development (10.6km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	302487 E 970105 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	15.3 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	293°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	10,564 m	Correct printed image size	820 x 130 mm	Date & time taken	13/04/2021 14:25

Figure 17.10c
Viewpoint 8: St Mary's Chapel, Forss Panorama with Cumulative Wireline (view 2 of 2)



Wireline View

OS reference	302487 E 970105 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	15.3 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	293°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	10,564 m	Correct printed image size	820 x 260 mm	Date & time taken	13/04/2021 14:25

Figure 17.10d
Viewpoint 8: St Mary's Chapel, Forss Wireline



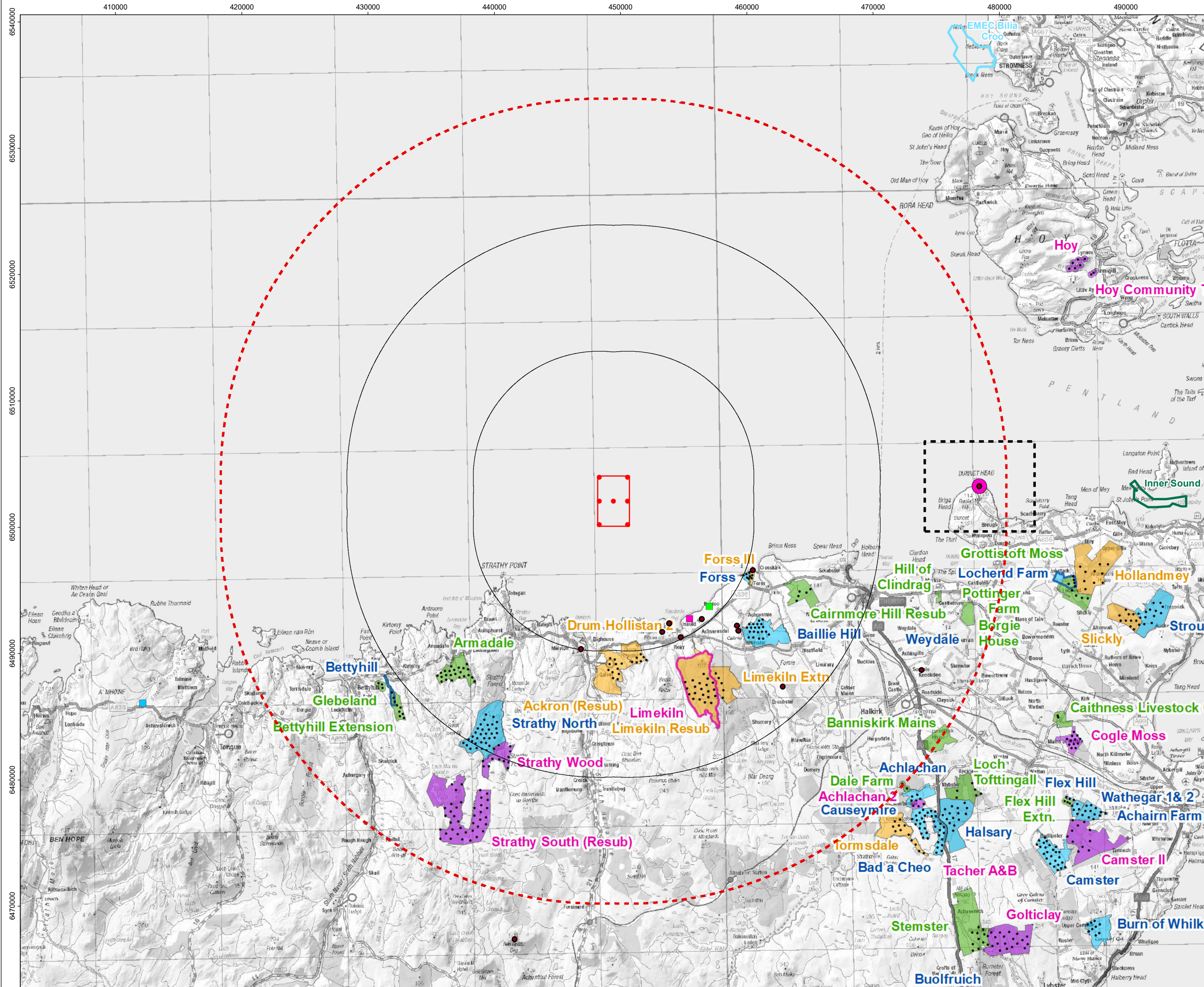
Photomontage

OS reference 302487 E 970105 N
Elevation 15.3 m AOD
Direction of view 293°
Nearest turbine 10,564 m

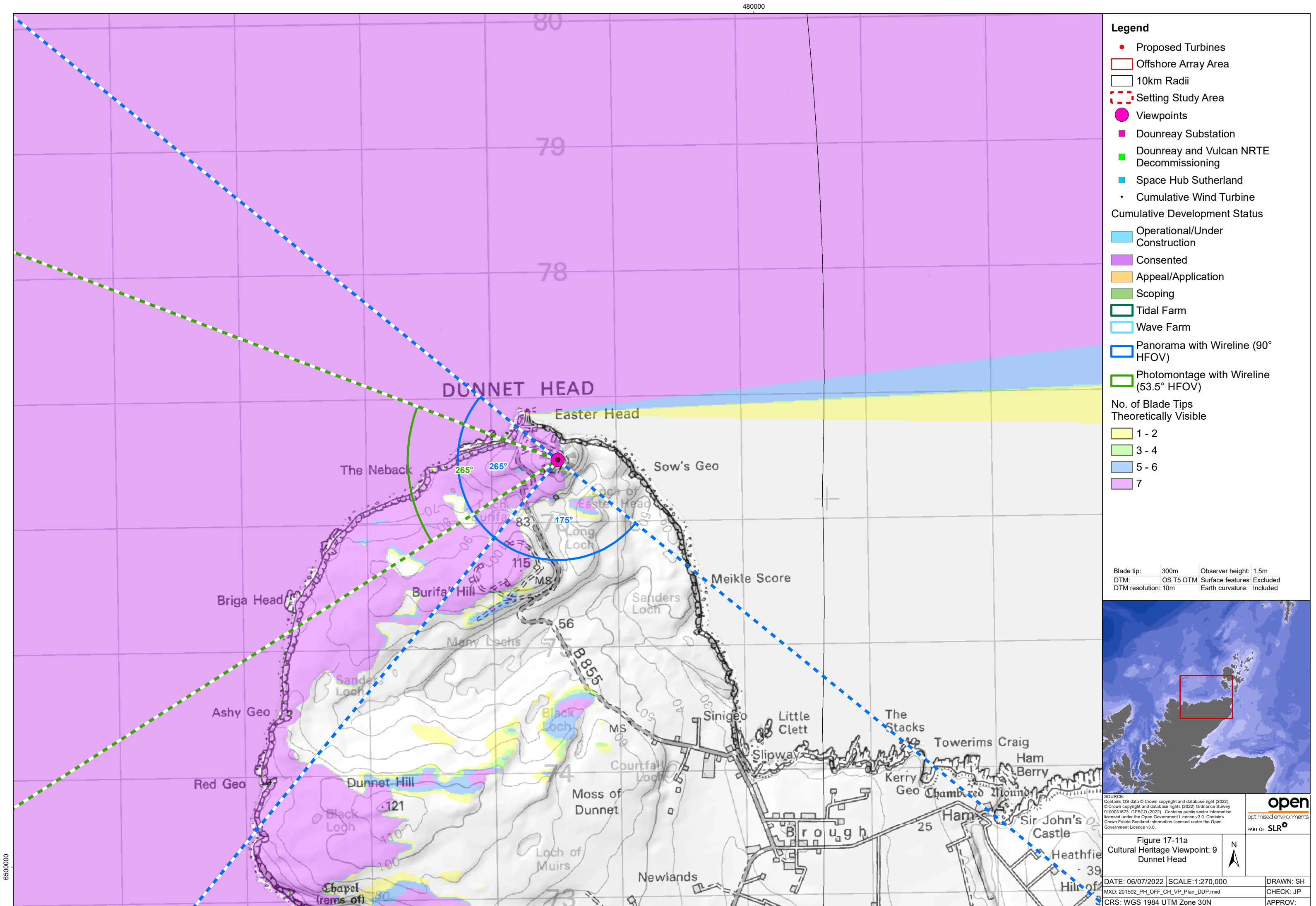
Horizontal field of view 53.5° (planar projection)
Principal distance 812.5 mm
Paper size 841 x 297 mm (half A1)
Correct printed image size 820 x 260 mm

