



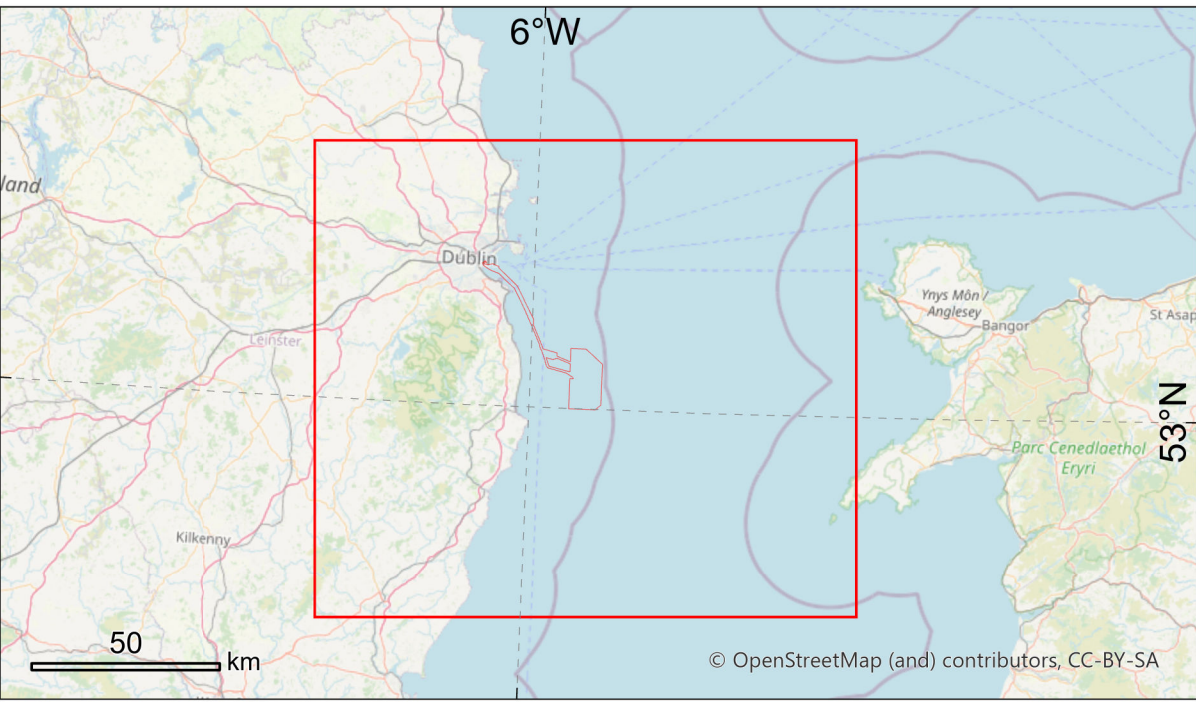
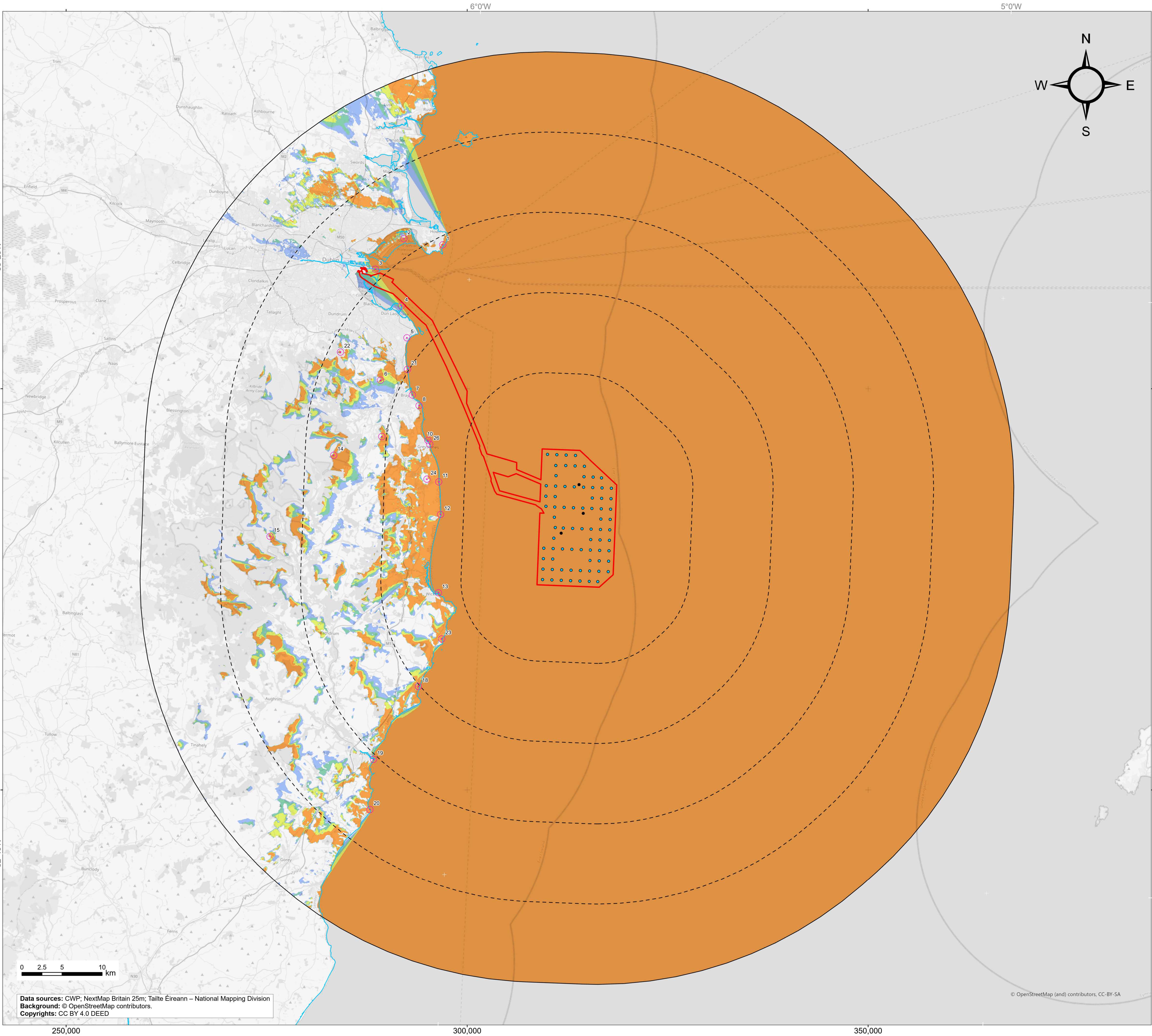
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wind park



