AiBridges
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MKO,
27 Mount Street Lower,
Tuam Road,
Galway,
Ireland,
H91 VW84

25th September 2025.

Re: Development of Cooloo Windfarm (the **"Project**")

To Whom It May Concern

We, Ai Bridges Limited, confirm that we were commissioned by MKO (the "**Client**") to present Mitigation Measure solutions for potential impacts caused to two existing ESB Networks radio links: Abbeyknockmoy to Glenamaddy 38kV, and Abbeyknockmoy to Castlerea 38kV, as shown in Appendix 1

- *Mitigation Measures*

(the "**Report**")

The purpose of this Letter is to enable MKO (the "**Addressee**") to rely on the findings contained in the Report in relation to the Software Modelling Analysis of the interference impact assessment of the ESB Telecommunications Network traversing the proposed Cooloo Wind Farm development site.

Executive Summary :

Ai Bridges were commissioned to carry out an independent Telecommunications Impact Assessment Study to assess the possible impacts to the ESB Networks radio links due to the proposed Wind Farm development. There are technically viable Mitigation Measure Solutions available to offset any potential impact due to the proposed turbines. These are shown in Appendix 1.
It should be noted that UHF radio links are inherently robust to obstacle interference, and there are numerous precedents of existing UHF telemetry polling radio links, operated by ESB Networks, that are obstructed by operational wind farms and terrain with no reports of impact on radio link performance. These precedents are shown Appendix 2. There are also precedents of mitigation measure solutions that have been presented to ESB Networks, for wind farms which have subsequently been granted planning permission (Appendix 3).

Mitigation Measure Proposals :

ESB Networks have indicated that two existing UHF radio links could potentially be impacted by the proposed development.

- Abbeyknockmoy to 38kV Glenamaddy (Potentially impacted by T07)
- Abbeyknockmoy to Castlerea 38kV (Potentially impacted by T07)

To offset the potential impact of the wind turbines and to allay any concerns that ESB Networks may have in relation to potential interference due to the proposed turbines, the following mitigation measure proposals should be effected as a condition of planning in the event of a planning consent.

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Based on the Report, as shown in Appendix 1, the Developer proposes the following technically viable mitigation measures that should be implemented as outlined in Table 1 below.

Radio Link	Mitigation Measure Options
Abbeyknockmoy to Glenamaddy 38kV	Relocate monopole at Glenamaddy 38kV (i.e. relocate the monopole at Glenamaddy to a new location within the substation compound so that radio link path moves further away from T07)
	Upgrade the existing UHF polling radio link to an alternative communications link. During previous consultations with ESB (regarding a third-party wind farm project), ESB indicated that they had sought response to a RFP Tender to upgrade their UHF radio network to a more modern communications network, such as the one proposed in the mitigation measure above (i.e. a broadband based communications network) .
Abbeyknockmoy to Castlerea 38kV	Relocate monopole at Castlerea 38kV (i.e. relocate the monopole at Castlerea to a new location within the substation compound so that radio link path moves further away from T07)
	Upgrade the existing UHF polling radio link to an alternative communications link. During previous consultations with ESB (regarding a third-party wind farm project), ESB indicated that they had sought response to a RFP Tender to upgrade their UHF radio network to a more modern communications network, such as the one proposed in the mitigation measure above (i.e. a broadband based communications network) .

Table 1

Summary :

Based on professional experience and previous precedents of similar mitigation proposals, the most technical viable mitigation measures have been outlined and are considered to be the best technical options for both the telecoms operator and the Applicant. The proposed measures will offset the potential impacts of the proposed turbines at Cooloo on the existing telecommunications network infrastructure. The Applicant in this instance will be responsible for all costs associated with the mitigation measures set out. A protocol agreement will be put in place between the Applicant and the telecoms operator (ESB Networks), prior to the construction of the proposed wind farm to agree terms such as estate planning, operator access, electricity supply etc. Based on the implementation of the mitigation measures outlined in this report it is considered that there will be no residual adverse effects on the existing telecommunication infrastructure network as a result of the proposed wind farm.

Yours Sincerely

Kevin Hayes
For and on behalf of
Ai Bridges Limited

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Appendix 1

Mitigation Measures

1. Mitigation Measures

The following section describes the mitigation measures available to the wind farm developer to offset the potential impact of the turbines on the ESB Networks UHF telemetry radio links; Abbeyknockmoy to Castlerea 38kV Substation, and Abbeyknockmoy to Glenamaddy 38kV Substation.

1.1 Mitigation Measure Solutions

To offset the impact of the turbines on the ESB Networks radio links the following mitigation solutions are available:

i) Relocate monopoles at Glenamaddy and Castlerea 38kV Substations

ii) Upgrade the existing UHF polling radio link to an alternative communications link.
(ESB Networks have indicated that they have been engaging in a tender process to replace the existing legacy UHF polling radio network with a 4G broadband network)

These mitigation measures are described in more detail in Sections 1.1.1 and 1.1.2 that follow.

1.1.1 Relocate monopoles at Glenamaddy and Castlerea 38kV Substations.

To increase the distance between the 0.6 Fresnel of the radio links and Turbine T07, the B-ends of the radio links (i.e. the monopoles at Glenamaddy and Castlerea) could potentially be relocated. Figures 1 and 2 below illustrate how moving the monopoles at Glenamaddy and Castlerea could increase the distance between T07 and the radio links.

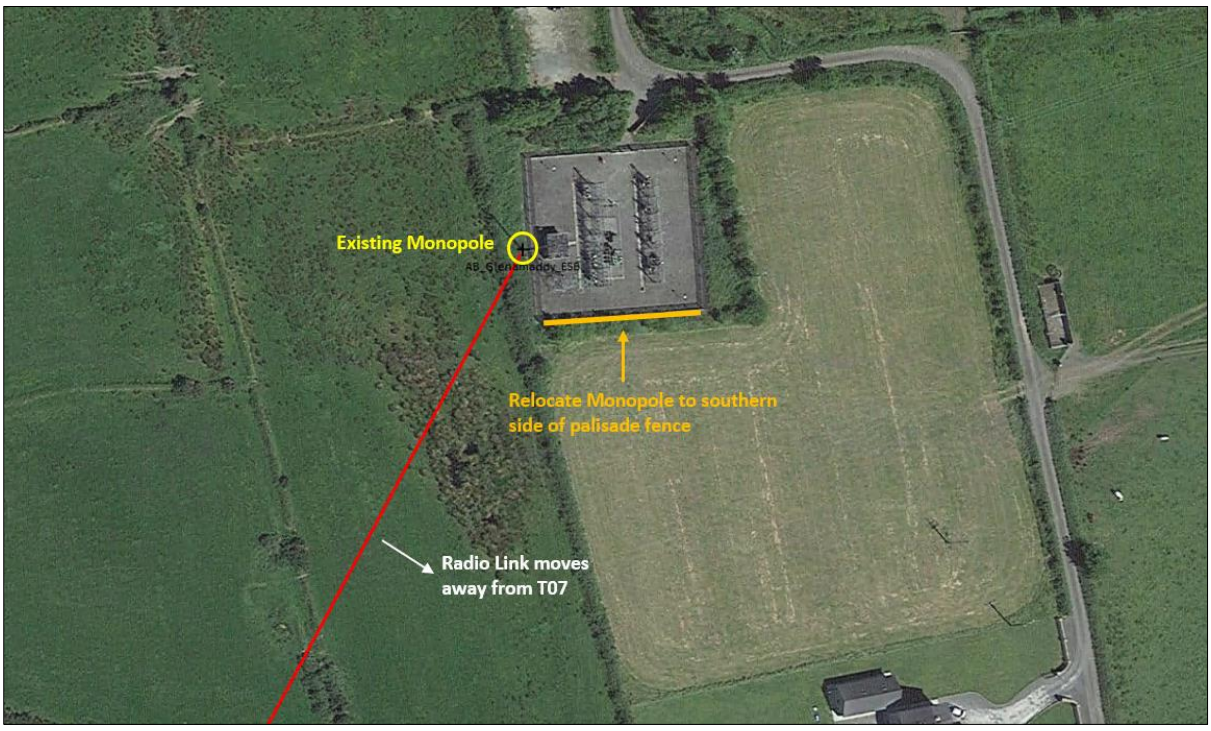

Figure 1. Relocated Monopole - Glenamaddy 38kV

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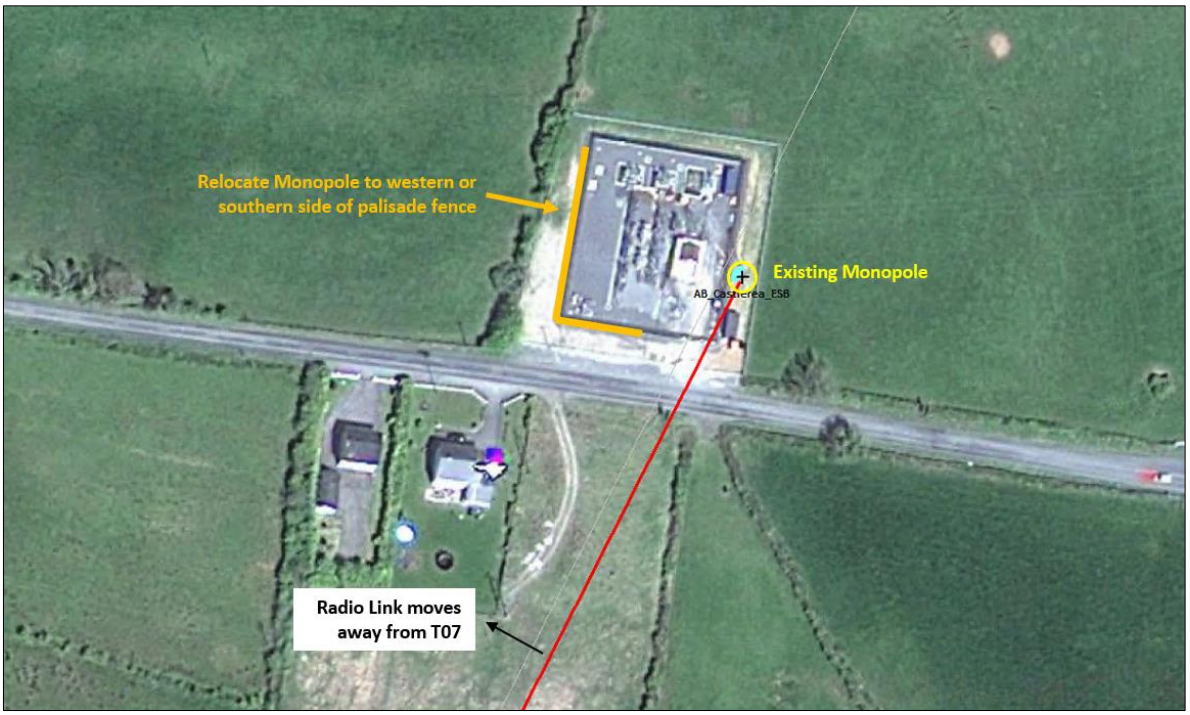