Camera Canon EOS 5D Mark II
Lens Canon EF 50mm f/1.4
Camera height 1.5 m AGL
Date & time taken 13/04/2021 14:25

Figure 17.10e
Viewpoint 8: St Mary's Chapel, Forss Photomontage



Scale: 1:270,000



Scale: 1:25,000

Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Downray Substation
- Downray and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)
- Photomontage with Wireline (53.5° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 Observer height: 1.5m
 DTM: OS T5 DTM
 Surface features: Excluded
 DTM resolution: 10m
 Earth curvature: Included

Figure 17-11a
 Cultural Heritage Viewpoint: 9
 Dunnet Head

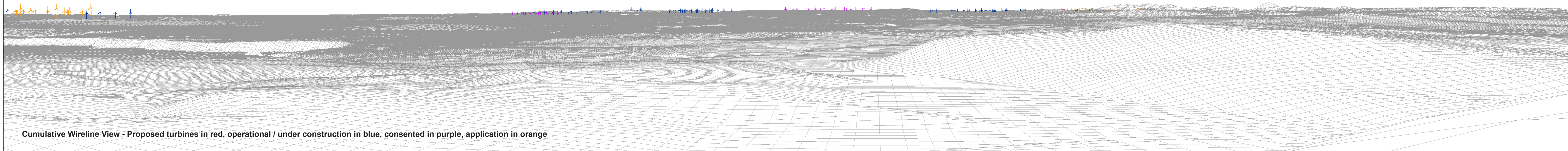
DATE: 06/07/2022 | SCALE: 1:270,000 | DRAWN: SH
 MKD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd | CHECK: JP
 CRS: WGS 1984 UTM Zone 30N | APPROV:

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Existing View



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	320532 E 976496 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	125.6 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	175°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	27,884 m	Correct printed image size	820 x 130 mm	Date & time taken	12/04/2021 14:55

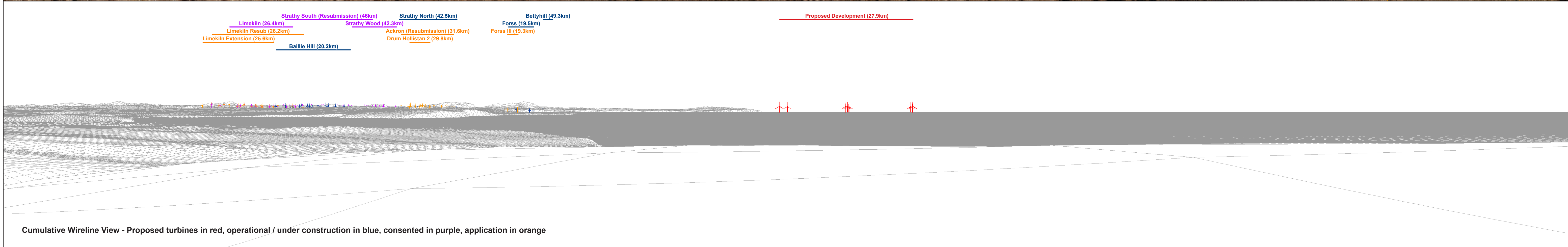
Figure 17.11b
Viewpoint 9: Dunnet Head Panorama with Cumulative Wireline (view 1 of 2)

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Existing View

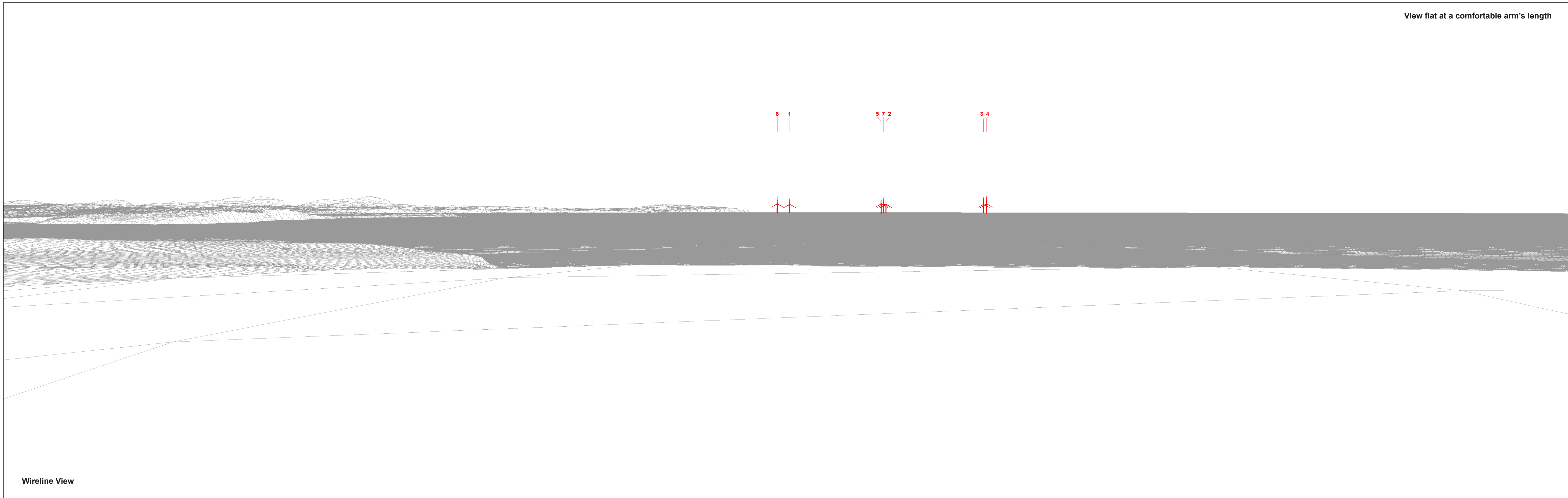
Extent of 53.5° planar panorama



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	320532 E 976496 N	Horizontal field of view	90° (cylindrical projection)	Camera	Canon EOS 5D Mark II
Elevation	125.6 m AOD	Principal distance	522 mm	Lens	Canon EF 50mm f/1.4
Direction of view	265°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	27,884 m	Correct printed image size	820 x 130 mm	Date & time taken	12/04/2021 14:55

Figure 17.11c
Viewpoint 9: Dunnet Head Panorama with Cumulative Wireline (view 2 of 2)



Wireline View

OS reference	320532 E 976496 N	Horizontal field of view	53.5° (planar projection)	Camera	Canon EOS 5D Mark II
Elevation	125.6 m AOD	Principal distance	812.5 mm	Lens	Canon EF 50mm f/1.4
Direction of view	265°	Paper size	841 x 297 mm (half A1)	Camera height	1.5 m AGL
Nearest turbine	27,884 m	Correct printed image size	820 x 260 mm	Date & time taken	12/04/2021 14:55

Figure 17.11d
Viewpoint 9: Dunnet Head Wireline

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View flat at a comfortable arm's length