Environmental Impact Assessment Report

Volume 4

Appendix 15.13 Obstructed
Zone of Theoretical
Visibility(s) at A1



Planning Application Boundary (PAB)

SLVIA study area (50 km buffer of the array site / wind farm site)

10 km incremental buffers of array site / wind farm site

Low water mark

Wind Turbine Generator (WTG) option A location

Offshore Substation Structure (OSS) location

Viewpoints selected for the SLVIA

Blade tip height Zone of Theoretical Visibility (ZTV) (obstructed)

Number of turbines theoretically visible to blade tip height:

1 - 20

20 - 38

38 - 57

57 - 75

ZTV notes:

- * ZTV produced for 75 turbines of 288m blade tip height.
- * Visibility removed beyond the 50 km study area.
- * Viewpoint height set to 2m AGL.
- * Visibility is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 DSM data and has a 25m² resolution.

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Project:

Codling Wind Park

Contractor:

LDĀDESIGN
www.lda-design.co.uk

Appendix 15.13 Figure 15.13a

Blade tip height Zone of Theoretical Visibility (ZTV) of Wind Turbine Generator (WTG) option A (obstructed) (A1)

CWP doc. number:

CWP-LDA-ENG-08-01-MAP-1006

Internal descriptive code:

ALL - PAB..WFLB.BUFF.50km..ZTV.TIP.A.DSM..
ONSH.VPs - - (EIAR.FIG.15.13a..(A1))

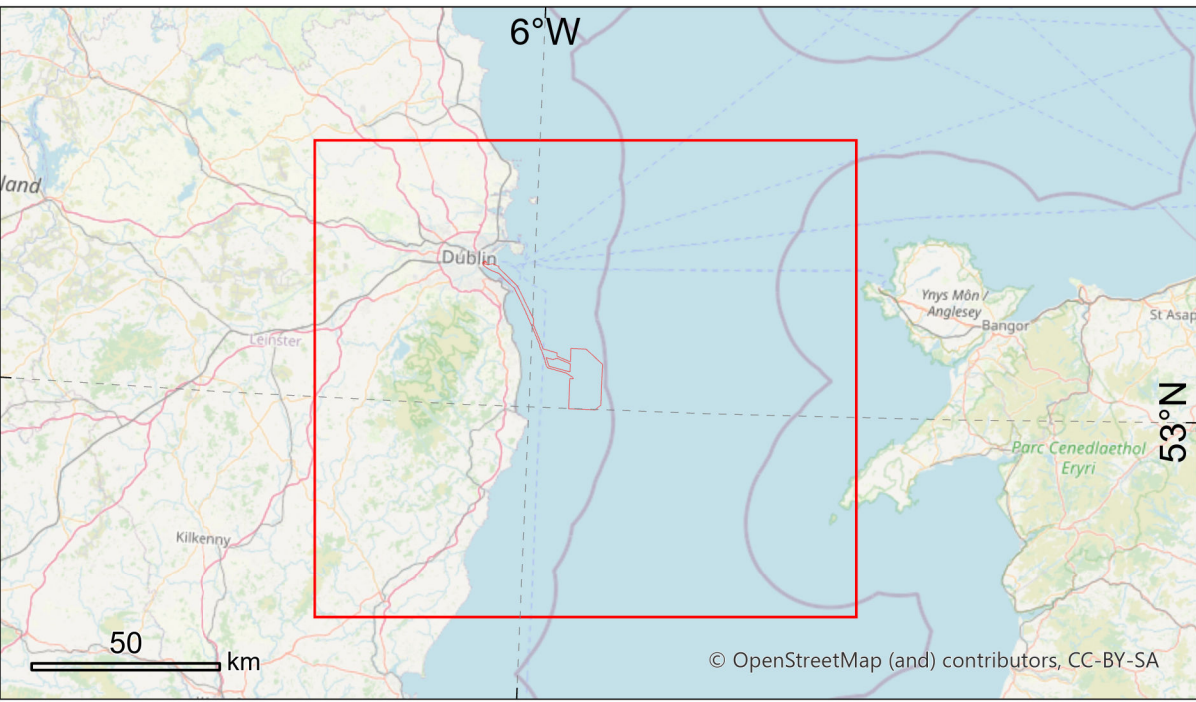
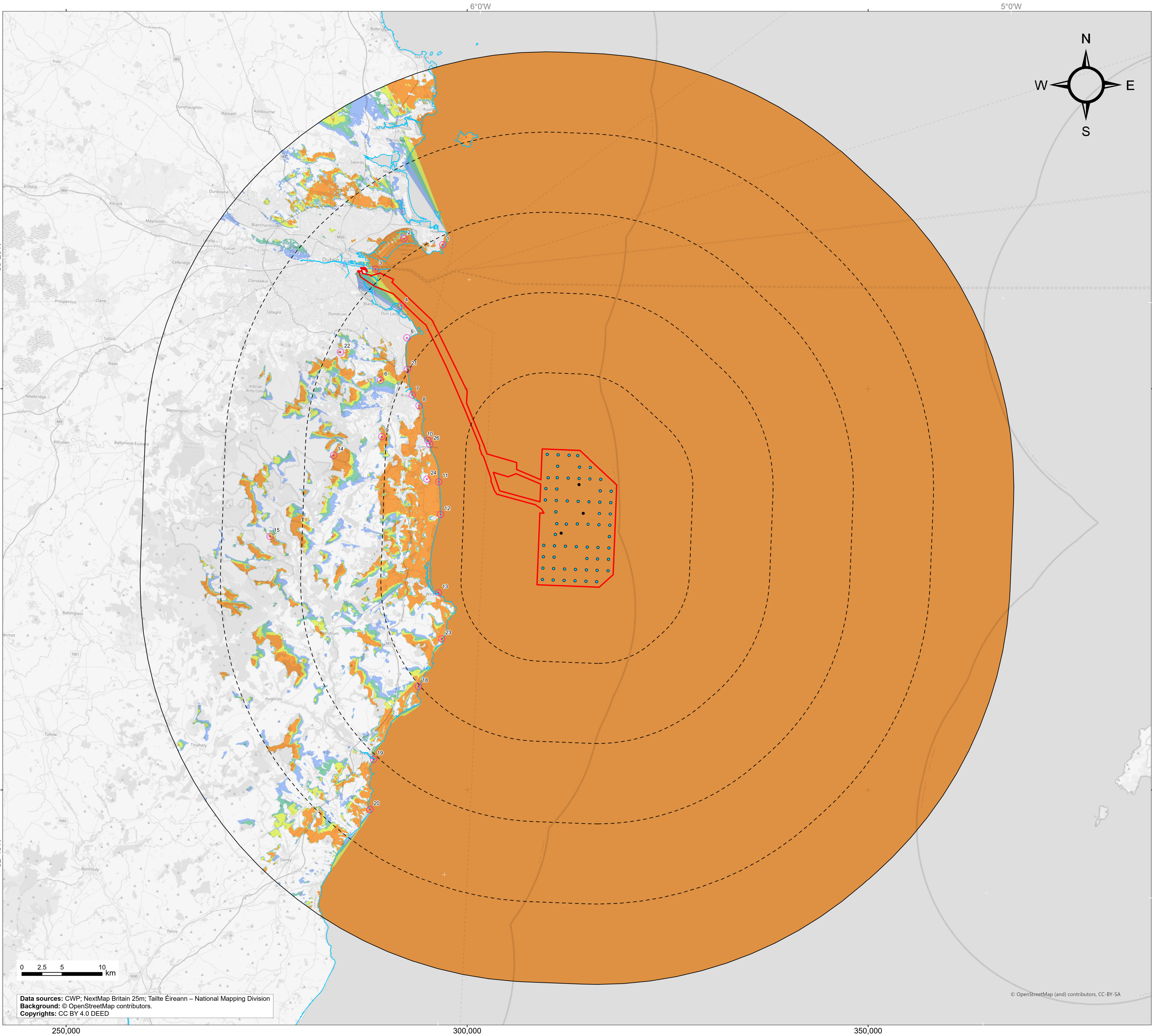
Size: A1