Figure 2. Relocated Monopole - Castlerea 38kV

1.1.2 Upgrade existing UHF polling radio links to an alternative Broadband Communication Technology

Another mitigation measure would be to upgrade the existing UHF links to broadband communications links. Figure 3 below shows an example of a broadband radio antenna installed at an ESB Substation. The technical details associated with this mitigation measure would have to be agreed with ESB Services. The costs associated with this mitigation measure would be covered by the developer. This solution forms the basis of a technology that ESB Networks previously proposed for RFP Tender where they have been engaging in a RFP tender process to replace the existing legacy UHF polling radio network with a 4G broadband network.

Figure 3. Example of a Cellular radio antenna at an ESB Substation

Note: During previous consultations with ESB (regarding a third-party wind farm project), ESB indicated that they had sought response to a RFP Tender to upgrade their UHF telemetry polling radio network to a more modern communications network, such as the one proposed in the mitigation measure above (i.e. a broadband based communications network) .

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Appendix 2

Precedents of ESB UHF links that operate normally even when the Fresnel Zone is significantly obstructed

2. Precedents of ESB UHF links that are operational, with Fresnel Zone obstructed

There are numerous instances of ESB UHF links that are operational even though their Fresnel Zone is significantly obstructed. The examples shown below (Section 2.1 to 2.9), are taken from a Telecoms Impact Study which was conducted to assess the impact of a proposed wind farm (Oatfield, Co Clare) on existing UHF links. The examples illustrate that UHF radio links can operate normally even when the Fresnel Zone is significantly obstructed.

2.1 ESB Link 2 Analysis (Ennis North – Oatfield PMP Link 458 MHz)

During the Field Survey of the Ennis North 38 kV site, it was found that there is a directional UHF antenna aligned in the direction of the ESB High Site at Oatfield (Figure 24).

Figure 1. UHF Antenna at Ennis North 38 kV Site.

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The Path Profile for the Ennis North 38 kV to Oatfield UHF Radio Link is shown below in Figure 25. The profile shows that terrain and buildings near the Ennis end of the link are partially blocking the radio link path. This is further illustrated in the 3D model shown in Figure 26.

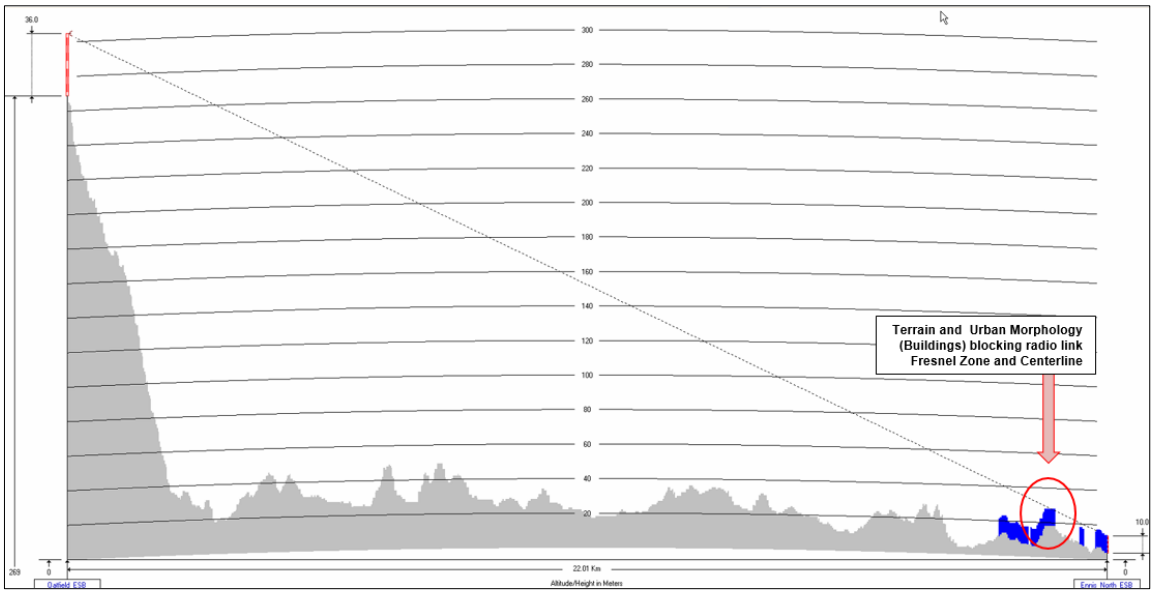

Figure 2. Ennis North 38 kV – Oatfield High-Site Radio Link Path Profile.

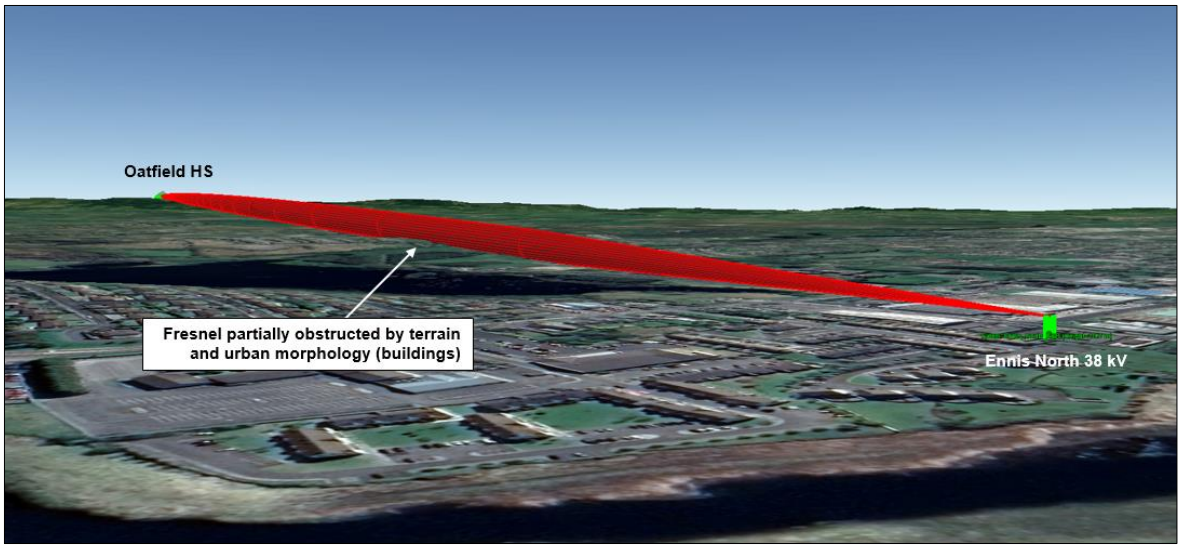

Figure 3. Ennis North 38 kV – Oatfield High-Site Radio Link Model

The Figure below shows the proposed turbine layout relative to a UHF radio link from Ennis North to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

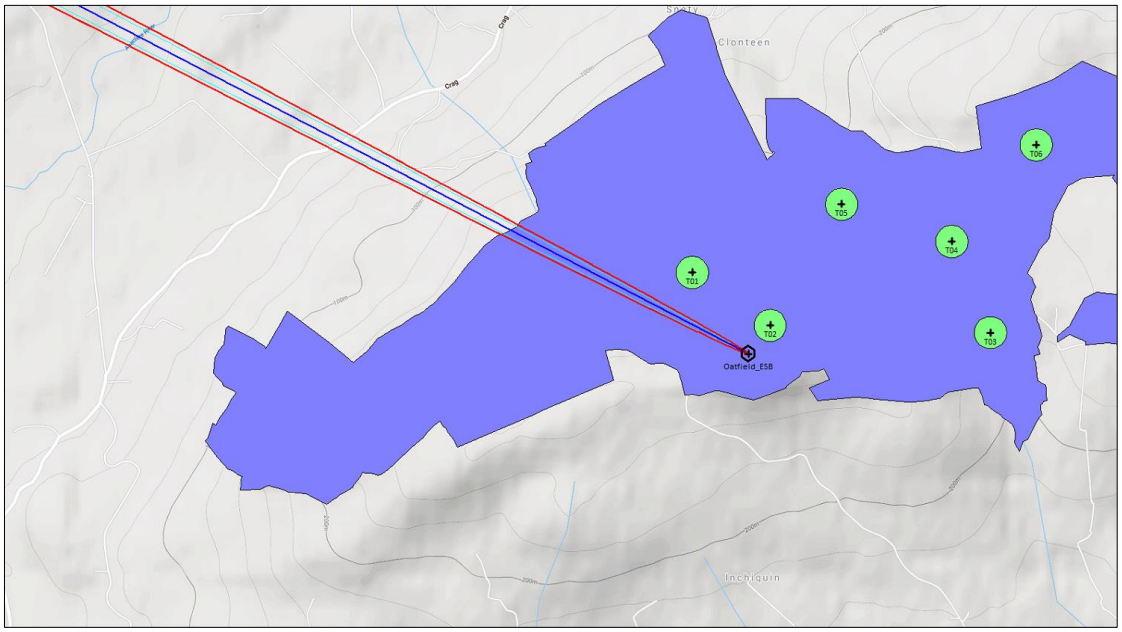

Figure 4. Close-up Plan View of Ennis North – Oatfield High Site Radio Link

Analysis Results:

Table 14 below provides a brief summary of the Network Analysis findings for ESB Link 2.