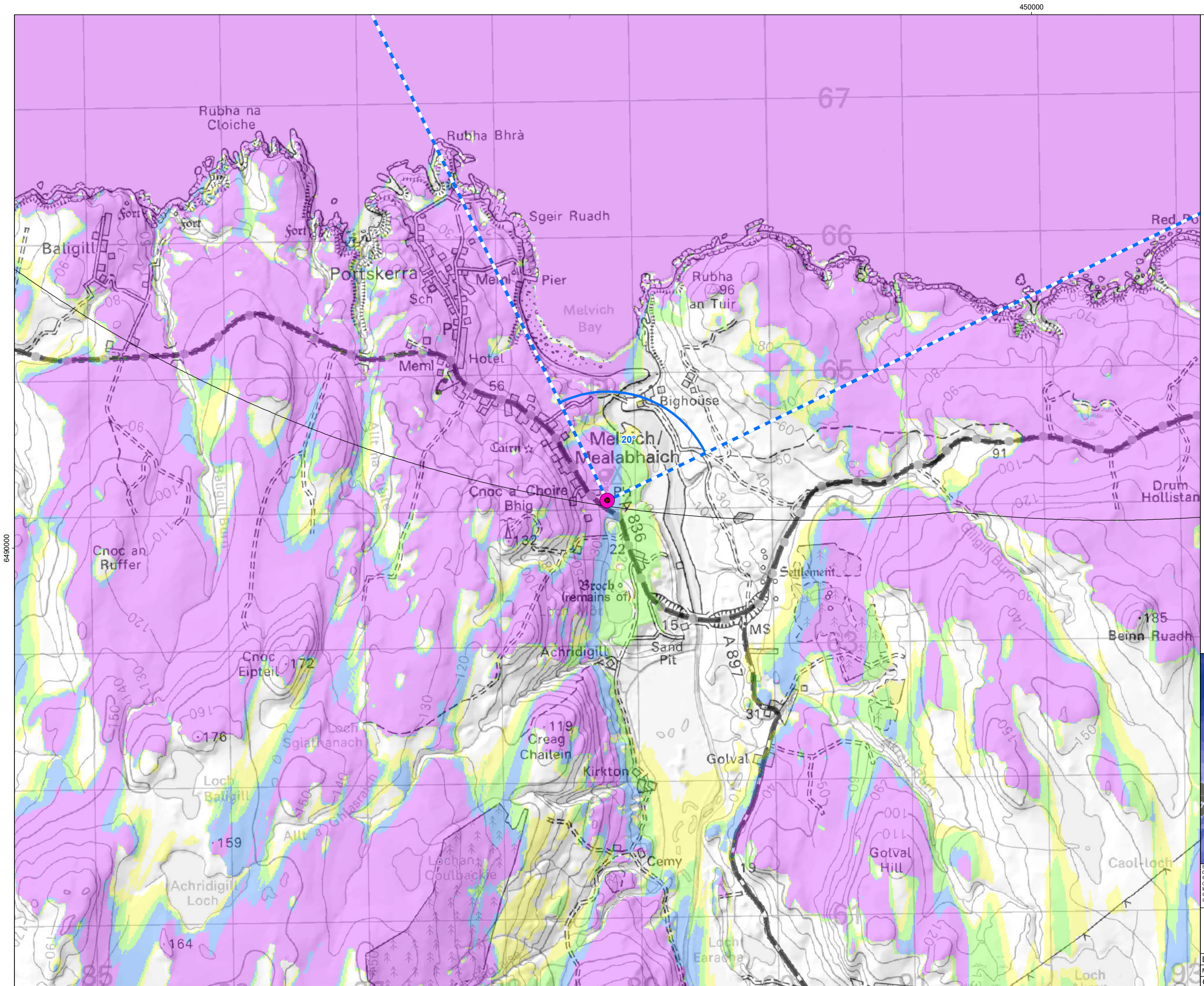
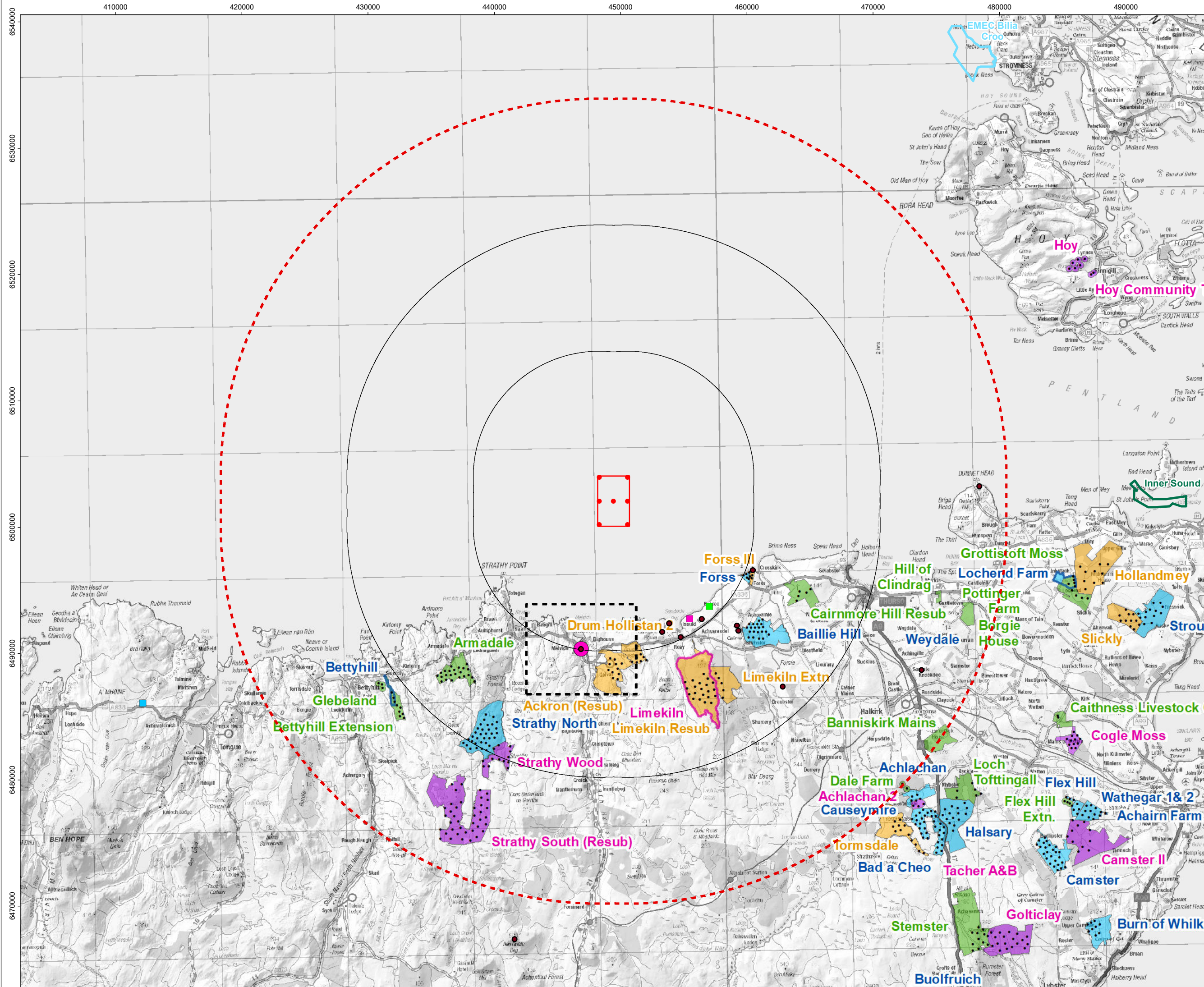
Photomontage

OS reference 320532 E 976496 N
Elevation 125.6 m AOD
Direction of view 265°
Nearest turbine 27,884 m

Horizontal field of view 53.5° (planar projection)
Principal distance 812.5 mm
Paper size 841 x 297 mm (half A1)
Correct printed image size 820 x 260 mm

Camera Canon EOS 5D Mark II
Lens Canon EF 50mm f/1.4
Camera height 1.5 m AGL
Date & time taken 12/04/2021 14:55