Scale: 1:230,000

CRS:

EPSG 25830

Rev.	Description	Date	By	Chk'd	App'd
A	First issue	2024/06/06	VW	IH/EA	MB/SL



Planning Application Boundary (PAB)

SLVIA study area (50 km buffer of the array site / wind farm site)

10 km incremental buffers of array site / wind farm site

Low water mark

Wind Turbine Generator (WTG) option B location

Offshore Substation Structure (OSS) location

Viewpoints selected for the SLVIA

Blade tip height Zone of Theoretical Visibility (ZTV) (obstructed)

Number of turbines theoretically visible to blade tip height:

1 - 15

15 - 30

30 - 45

45 - 60

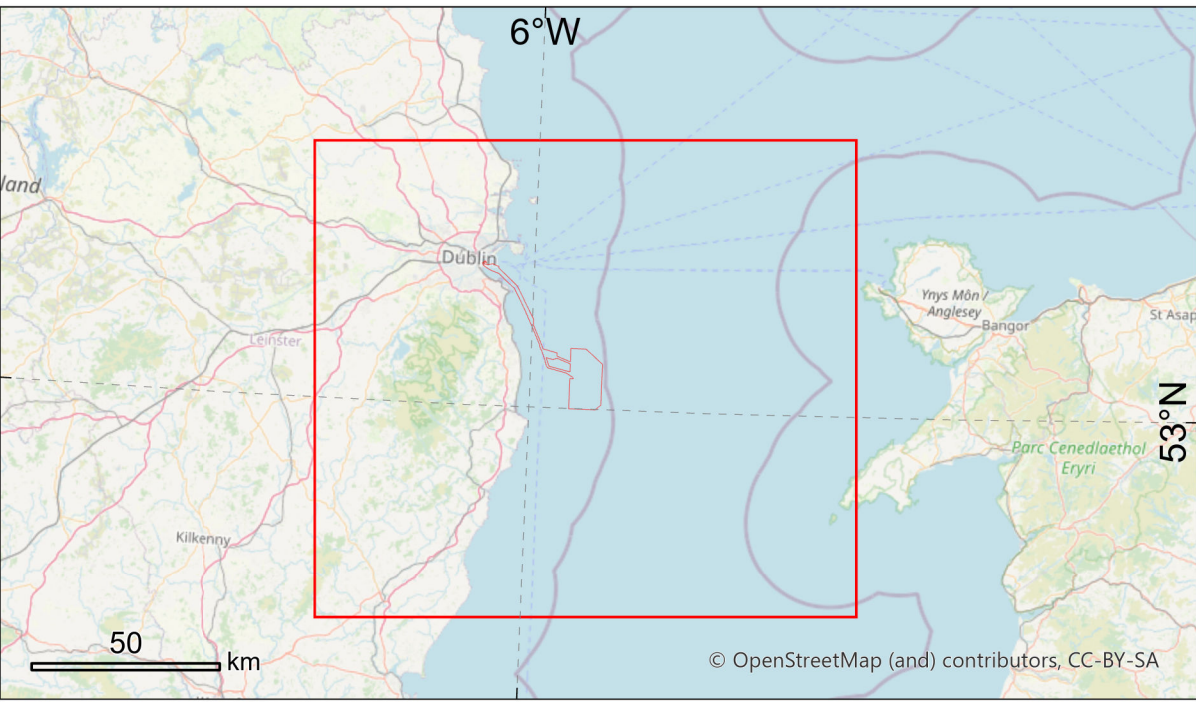
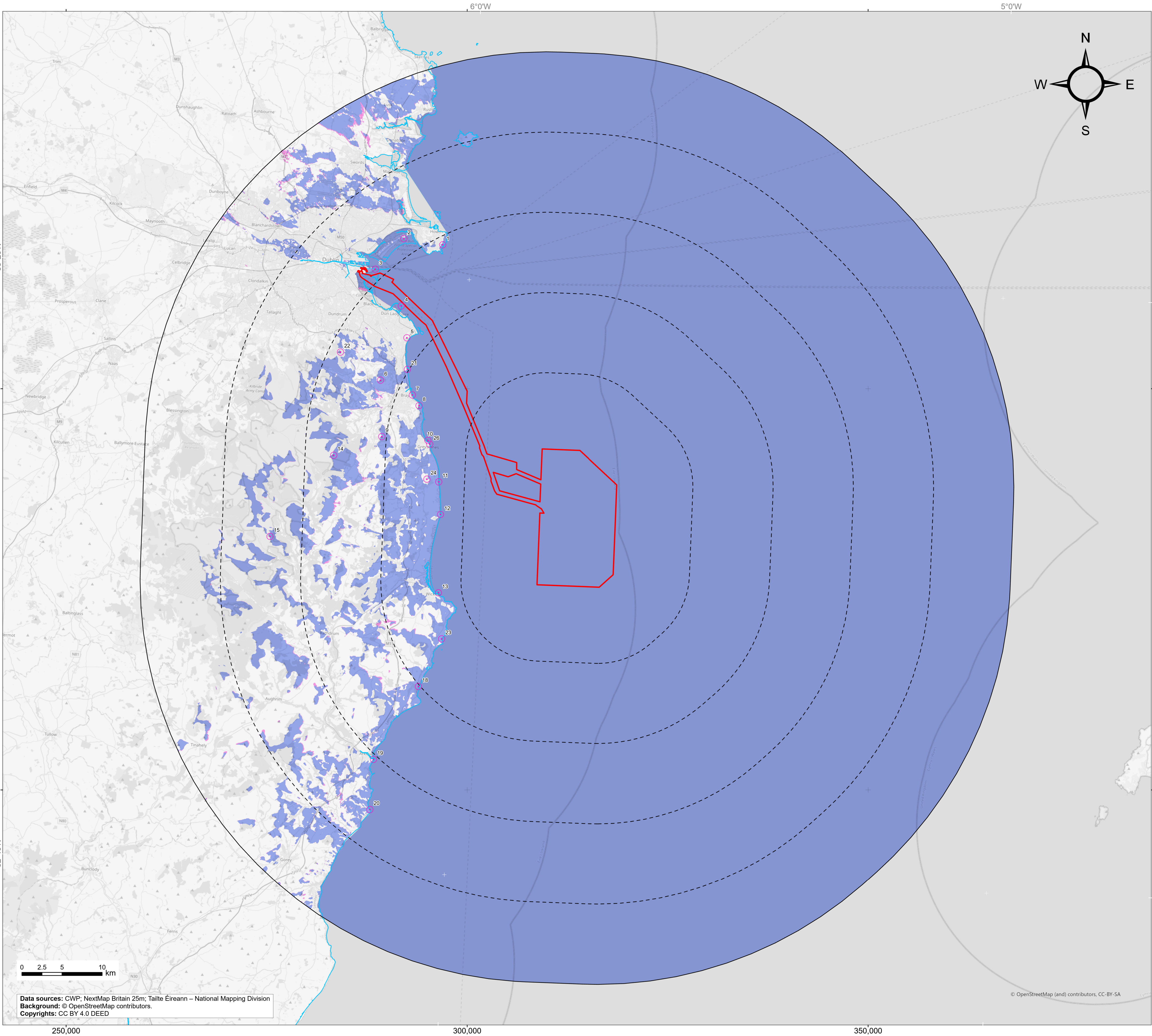
ZTV notes:

- * ZTV produced for 60 turbines of 314m blade tip height.
- * Visibility removed beyond the 50 km study area.
- * Viewpoint height set to 2m AGL.
- * Visibility is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 DSM data and has a 25m² resolution.

<div><div><div></div><div>Codling wind park</div></div></div>		Project: Codling Wind Park		Contractor: LD A DESIGN www.lda-design.co.uk			
Appendix 15.13 Figure 15.13b Blade tip height Zone of Theoretical Visibility (ZTV) of Wind Turbine Generator (WTG) option B (obstructed) (A1)							
CWP doc. number: CWP-LDA-ENG-08-01-MAP-1007							
Internal descriptive code: ALL - PAB, WFLB, BUFF, 50km, ZTV, TIP, B, DSM, ONSH, VPs - - (EIAR, FIG. 15.13b, (A1))			Size: A1 Scale: 1:230,000		CRS: EPSG 25830		
Rev.	Description			Date	By	Chk'd	App'd
A	First issue			2024/06/06	VW	IH/EA	MB/SL



Planning Application Boundary (PAB)

SLVIA study area (50 km buffer of the array site / wind farm site)

10 km incremental buffers of array site / wind farm site

Low water mark

Viewpoints selected for the SLVIA

Blade tip height Zone of Theoretical Visibility (ZTV) (obstructed))

Option A

Option B

ZTV notes:

* ZTV produced for 75 option A turbines of 288m to blade tip height and 60 option B turbines at 314m to blade tip height.

* Visibility removed beyond the 50 km study area.