Wind Farm Impacts	No impacts
Exclusion Zone	None.
Mitigation Measures	None.

Table 1. ESB Link 2 (Ennis North 38 kV) – Analysis Summary

2.2 ESB Link 3 Analysis (Corrawarrin – Oatfield PMP Link 458 MHz)

During the Field Survey of the Corrawarrin 38 kV site, it was found that there was no UHF antenna on the site. However, the surveyor did observe a 3G/4G Broadband antenna installed on the building (Figure 29). This 3G/4G Broadband service is possibly being used as a substitute for a UHF connection onto the ESB network.

Figure 5. Roadside View of Corrawarrin 38kV site.

Figure 6. 3G/4G Broadband Antenna at Corrawarrin 38kV site.

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The Path Profile for the Corrawarrin 38 kV to Oatfield UHF Radio Link is shown below in Figure 31. The profile shows that terrain and buildings near the Corrawarrin end of the link are partially blocking the radio link. This is further illustrated in the 3D model shown in Figure 32.

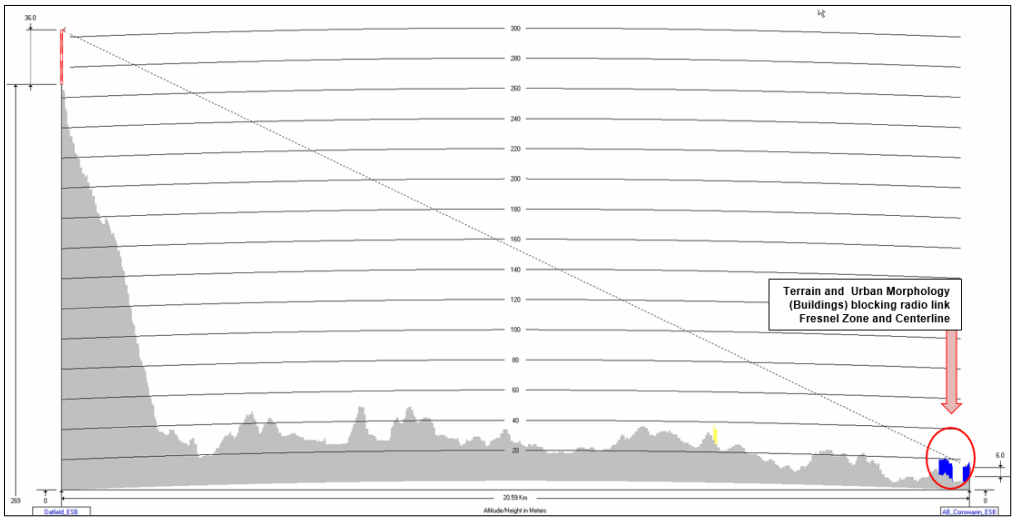

Figure 7. Corrawarrin 38 kV – Oatfield High-Site Radio Link Path Profile.

Figure 8. Corrawarrin 38kV – Oatfield High Site Radio Link Model

Analysis Results:

Table 15 below provides a brief summary of the Network Analysis findings for ESB Link 3.

Wind Farm Impacts	No impacts on 4G\LTE communications system (No existing UHF PMP radio link at Corrawarrin 38kV site)
Exclusion Zone	None Required.
Mitigation Measures	None Required.

Table 2. ESB Link 3 (Corrawarrin 38kV) – Analysis Summary

2.3 ESB Link 4 Analysis (Tulla – Oatfield PMP Link 458 MHz)

During the Field Survey of the Tulla 38 kV site, it was found that there is a directional UHF antenna aligned in the direction of the ESB High-Site at Oatfield (Figure 33). However, it should be noted that is a hill approximately 2km from the Tulla 38 kV site, which completely obstructs the line-of-sight to Oatfield.

Figure 9. UHF Antenna at Tulla 38 kV site (aligned into hillside).

The Path Profile for the Tulla 38 kV to Oatfield UHF Link I shown below in Figure 34. The profile shows that terrain near the Tulla end of the link is completely obstructing the existing radio link path. This is further illustrated in the 3D model shown in Figure 35.

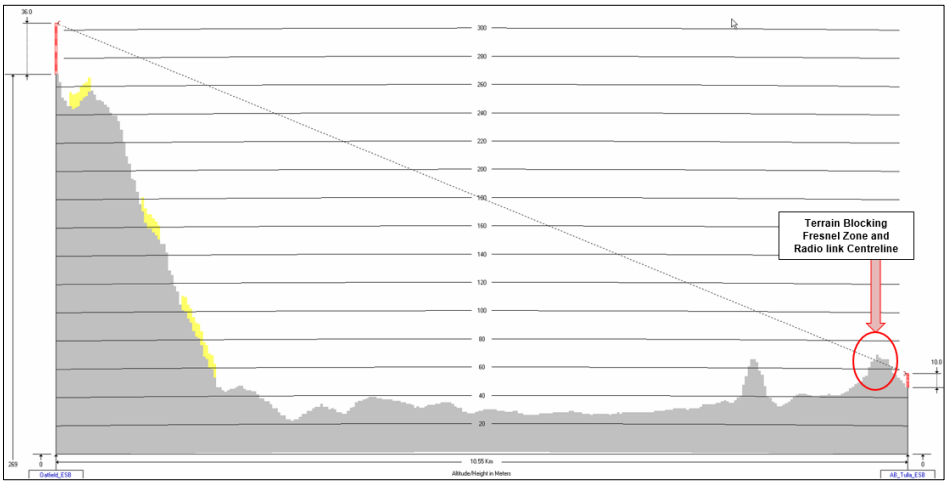

Figure 10. Tulla 38 kV – Oatfield High-Site Radio Link Path Profile.

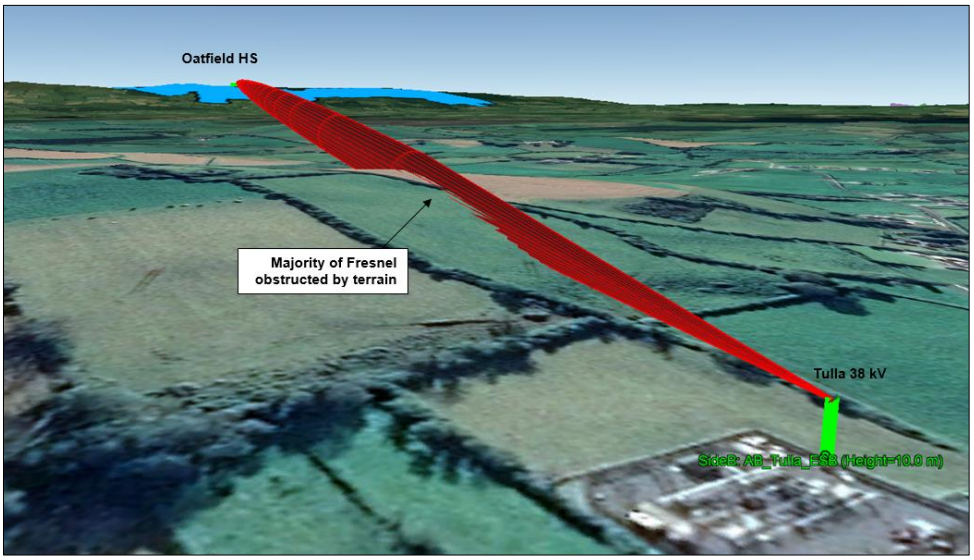

Figure 11. Tulla 38 kV – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Tulla to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

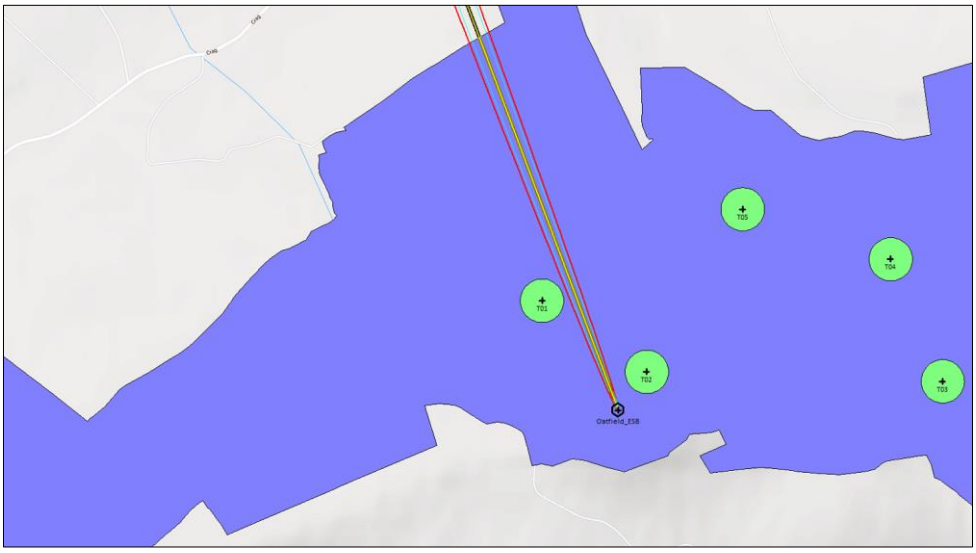

Figure 12. Close-up Plan View of Tulla 38 kV – Oatfield High Site Radio Link

Analysis Results:

Table 16 below provides a brief summary of the Network Analysis findings for ESB Link 4.