Figure 17.11e
Viewpoint 9: Dunnet Head Photomontage



Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Downray Substation
- Downray and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 DTM: OS T5 DTM
 DTM resolution: 10m

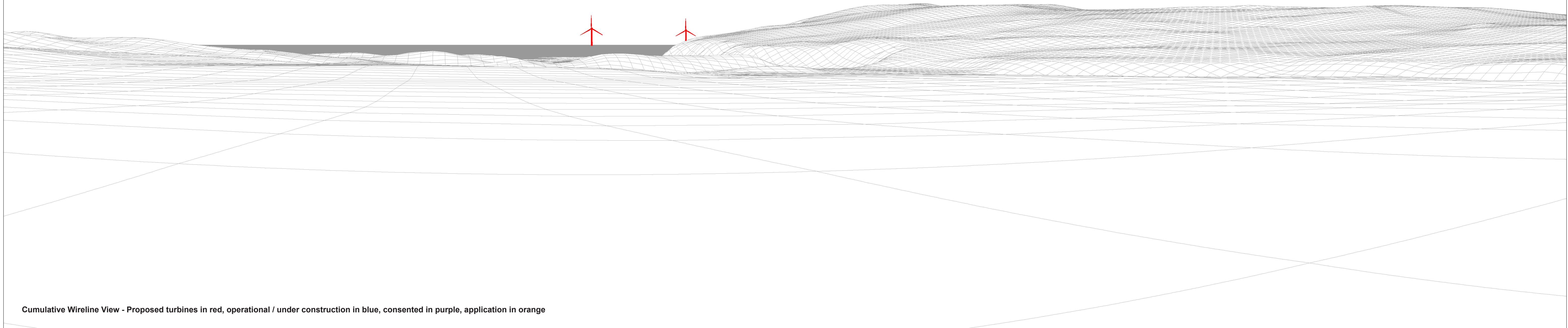
Observer height: 1.5m
 Surface features: Excluded
 Earth curvature: Included

Figure 17-12a
 Cultural Heritage Viewpoint: 10
 Halladale Inn

DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
 MKD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd CHECK: JP
 CRS: WGS 1984 UTM Zone 30N APPROV:

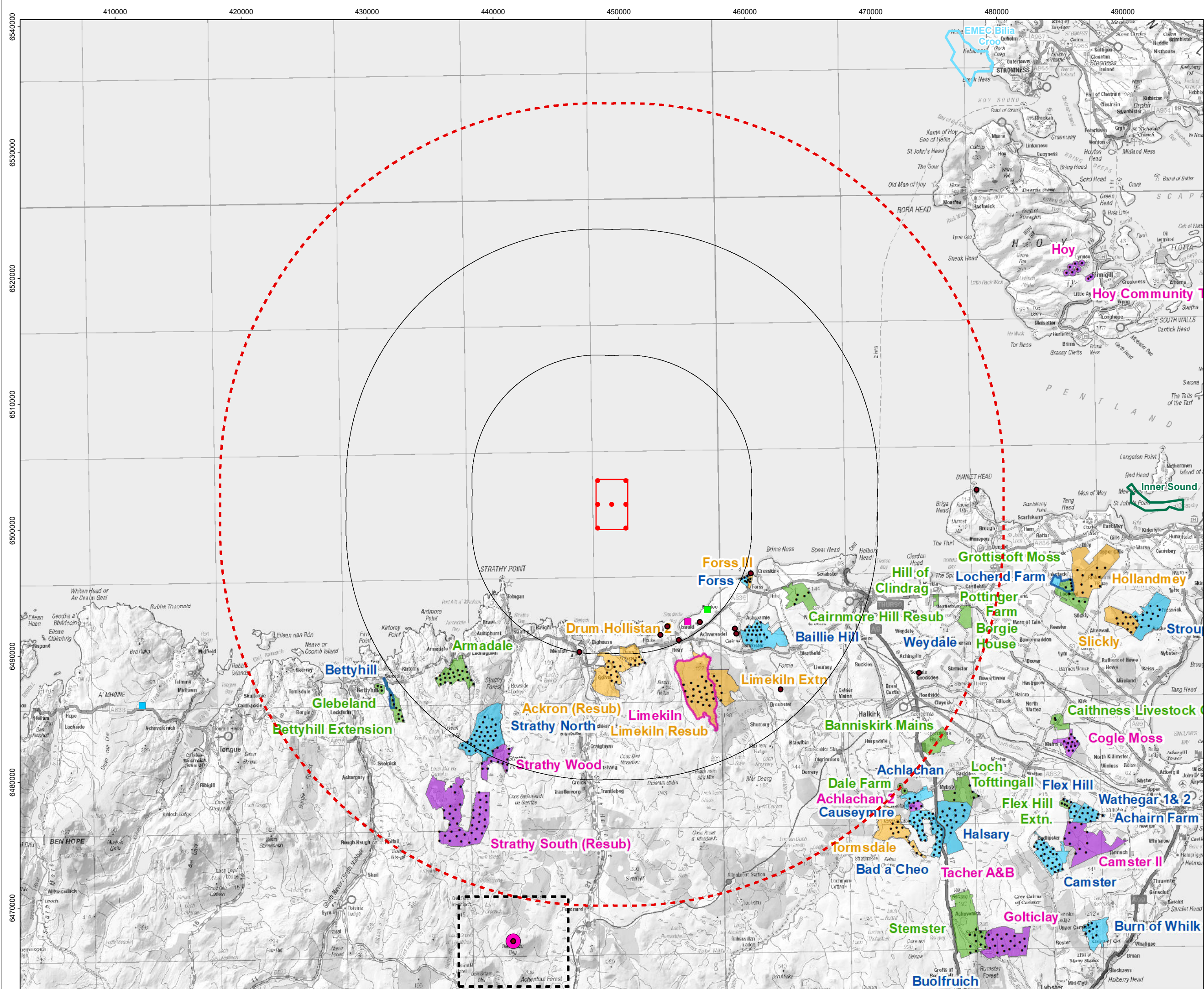
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Proposed Development (10km)