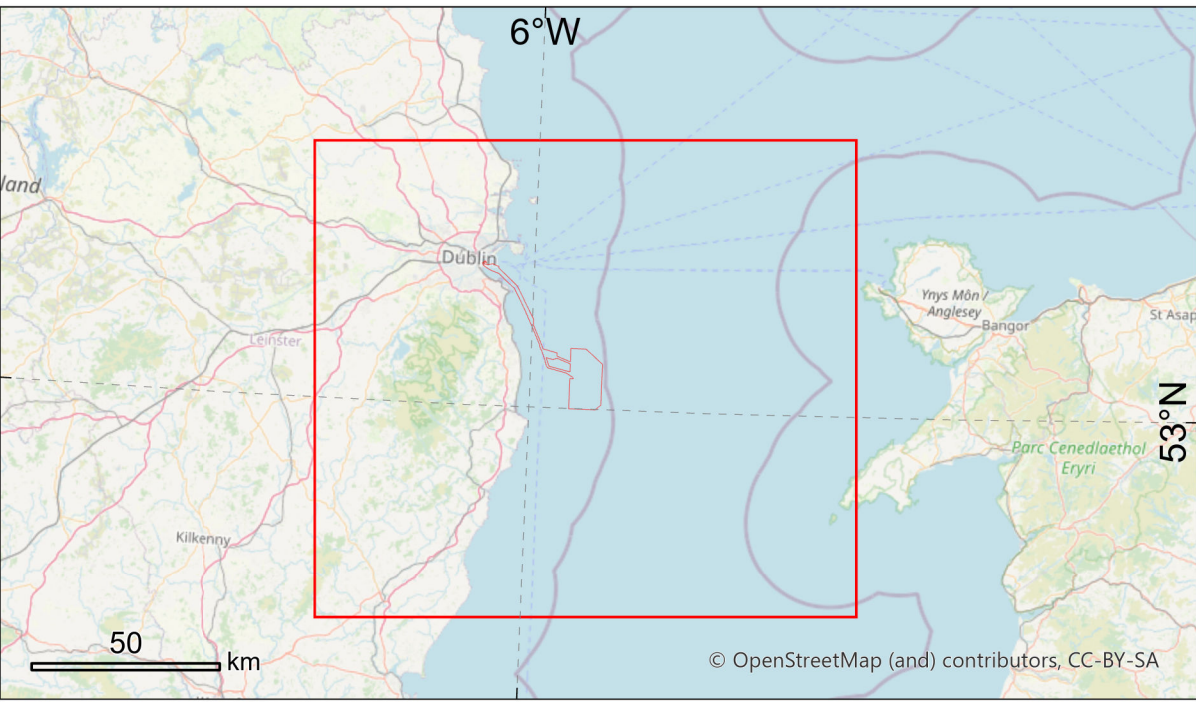
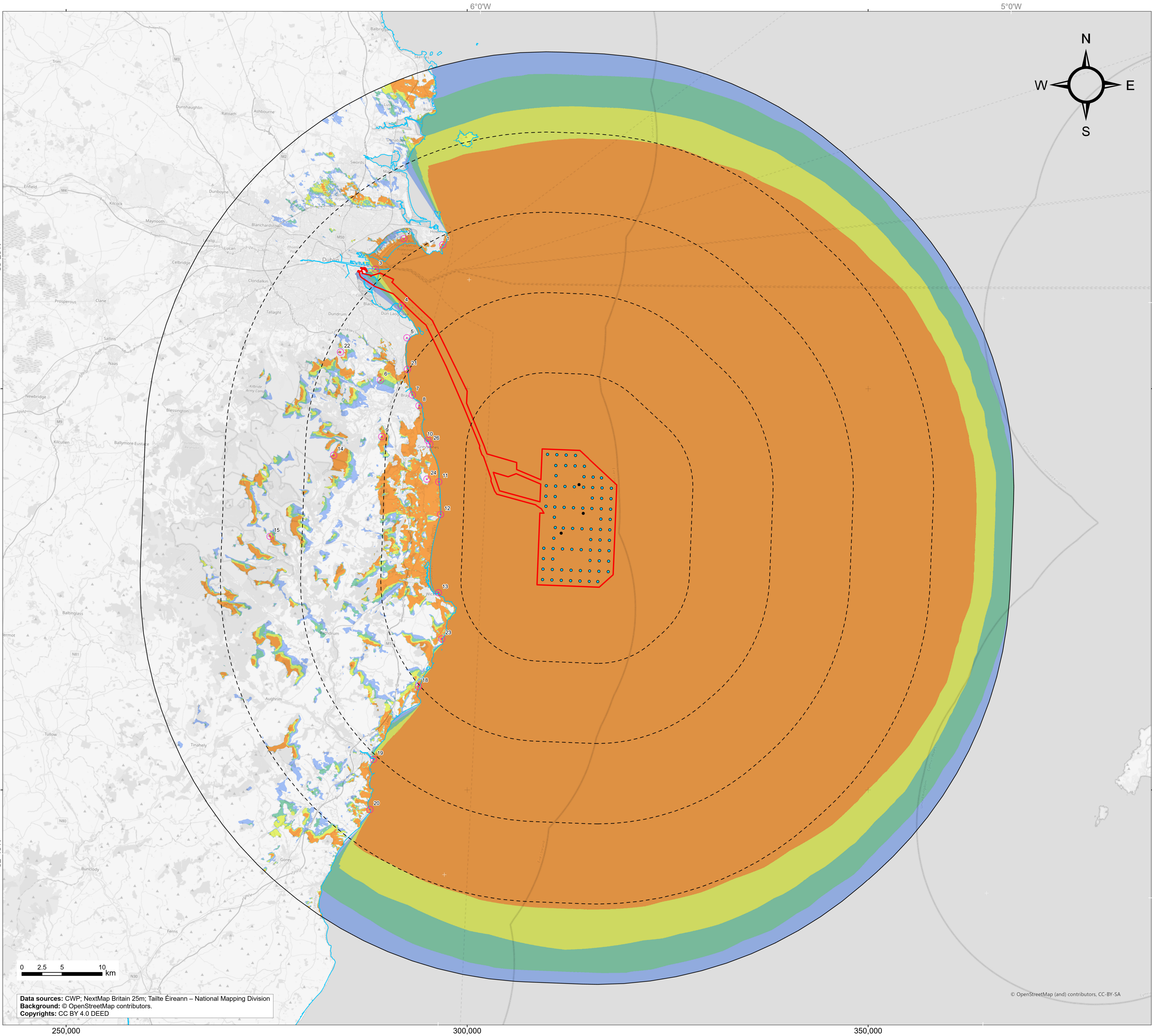
* Viewpoint height set to 2m AGL.

* Visibility is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 DSM data and has a 25m² resolution.

<div><div><div></div></div><div>Codling Wind Park</div></div>	<div>Project:</div> <div>Codling Wind Park</div>	<div>Contractor:</div> <div>LDĀ DESIGN</div> <div>www.ida-design.co.uk</div>
<div>Appendix 15.13 Figure 15.13c</div> <div>Comparative blade tip height Zone of Theoretical Visibility (ZTV) of Wind Turbine Generator (WTG) options A & B (obstructed) (A1)</div>		
<div>CWP doc. number:</div> <div>CWP-LDA-ENG-08-01-MAP-1008</div>		
<div>Internal descriptive code:</div> <div>ALL - PAB.WF.RLB.BUFF.50km.ZTV.TIPs.A.B.DSM..</div> <div>ONSH.VPs - - (EIAR.FIG.15.13c.(A1))</div>	<div>Size: A1</div> <div>Scale: 1:230,000</div>	<div>CRS:</div> <div>EPSG 25830</div>
<div>Rev.</div> <div>A</div>	<div>Description</div> <div>First issue</div>	<div>Date</div> <div>2024/06/06</div> <div>By</div> <div>VW</div> <div>Chk'd</div> <div>IH/EA</div> <div>App'd</div> <div>MB/SL</div>



Planning Application Boundary (PAB)

SLVIA study area (50 km buffer of the array site / wind farm site)

10 km incremental buffers of array site / wind farm site

Low water mark

Wind Turbine Generator (WTG) option A location

Offshore Substation Structure (OSS) location

Viewpoints selected for the SLVIA

Hub height Zone of Theoretical Visibility (ZTV) (obstructed)

Number of turbines theoretically visible to hub height:

1 - 20

20 - 38

38 - 57

57 - 75

ZTV notes:

* ZTV produced for 75 turbines of 163m hub height.