Wind Farm Impacts	No Impacts
Exclusion Zone	None
Mitigation Measures	None.

Table 3. ESB Link 4 (Tulla 38 kV) – Analysis Summary

2.4 ESB Link 5 Analysis (Aughinish – Oatfield PMP Link 458 MHz)

During the Field Survey access to the Aughinish facility was not possible; however the Field Surveyor was able to see that there was a directional UHF antenna which appeared to be aligned in the direction of the ESB High-Site at Oatfield.

Figure 13. UHF Antenna at Aughanish 38 kV Site.

The Path Profile for the Aughinish to Oatfield UHF Radio Link is shown below in Figure 38. The profile shows that there are no obstructions (terrain or buildings) blocking the radio link path. This is further illustrated in the 3D model shown in Figure 39.

Figure 14. Aughinish – Oatfield High-Site Radio Link Path Profile.

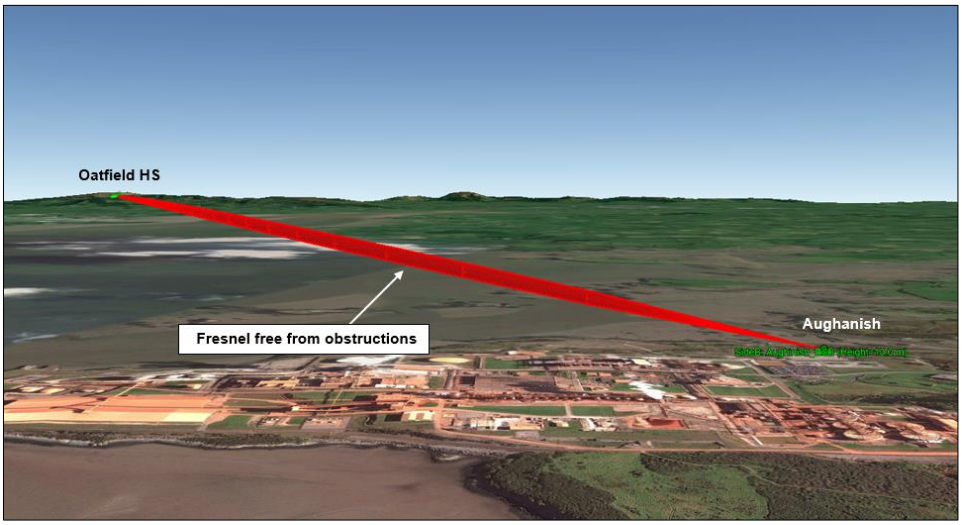

Figure 15. Aughanish – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Aughanish to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

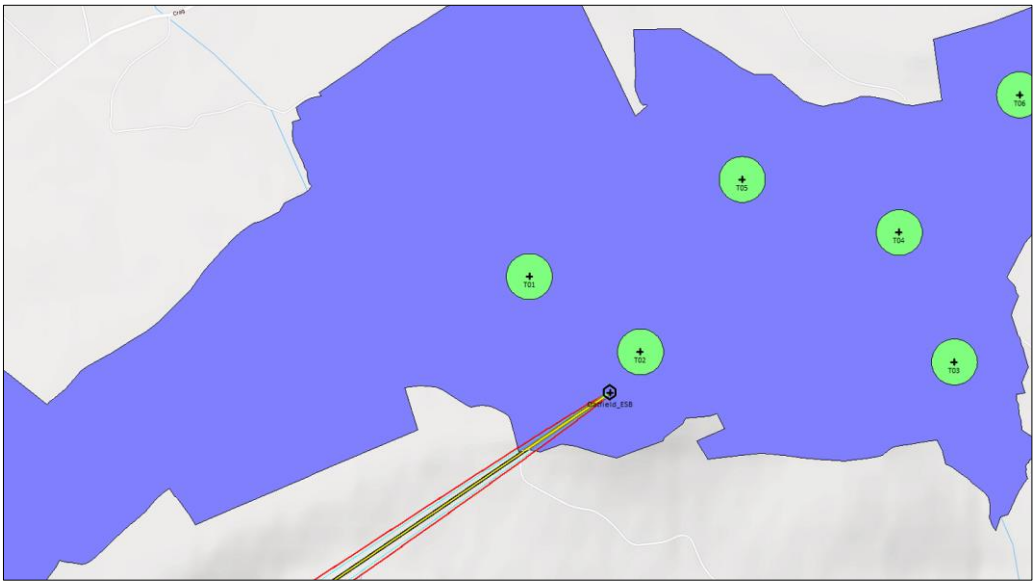

Figure 16. Close-up Plan View of Aughanish – Oatfield High Site Radio Link

Analysis Results:

Table 17 below provides a brief summary of the Network Analysis findings for ESB Link 5.

Wind Farm Impacts	No Impacts.
Exclusion Zone	None.
Mitigation Measures	None.

Table 4. ESB Link 5 (Aughinish) – Analysis Summary

2.5 ESB Link 6 Analysis (Cahircalla – Oatfield PMP Link 458 MHz)

The Field Survey of Cahircalla found that there was a UHF antenna at the site; however, the antenna appeared to be misaligned and pointing into Trees / Buildings. The misalignment was almost 20 degrees from the correct bearing to the ESB High-Site at Oatfield.

Figure 17. UHF Antenna at Cahircalla Site

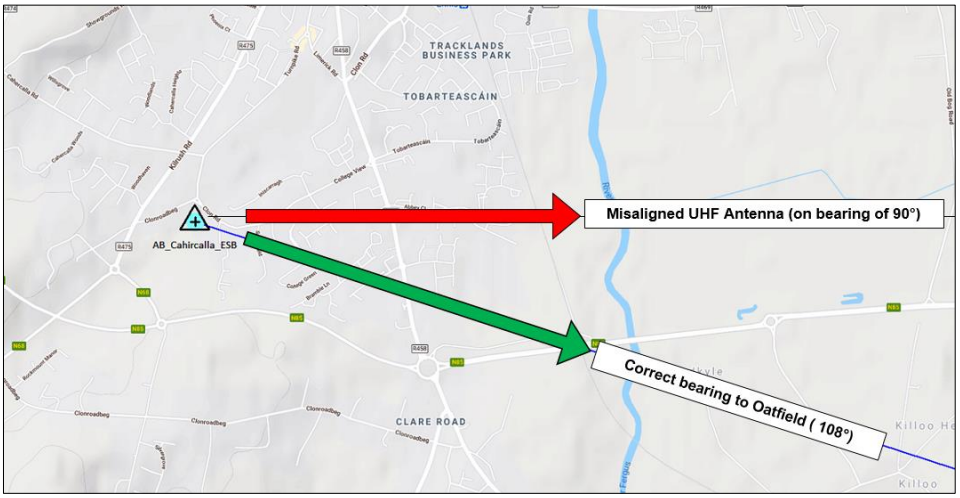

Figure 18. Illustration showing misalignment of Cahircalla UHF Antenna

The Path Profile for the Cahircalla to Oatfield UHF Radio Link is shown below in Figure 43. The profile shows that there is urban morphology (buildings/trees) blocking the radio link path. This is further illustrated in the 3D model shown in Figure 44.

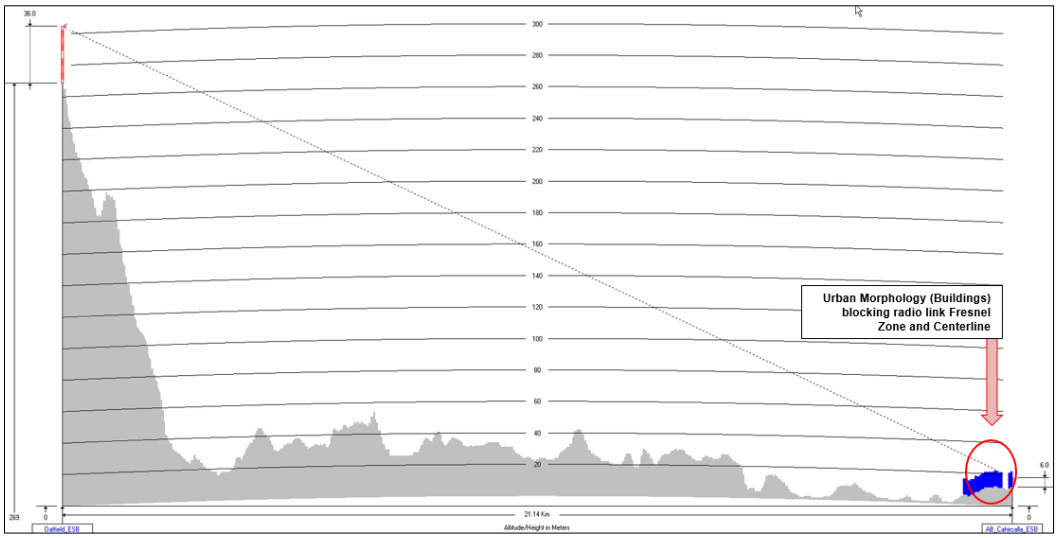

Figure 19. Cahircalla – Oatfield High-Site Radio Link Path Profile.