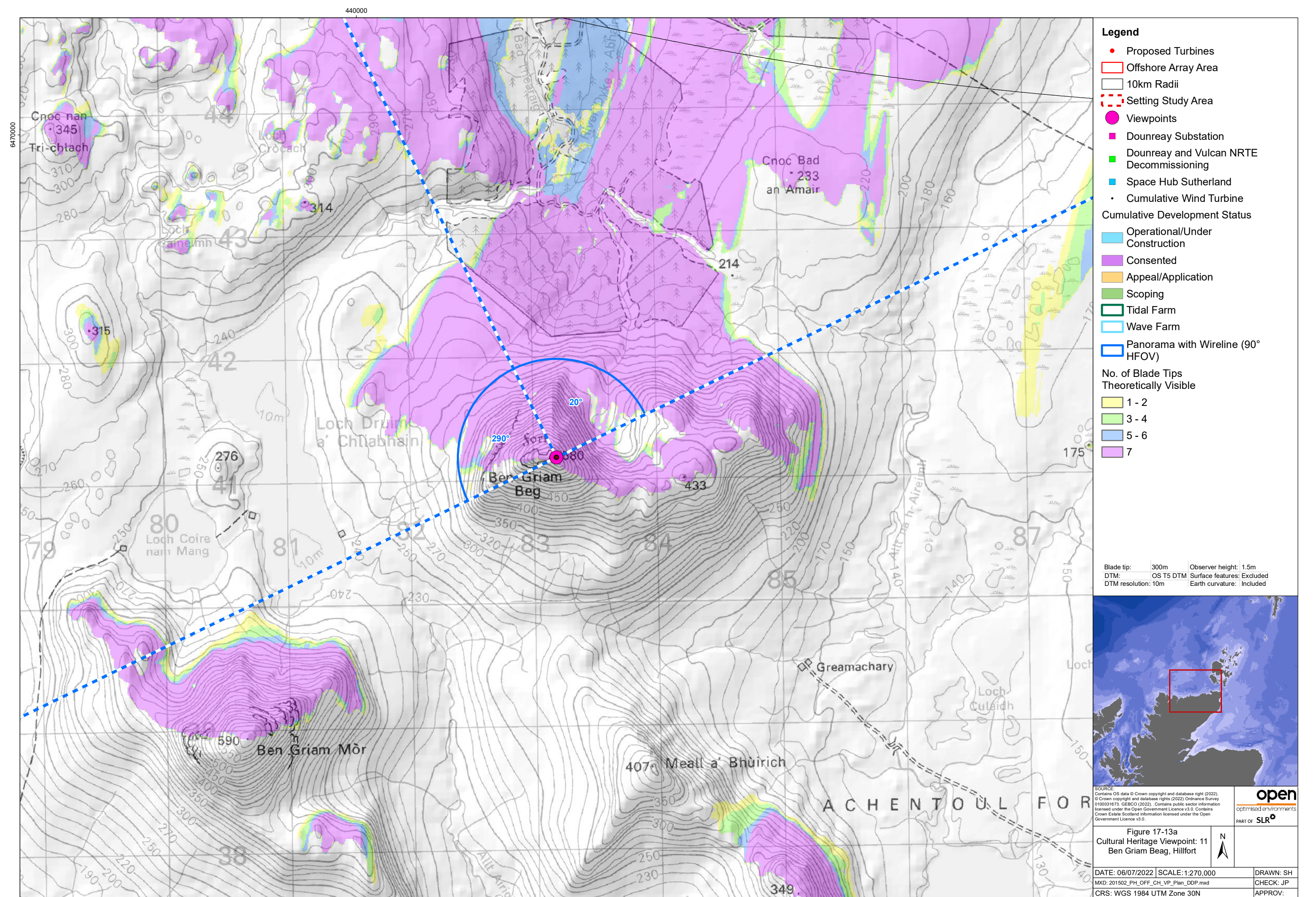


Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	288794 E 964065 N	Horizontal field of view	90° (cylindrical projection)
Elevation	26.1 m AOD	Principal distance	522 mm
Direction of view	60°	Paper size	841 x 297 mm (half A1)
Nearest turbine	9,960 m	Correct printed image size	820 x 260 mm



Scale: 1:270,000



Scale: 1:25,000

Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTD Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

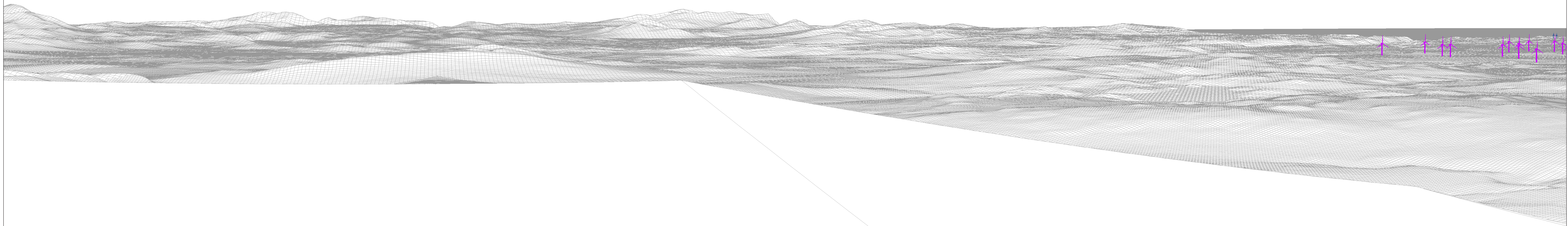
No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m Observer height: 1.5m
 DTM: OS 15 DTM Surface features: Excluded
 DTM resolution: 10m Earth curvature: Included

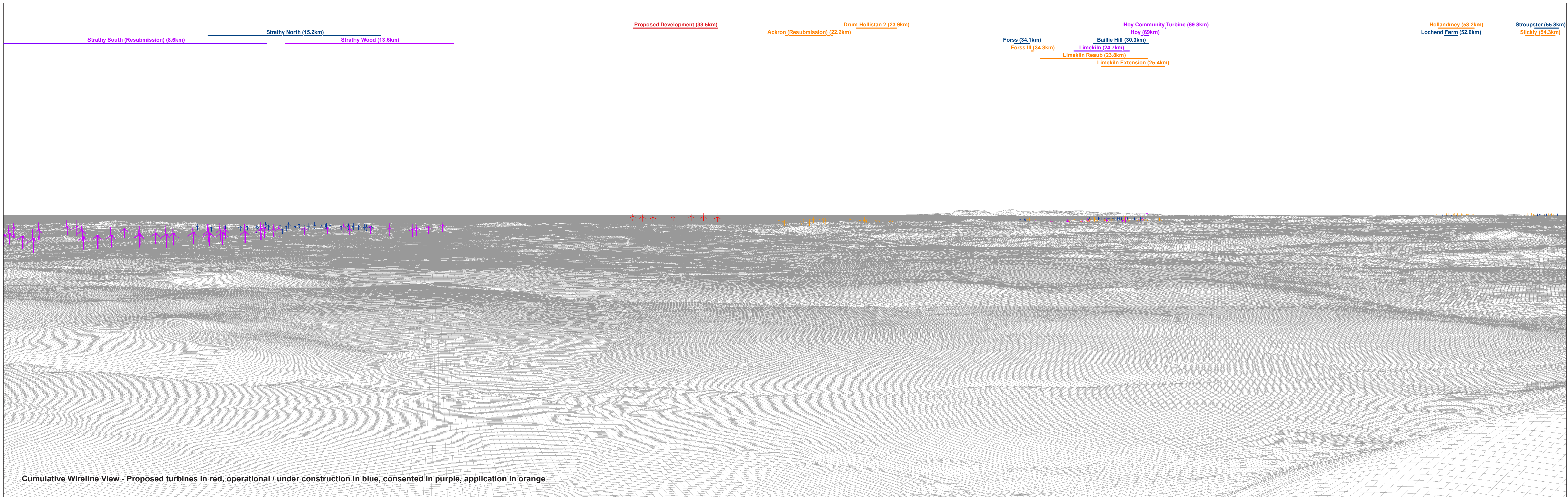
Figure 17-13a
 Cultural Heritage Viewpoint: 11
 Ben Griam Beag, Hillfort

DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
 MXD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd CHECK: JP
 CRS: WGS 1984 UTM Zone 30N APPROV:



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

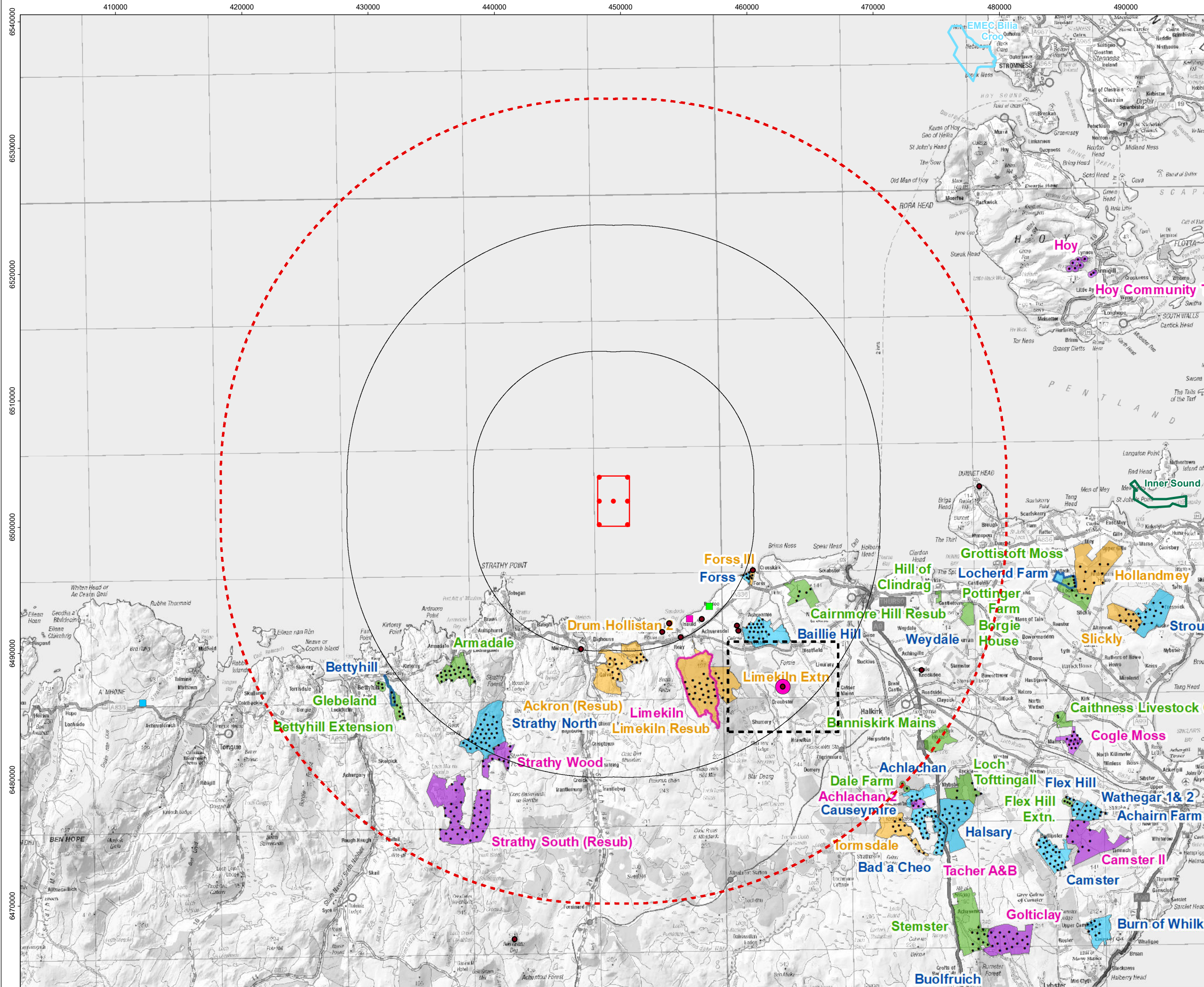
OS reference	283188 E 941178 N	Horizontal field of view	90° (cylindrical projection)
Elevation	549.7 m AOD	Principal distance	522 mm
Direction of view	290°	Paper size	841 x 297 mm (half A1)
Nearest turbine	33,500 m	Correct printed image size	820 x 260 mm



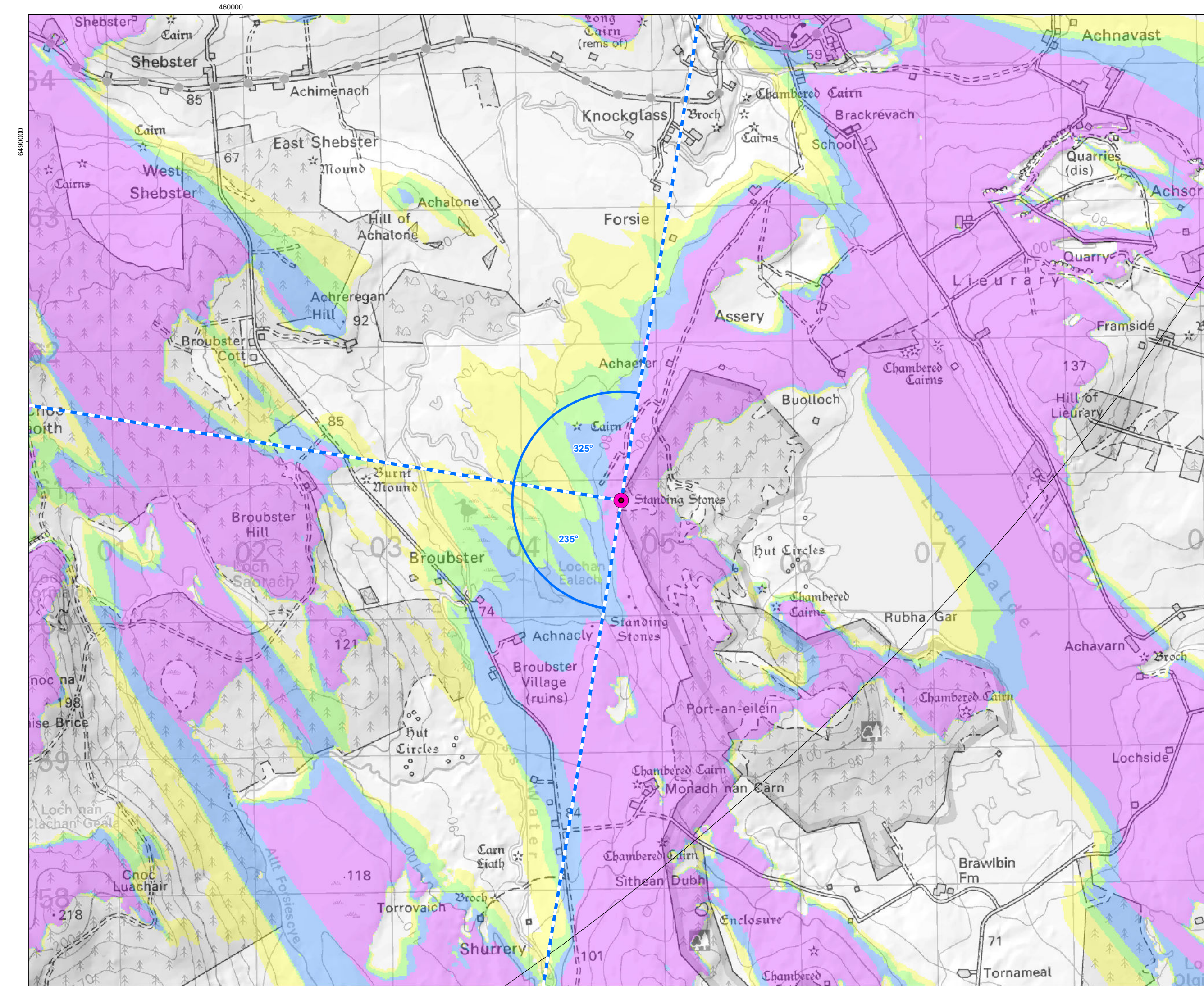
Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	283188 E 941178 N	Horizontal field of view	90° (cylindrical projection)
Elevation	549.7 m AOD	Principal distance	522 mm
Direction of view	20°	Paper size	841 x 297 mm (half A1)
Nearest turbine	33,500 m	Correct printed image size	820 x 260 mm

Figure 17.13c
Viewpoint 11: Ben Griam Beg, Hillfort Cumulative Wireline (view 2 of 2)



Scale: 1:270,000



Scale: 1:25,000

Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- PANORA with Wireline (90° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

Blade tip: 300m
 DTM: OS T5 DTM
 DTM resolution: 10m
 Observer height: 1.5m
 Surface features: Excluded
 Earth curvature: Included