* Visibility removed beyond the 50 km study area.

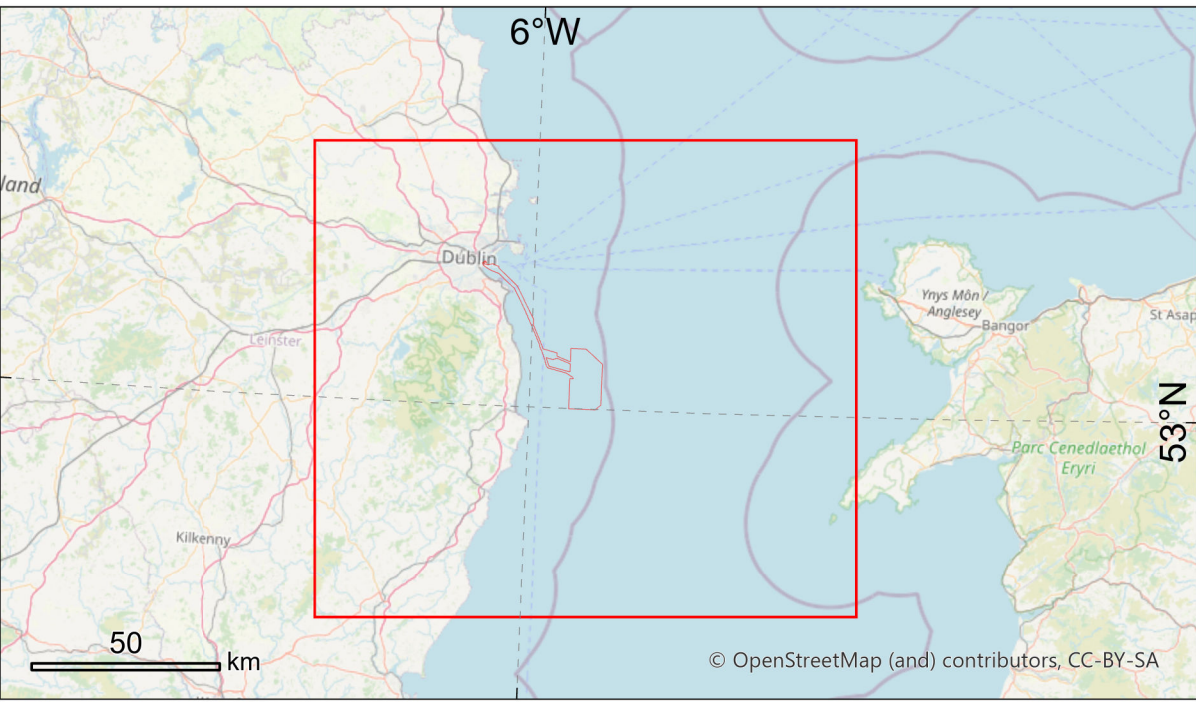
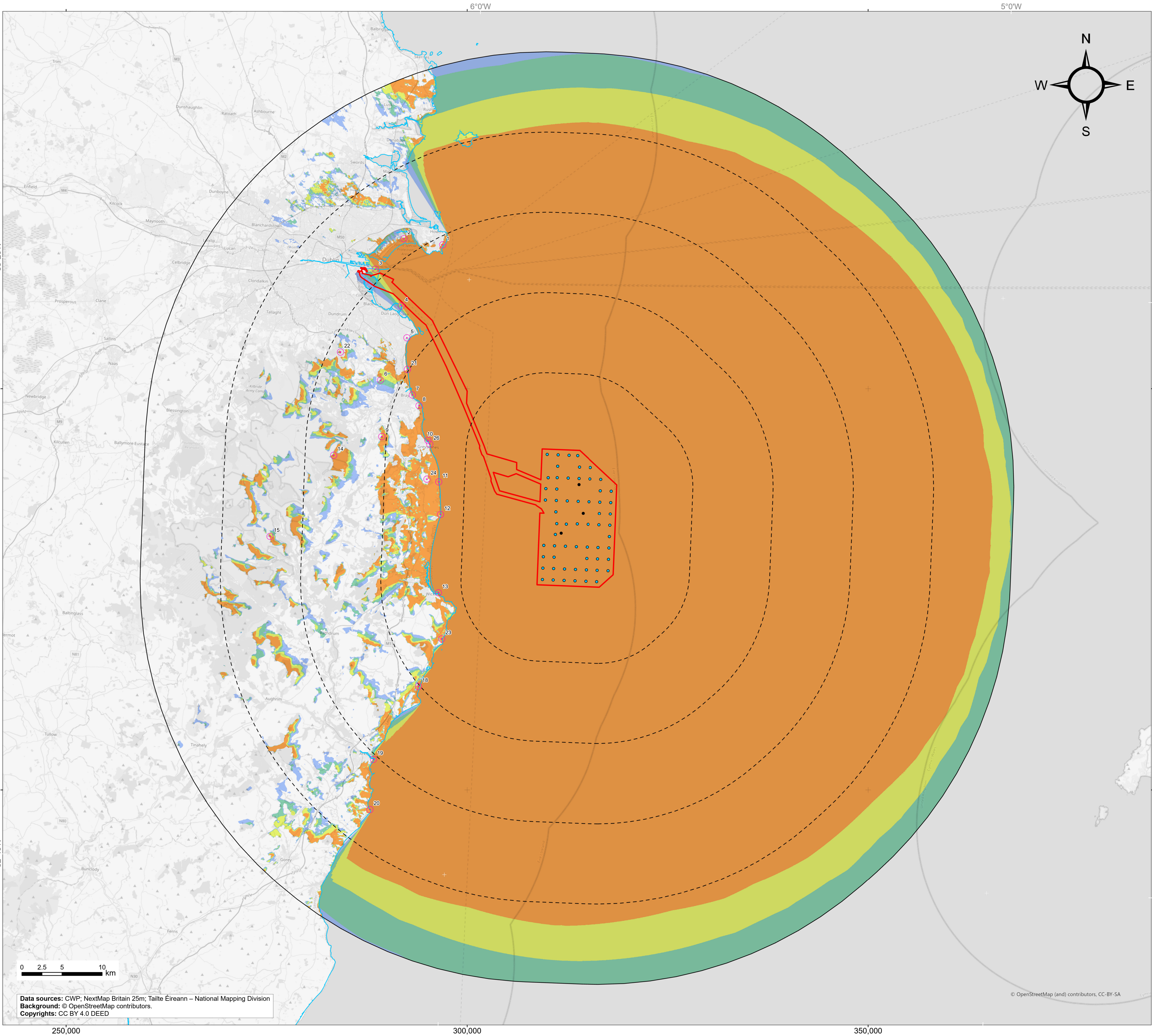
* Viewpoint height set to 2m AGL.