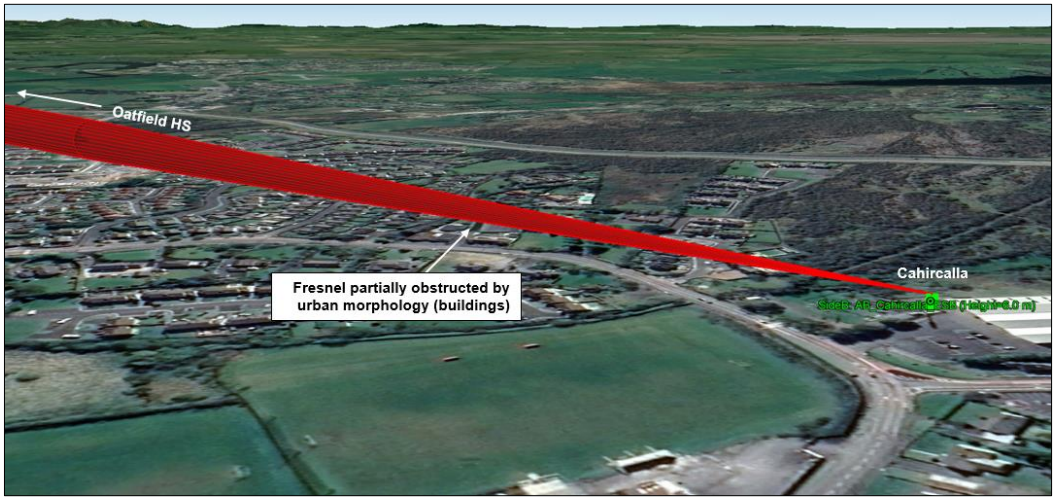

Figure 20. Cahircalla – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Cahircalla to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

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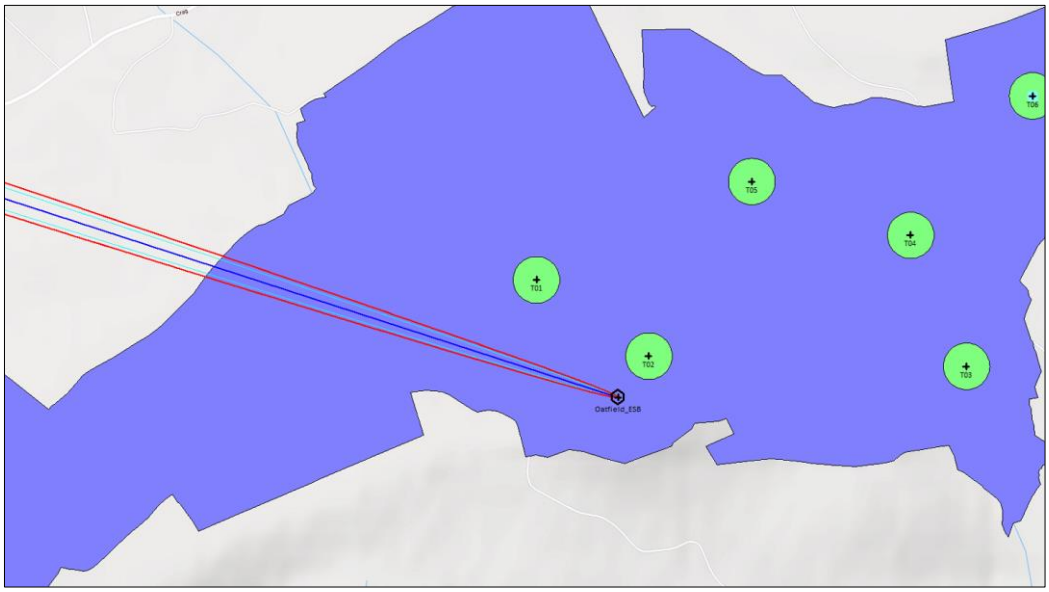

Figure 21. Close-up Plan View of Cahircalla – Oatfield High Site Radio Link

Analysis Results:

Table 18 below provides a brief summary of the Network Analysis findings for ESB Link 6.

Wind Farm Impacts	No Impacts.
Exclusion Zone	None.
Mitigation Measures	None.

Table 5. ESB Link 6 (Cahircalla) – Analysis Summary

2.6 ESB Link 7 Analysis (Clarecastle – Oatfield PMP Link 458 MHz)

During the Field Survey of the Clarecastle 38 kV site, it was found that there is a directional UHF antenna aligned in the direction of the ESB High-Site at Oatfield (Figure 46).

Figure 22. UHF antenna at Clarecastle 38 kV site.

The Path Profile for the Clarecastle to Oatfield UHF Radio Link is shown below in Figure 47. The profile shows that there is terrain and urban morphology (buildings/trees) blocking the radio link path. This is further illustrated in the 3D model shown in Figure 48**.**

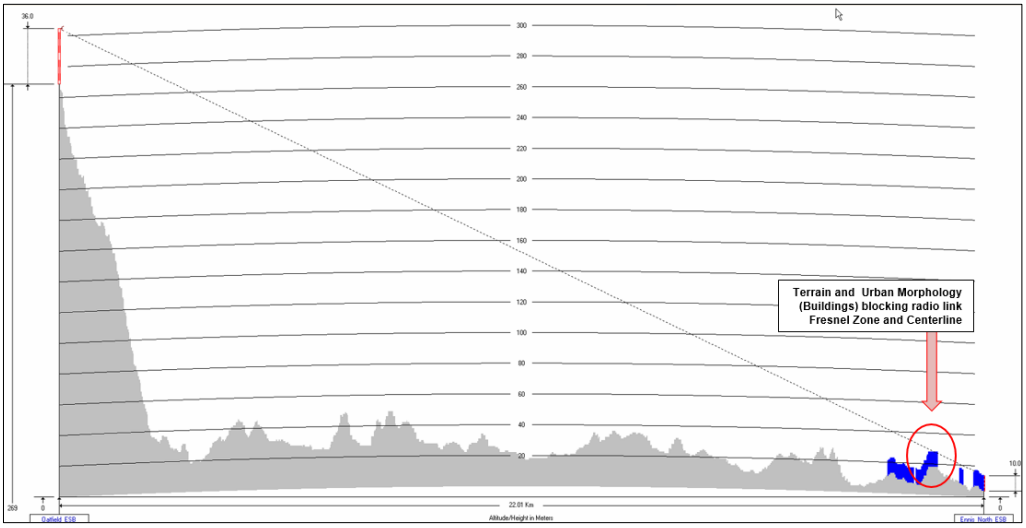

Figure 23. Clarecastle 38 kV – Oatfield High-Site Radio Link Path Profile.

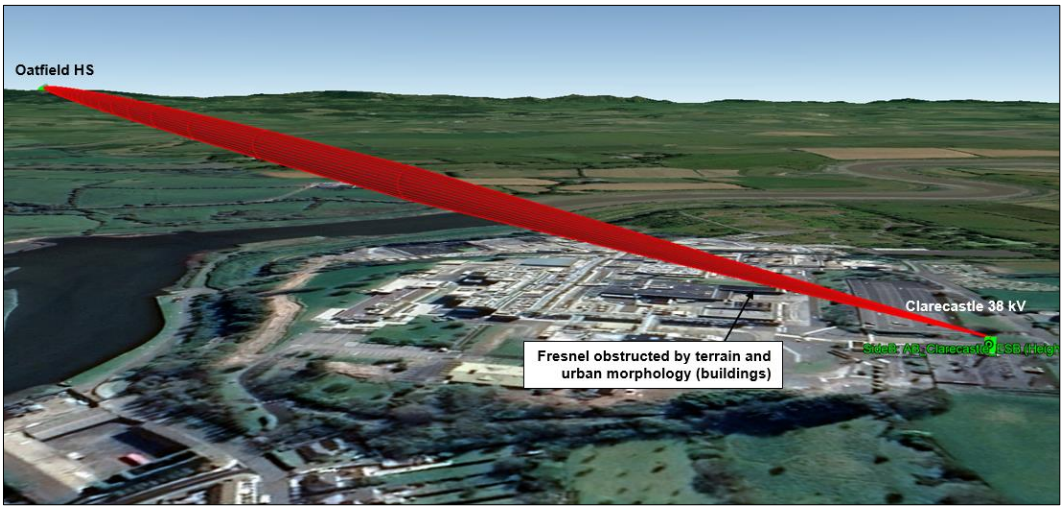

Figure 24. Clarecastle 38kV – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Clarecastle to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

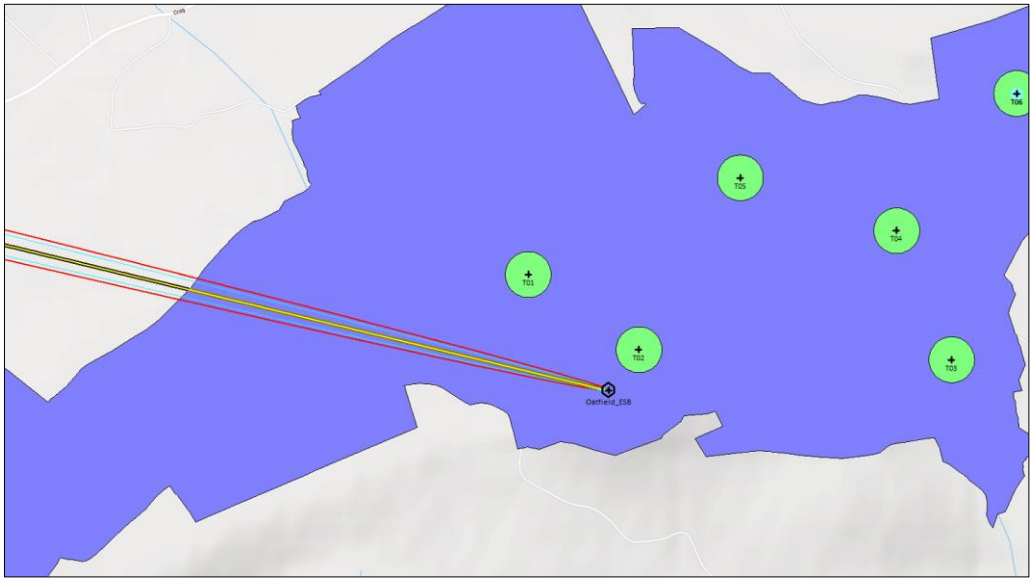

Figure 25. Close-up Plan View of Clarecastle 38 kV – Oatfield High Site Radio Link

Analysis Results:

Table 19 below provides a brief summary of the Network Analysis findings for ESB Link 7.