Figure 17-14a
 Cultural Heritage Viewpoint: 12
 Bridge of Brouster

DATE: 06/07/2022 SCALE: 1:270,000 DRAWN: SH
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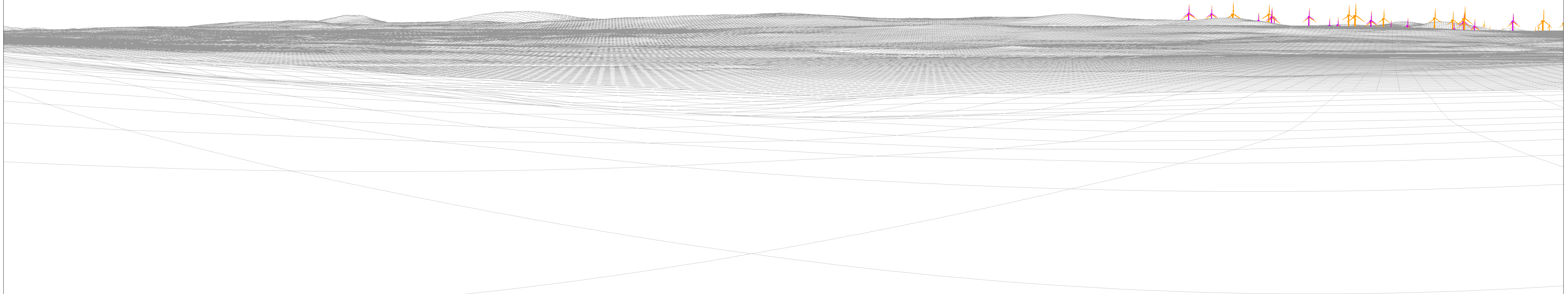
Strathy South (Resubmission) (24.9km)

Limekiln (6km)

Ackron (Resubmission) (12.9km)

Limekiln Resub (5.4km)

Limekiln Extension (4.7km)



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	304728 E 960846 N	Horizontal field of view	90° (cylindrical projection)
Elevation	89.6 m AOD	Principal distance	522 mm
Direction of view	235°	Paper size	841 x 297 mm (half A1)
Nearest turbine	17,783 m	Correct printed image size	820 x 260 mm

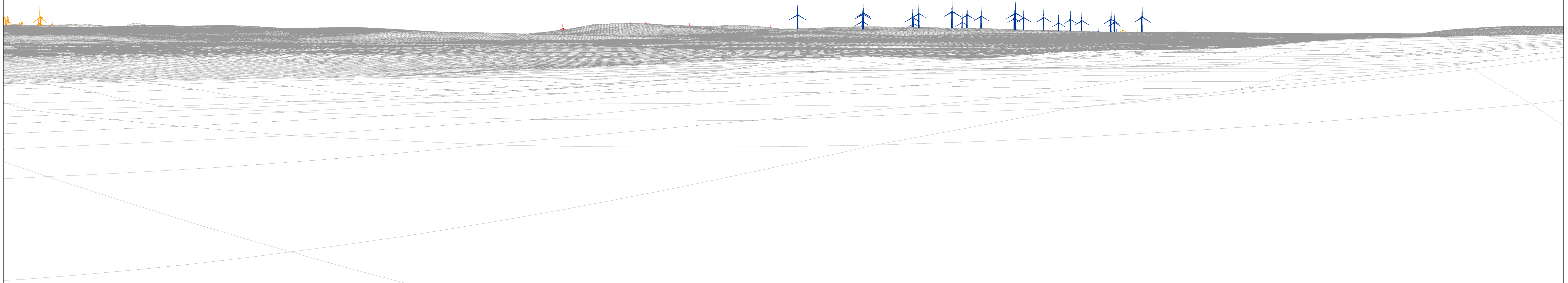
Ackron (Resubmission) (12.9km)
 Drum Hollistan 2 (11km)
 Limekiln Resub (5.4km)
 Limekiln Extension (4.7km)

Proposed Development (17.8km)

Baillie Hill (4.1km)

Forss (9km)

Forss III (9km)

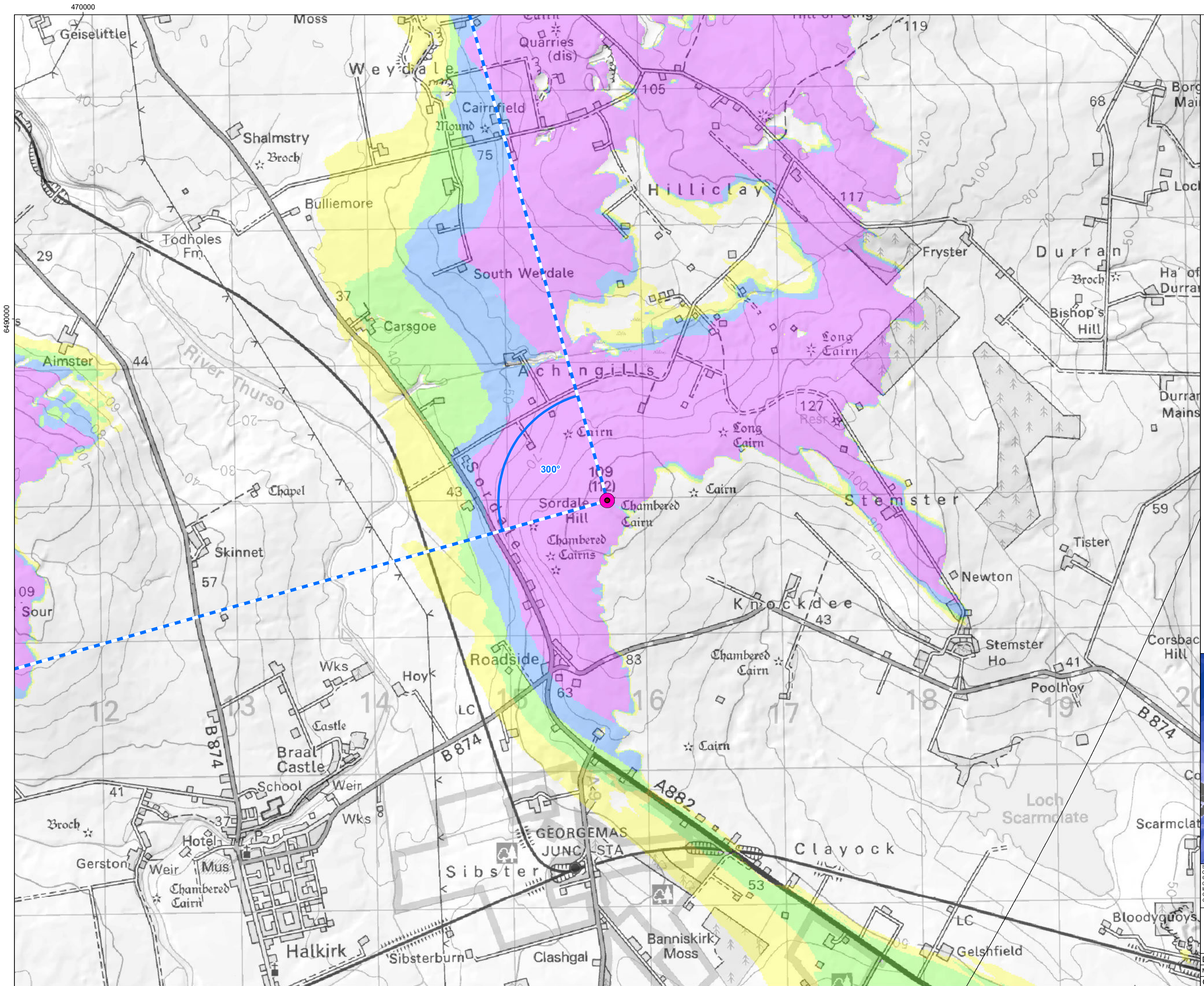
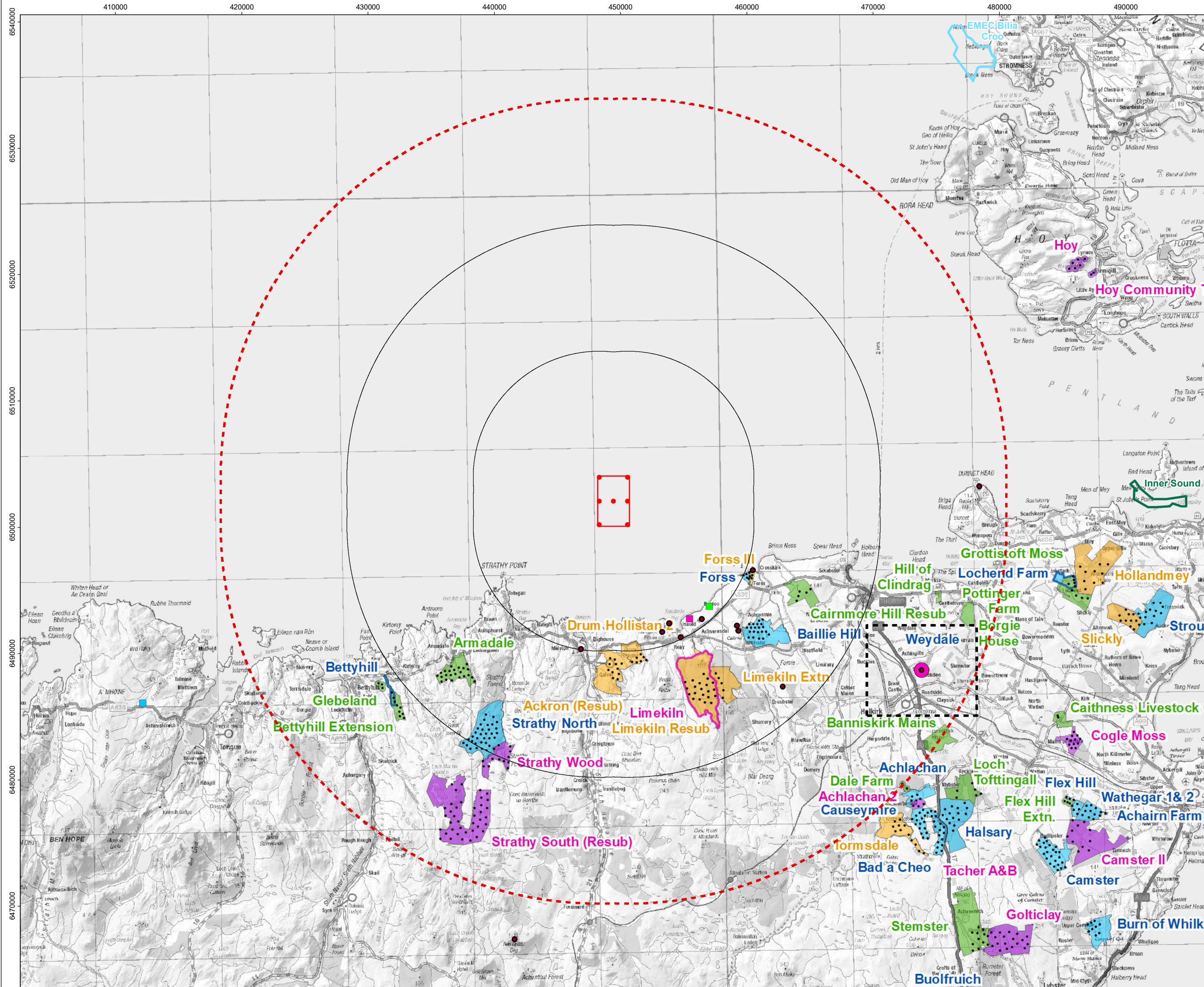


Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	304728 E 960846 N	Horizontal field of view	90° (cylindrical projection)
Elevation	89.6 m AOD	Principal distance	522 mm
Direction of view	325°	Paper size	841 x 297 mm (half A1)
Nearest turbine	17,783 m	Correct printed image size	820 x 260 mm

Figure 17.14c
 Viewpoint 12: Bridge of Broubster Cumulative Wireline (view 2 of 2)

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Legend

- Proposed Turbines
- Offshore Array Area
- 10km Radii
- Setting Study Area
- Viewpoints
- Dounreay Substation
- Dounreay and Vulcan NRTE Decommissioning
- Space Hub Sutherland
- Cumulative Wind Turbine

Cumulative Development Status

- Operational/Under Construction
- Consented
- Appeal/Application
- Scoping
- Tidal Farm
- Wave Farm
- Panorama with Wireline (90° HFOV)

No. of Blade Tips Theoretically Visible

- 1 - 2
- 3 - 4
- 5 - 6
- 7

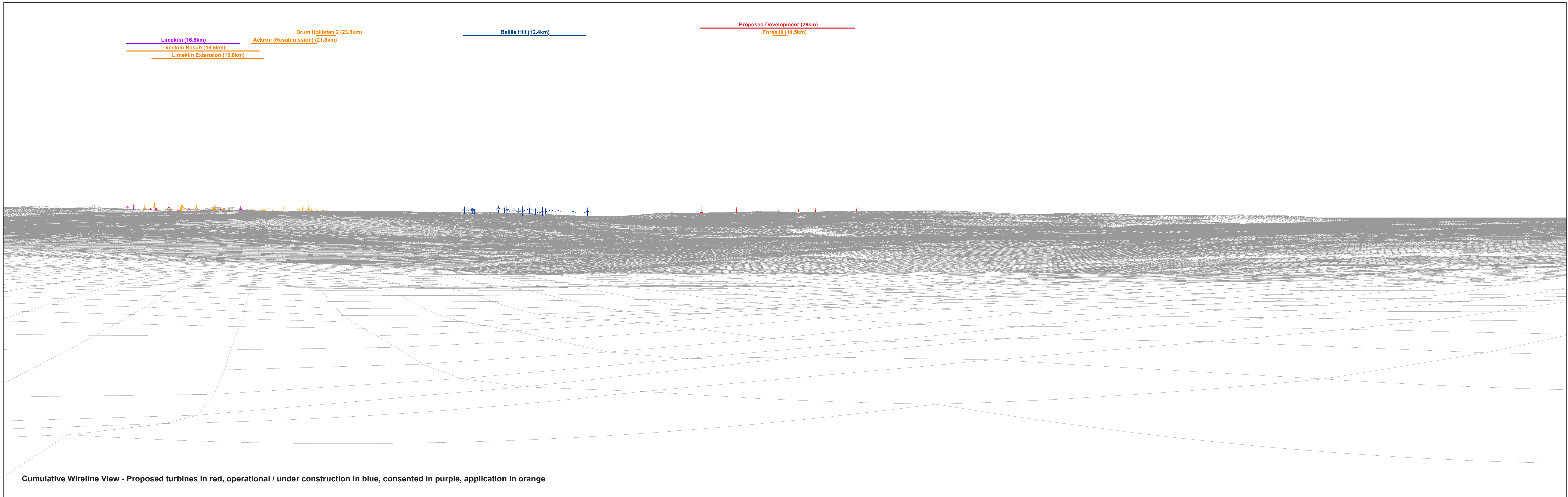
Blade tip: 300m
 DTM: OS T5 DTM
 DTM resolution: 10m

Observer height: 1.5m
 Surface features: Excluded
 Earth curvature: Included

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Figure 17-15a
 Cultural Heritage Viewpoint: 13
 Cnoc na Ciste Chambered Cairn, Sordale Hill

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 MOD: 201502_PH_OFF_CH_VP_Plan_DDP.mxd | CHECK: JP
 CRS: WGS 1984 UTM Zone 30N | APPROV:



Cumulative Wireline View - Proposed turbines in red, operational / under construction in blue, consented in purple, application in orange

OS reference	315730 E 961982 N	Horizontal field of view	90° (cylindrical projection)
Elevation	110.2 m AOD	Principal distance	522 mm
Direction of view	300°	Paper size	841 x 297 mm (half A1)
Nearest turbine	25,991 m	Correct printed image size	820 x 260 mm

Figure 17.15b
Viewpoint 13: Cnoc na Ciste Chambered Cairn, Sordale Hill Cumulative Wireline

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