* Visibility is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 DSM data and has a 25m² resolution.

		Project: Codling Wind Park		Contractor: LDĀDESIGN www.lda-design.co.uk	
Appendix 15.13 Figure 15.13d Hub height Zone of Theoretical Visibility (ZTV) of Wind Turbine Generator (WTG) option A (obstructed) (A1)					
CWP doc. number:		CWP-LDA-ENG-08-01-MAP-1009			
Internal descriptive code: ALL - PAB_WFRLB.BUFF.50km_ZTV.HUB.A.DSM.. ONSH.VPs - - (EIAR.FIG.15.13d..(A1))			Size: A1 Scale: 1:230,000		CRS: EPSG 25830
Rev.	Description		Date	By	Chk'd App'd
A	First issue		2024/06/06	VW	IH/EA MB/SL



Planning Application Boundary (PAB)

SLVIA study area (50 km buffer of the array site / wind farm site)

10 km incremental buffers of array site / wind farm site

Low water mark

Wind Turbine Generator (WTG) option B location

Offshore Substation Structure (OSS) location

Viewpoints selected for the SLVIA

Hub height Zone of Theoretical Visibility (ZTV) (obstructed)

Number of turbines theoretically visible to hub height:

1 - 15

15 - 30

30 - 45

45 - 60

ZTV notes:

* ZTV produced for 60 turbines of 176m hub height.

* Visibility removed beyond the 50 km study area.

* Viewpoint height set to 2m AGL.

* Visibility is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

The model does not take into account any localised features such as small copses, hedgerows or individual trees and therefore still gives an exaggerated impression of the extent of visibility. The actual extent of visibility on the ground will be less than that suggested by this plan.

The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 DSM data and has a 25m² resolution.

Codling
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Project:

Codling Wind Park

Contractor:

LD A DESIGN
www.lda-design.co.uk

Appendix 15.13

Figure 15.13e

Hub height Zone of Theoretical Visibility (ZTV)
of Wind Turbine Generator (WTG) option B
(obstructed) (A1)

CWP doc. number:

CWP-LDA-ENG-08-01-MAP-1010

Internal descriptive code:
ALL - PAB.WFRLB.BUFF.50km.ZTV.HUB.B.DSM..
ONSH.VPs - - (EIAR.FIG.15.13e..(A1))

Size: A1

Scale: 1:230,000

CRS:

EPSG 25830

Rev.