Wind Farm Impacts	No Impacts.
Exclusion Zone	None.
Mitigation Measures	None.

Table 6. ESB Link 7 (Clarecastle 38kV) – Analysis Summary

2.7 ESB Link 8 Analysis (Drumquin – Oatfield PMP Link 458 MHz)

During the Field Survey of the Drumquin 38 kV site, it was found that there is a directional UHF antenna aligned in the direction of the ESB High-Site at Oatfield (Figure 50).

Figure 26. UHF Antenna at Drumquin 38 kV site.

The Path Profile for the Drumquin to Oatfield UHF Radio Link is shown below in Figure 51. The profile shows that the radio path is largely clear of any obstructions (terrain or buildings). This is further illustrated in the 3D model shown in Figure 52.

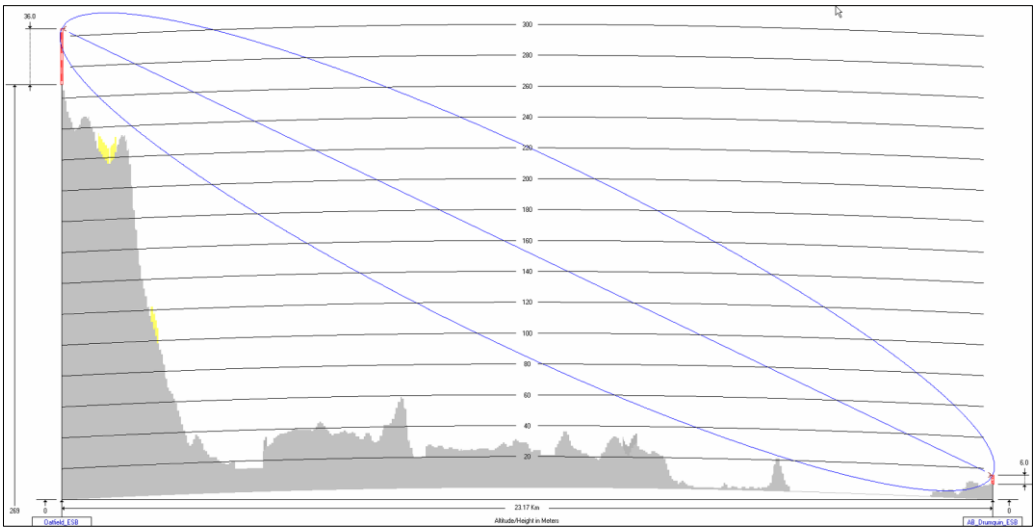

Figure 27. Drumquin 38 kV – Oatfield High-Site Radio Link Path Profile.

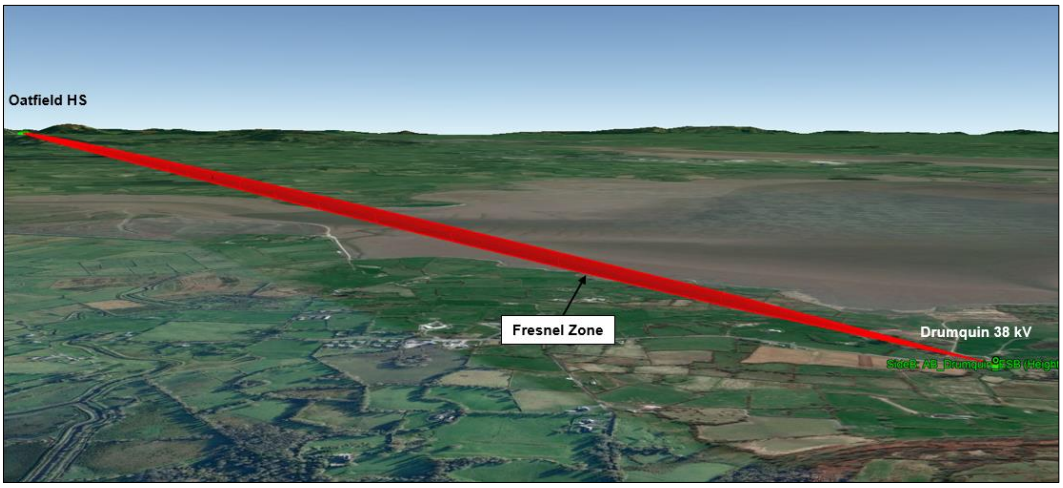

Figure 28. Drumquin 38kV – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Drumquin to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

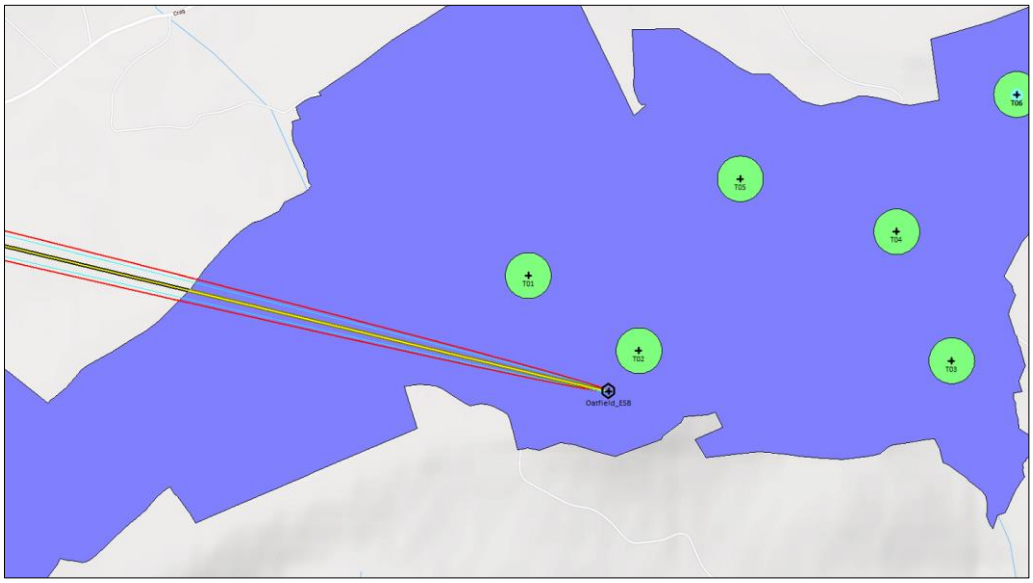

Figure 29. Close-up Plan View of Drumquin 38 kV – Oatfield High Site Radio Link

Analysis Results:

Table 20 below provides a brief summary of the Network Analysis findings for ESB Link 8.

Wind Farm Impacts	No Impacts.
Exclusion Zone	None.
Mitigation Measures	None.

Table 7. ESB Link 8 (Drumquin 38kV) – Analysis Summary

2.8 ESB Link 9 Analysis (Foynes – Oatfield PMP Link (458 MHz))

During the Field Survey of the Foynes 38 kV site, it was found that there is a directional UHF antenna aligned in the direction of the ESB High-Site at Oatfield (Figure 54).

Figure 30. UHF Antenna at Foynes 38 kV site.

The Path Profile for the Foynes to Oatfield UHF Radio Link is shown below in Figure 55. The profile shows that there are no obstructions (terrain or buildings) blocking the radio link path. This is further illustrated in the 3D model shown in Figure 56.

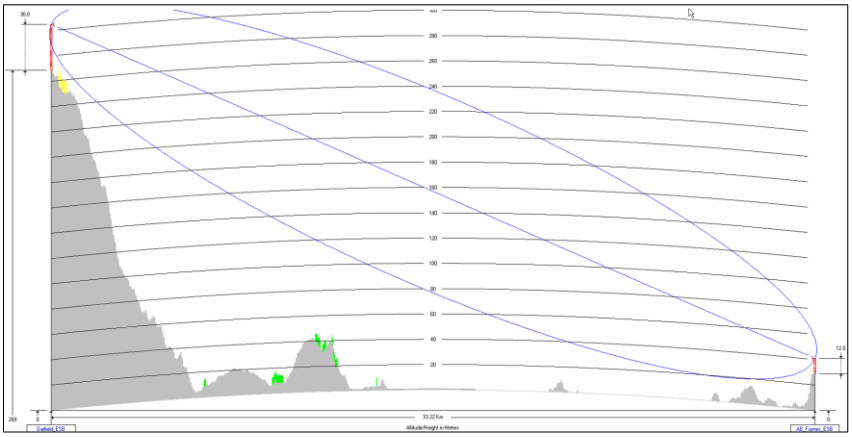

Figure 31. Foynes 38 kV – Oatfield High-Site Radio Link Path Profile.

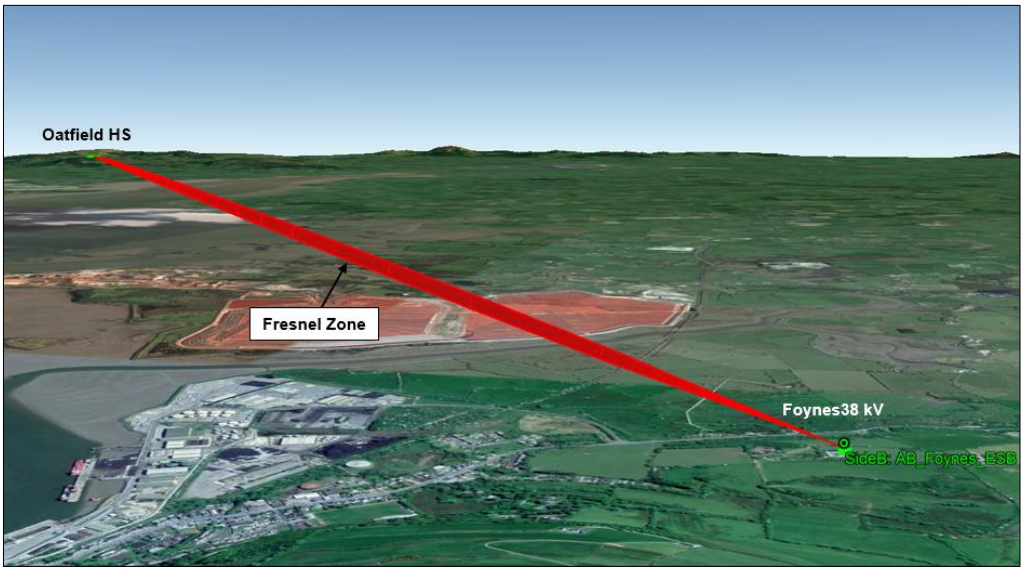

Figure 32. Foynes 38kV – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Foynes to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

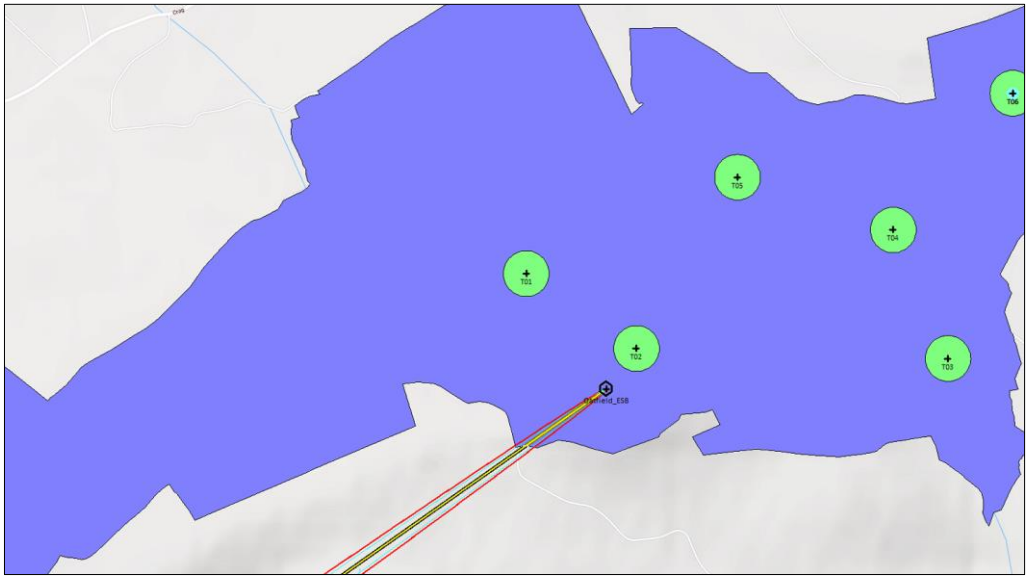

Figure 33. Close-up Plan View of Foynes 38 kV – Oatfield High Site Radio Link

Analysis Results:

Table 21 below provides a brief summary of the Network Analysis findings for ESB Link 9.

Wind Farm Impacts	No Impacts.
Exclusion Zone	None.
Mitigation Measures	None.

Table 8. ESB Link 9 (Foynes 38kV) – Analysis Summary

2.9 ESB Link 10 Analysis (Rineanna – Oatfield PMP Link 458 MHz)

During the Field Survey of the Rineanna 38 kV site, it was found that there is a directional UHF antenna aligned in the direction of the ESB High-Site at Oatfield (Figure 58).

Figure 34. UHF Antenna at Rineanna 38 kV site.

The Path Profile for the Rineanna to Oatfield UHF Radio Link is shown below in Figure 59. The profile shows that there is urban morphology (buildings/trees) blocking the radio link path. This is further illustrated in the 3D model shown in Figure 60**.**

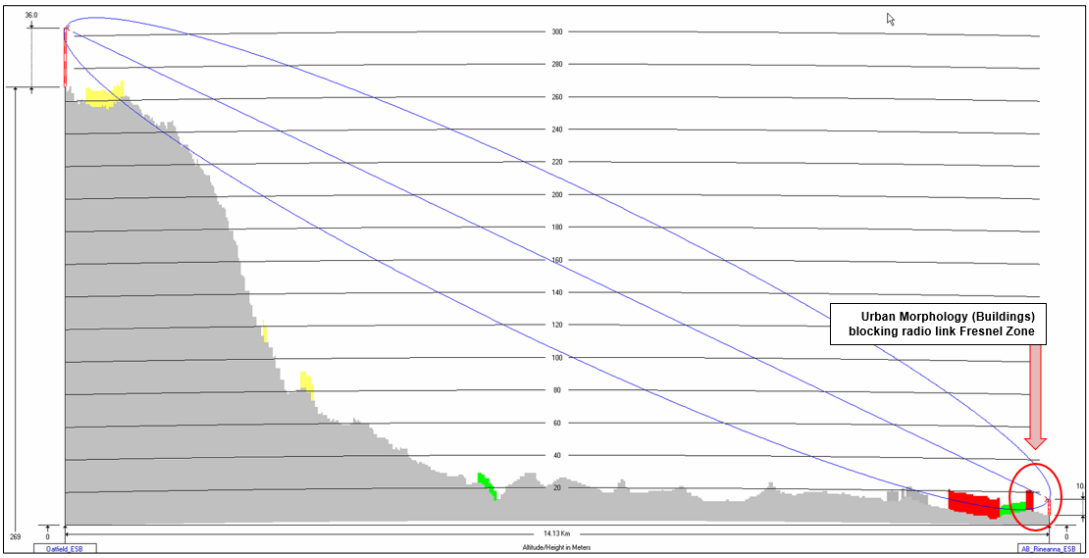

Figure 35. Rineanna 38 kV – Oatfield High-Site Radio Link Path Profile.

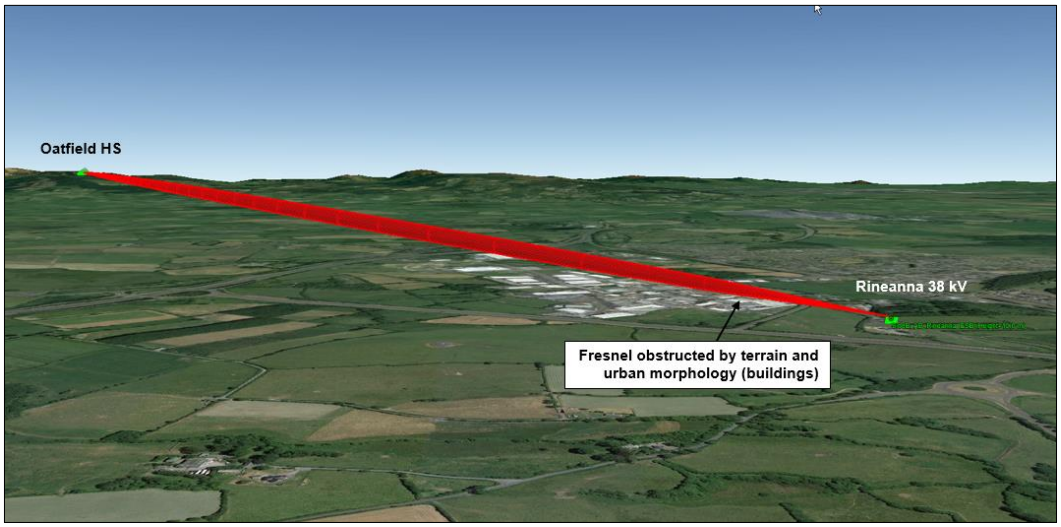

Figure 36. Rineanna 38kV – Oatfield High-Site Radio Link Model.

The Figure below shows the proposed turbine layout relative to a UHF radio link from Rineanna to the Oatfield High Site. As the figure shows the PMP radio path would not be obstructed by any of the proposed turbines.

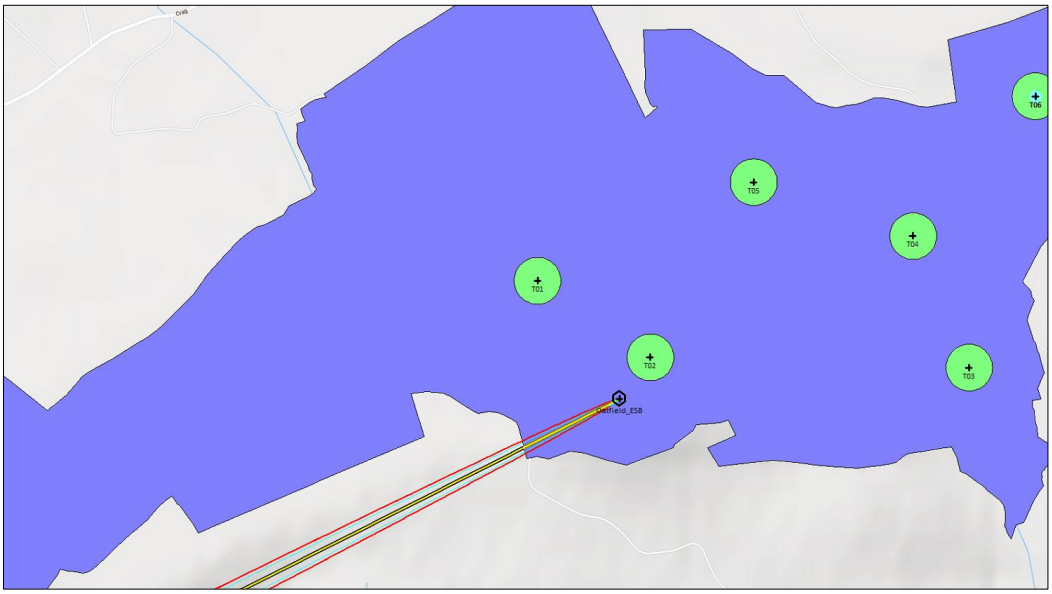

Figure 37. Close-up Plan View of Rineanna 38 kV – Oatfield High Site Radio Link

Analysis Results:

Table 22 below provides a brief summary of the Network Analysis findings for ESB Link 10.