Description

Date

By

Chk'd

App'd

A

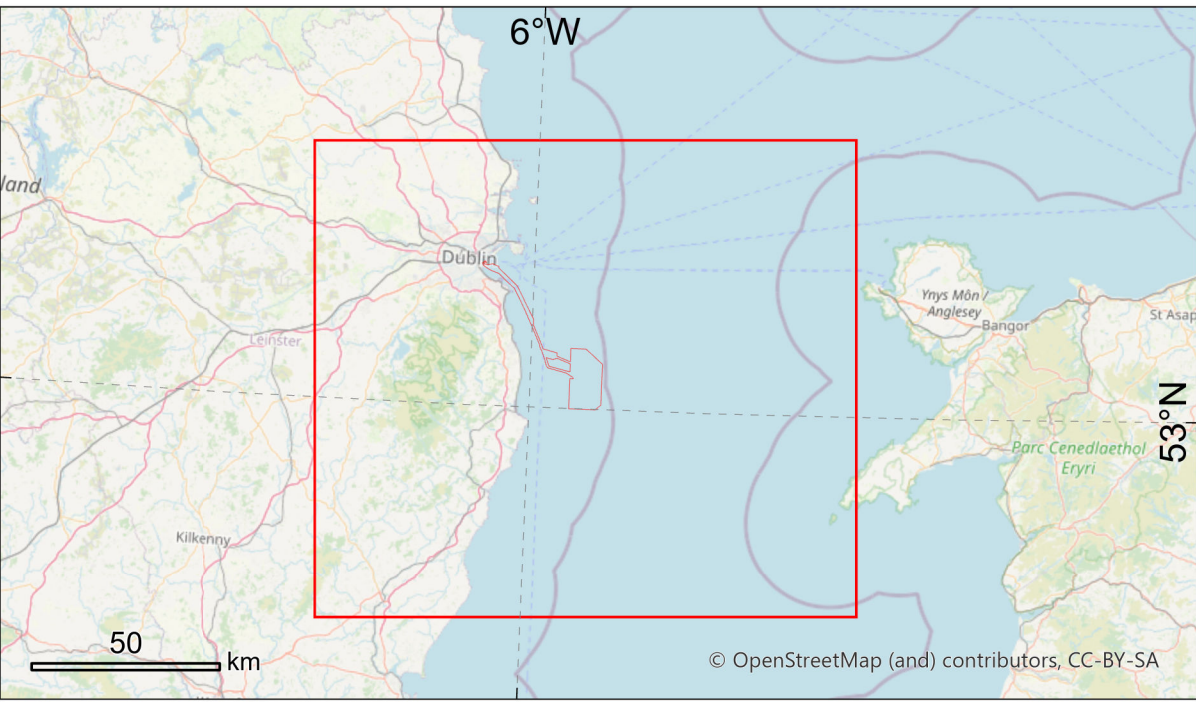
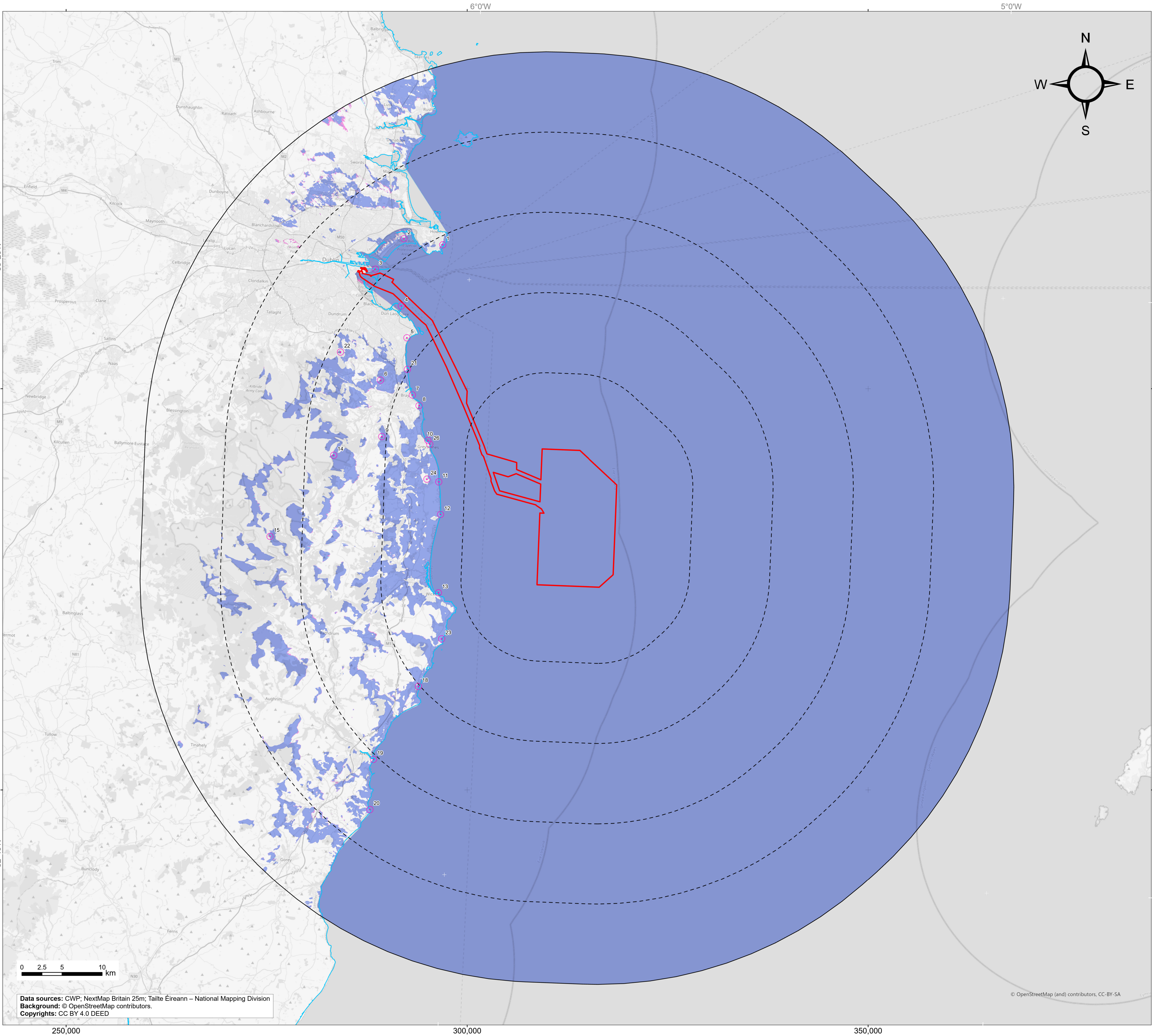
First issue

2024/06/06

VW

IH/EA

MB/SL



Planning Application Boundary (PAB)

SLVIA study area (50 km buffer of the array site / wind farm site)

10 km incremental buffers of array site / wind farm site

Low water mark

Viewpoints selected for the SLVIA

Hub height Zone of Theoretical Visibility (ZTV) (obstructed)

Option A

Option B

ZTV notes:

* ZTV produced for 75 option A turbines of 163m to hub height and 60 option B turbines at 176m to hub height .


* Visibility removed beyond the 50 km study area.

* Viewpoint height set to 2m AGL.

* Visibility is based upon computer generated Zone of Theoretical Visibility (ZTV) studies produced using the viewshed routine in the ESRI ArcGIS Suite. The areas shown are the maximum theoretical visibility, taking into account topography, principal woodlands and settlements, which have been included in the model with the heights obtained from Nextmap 25. It should be noted that in some areas woodlands included within the ZTV may comprise active forestry, resulting in the felling and replanting of some areas modelled in the ZTV study. The ZTV study reflects this pattern at a specific point in time, as it is based on real height information. Whilst the felling cycle will alter the heights of different areas of forestry over time, altering localised visual effects, the wider pattern will remain relatively constant.

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The ZTV includes an adjustment that allows for Earth's curvature and light refraction. It is based on Nextmap 25 DSM data and has a 25m² resolution.

	<div>Project:</div> <div>Codling Wind Park</div>	<div>Contractor:</div> <div>LDĀDESIGN</div> <div>www.lda-design.co.uk</div>			
<div>Appendix 15.13 Figure 15.13f</div> <div>Comparative hub height Zone of Theoretical Visibility (ZTV) of Wind Turbine Generator (WTG) options A & B (obstructed) (A1)</div>					
<div>CWP doc. number:</div> <div>CWP-LDA-ENG-08-01-MAP-1011</div>					
<div>Internal descriptive code:</div> <div>ALL - PAB.WF.RLB.BUFF.50km.ZTV.HUBs A.B.DSM.. ONSH.VPs - - (EIAR.FIG.15.13f.(A1))</div>		<div>Size: A1</div> <div>Scale: 1:230,000</div>	<div>CRS:</div> <div>EPSG 25830</div>		
<div>Rev.</div>	<div>Description</div>	<div>Date</div>	<div>By</div>	<div>Chk'd</div>	<div>App'd</div>
A	First issue	2024/06/06	VW	IH/EA	MBo/SL