Wind Farm Impacts	No Impacts.
Exclusion Zone	None.
Mitigation Measures	None.

Table 9. ESB Link 10 (Rineanna 38kV) – Analysis Summary

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Appendix 3

Precedent - Mitigation Measure Proposal presented to ESB Networks for a wind farm which was subsequently granted planning permission.

3. Precedent of ESB Mitigation Measure proposal presented to ESB Networks for a wind farm which was subsequently granted planning permission

The example provided below in Section 3.1, is an extract taken from a Telecoms Impact Study which was carried out to assess the potential impact of a proposed wind farm (Firlough, Co Mayo) on an existing ESB UHF radio link. In the example, it is again illustrated that a UHF radio link is unlikely to be impacted by the proposed turbine, and that UHF radio links can operate normally even when the Fresnel Zone is obstructed. However, to mitigate any potential impacts due to the proposed turbines, a mitigation measure was prepared and presented to ESB Networks. The proposed wind farm was subsequently granted Planning Permission.

3.1 ESB Link Analysis (Fiddandarry SS – Ballina AO)

Figure 5 below shows a Plan View of the ESB PMP radio link from Fiddandarry Substation to Ballina Area Office (AO).

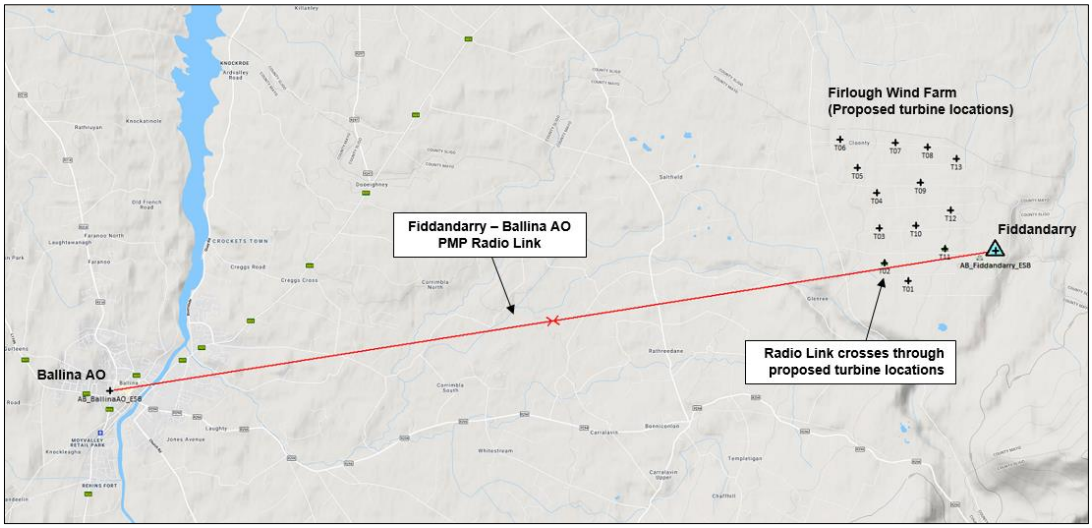

Figure 38. Plan View of ESB's PMP radio link between Fiddandarry Substation and Ballina AO.

To assess the potential impact of the proposed turbines on this radio link, a 3D analysis of the radio link was carried out. Topology and Morphology layers were modelled for the 3D analysis and the International Telecommunication Union - Radio Communication (ITU-R) Rec. 526-11/Cascade Knife Edge method was used for calculations.

Note: When assessing impacts on radio links the 2nd Fresnel Zone is used to provide a worse-case-scenario; however, most Telecom Operators including statutory bodies accept that low frequency links (< 1Ghz) will not be impacted if the obstruction (e.g. turbine or terrain) is outside the 0.6 Fresnel Zone of the radio link.

The analysis findings when considering the Worst-Case Scenario 2nd Fresnel Zone and the Critical 0.6 Fresnel Zone are provided in Sections 5.1.1 and 5.1.2 respectively.

** The Desktop Survey Analysis findings are subject to accuracy of the information (GPS co-ordinates, turbine dimensions, etc.) provided to Ai Bridges.*

3.1.1 2nd Fresnel Zone Analysis

Network analysis calculations indicate that (in its current location) turbine T02 would obstruct the 2nd Fresnel Zone of ESB radio link by a distance of 8.47m.

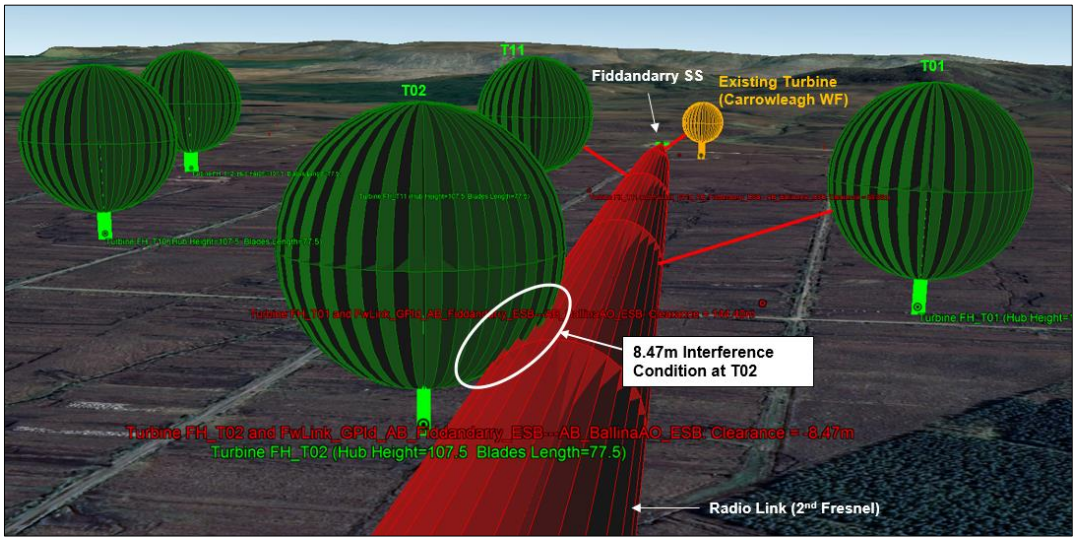

Figure 39. 3D Model showing proposed turbines relative to ESB radio link – 2nd Fresnel Zone

Although network analysis indicates that Turbine T02 will obstruct the 2nd Fresnel Zone of the ESB link by 8.47m, it should be noted that the 2nd Fresnel Zone of the radio link is already significantly impeded by existing terrain, as shown below in Figure 7.

The analysis indicates that any impact due to turbine T02 would be relatively small when compared the existing impact of the obstruction due to terrain.

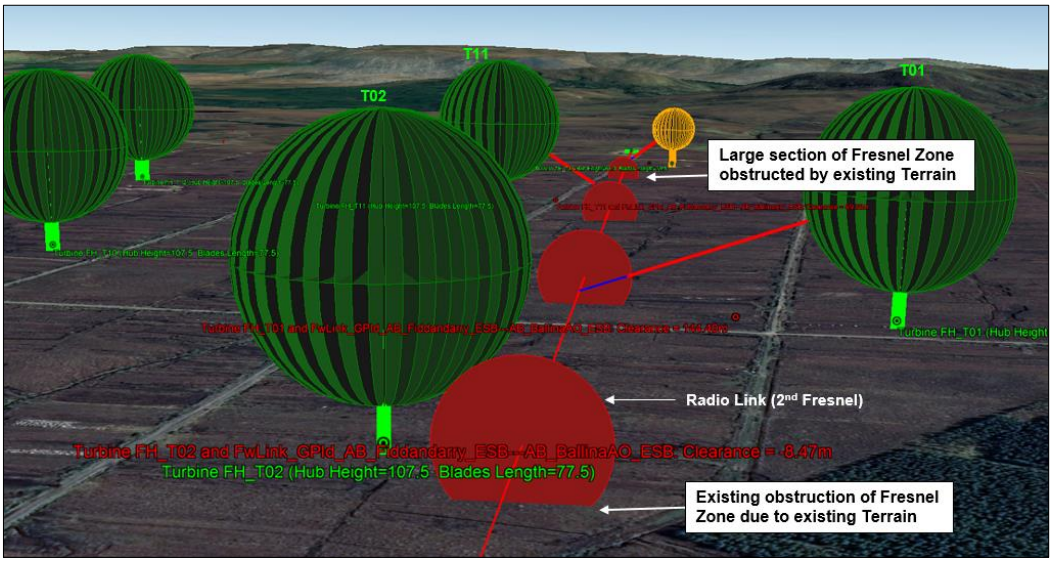

Figure 40. 3D Model showing 2nd Fresnel of ESB radio link is already obstructed by terrain.

3.1.2 0.6 Fresnel 1 Zone Analysis

As previously stated, most Telecom Operators, including statutory bodies accept that a link will not be impacted if the obstruction (e.g. turbine or terrain) is outside the 0.6 Fresnel Zone of the radio link. When considering a 0.6 Fresnel Zone there will be a Clearance Condition of 11.48 m to turbine blade-tip of T02.

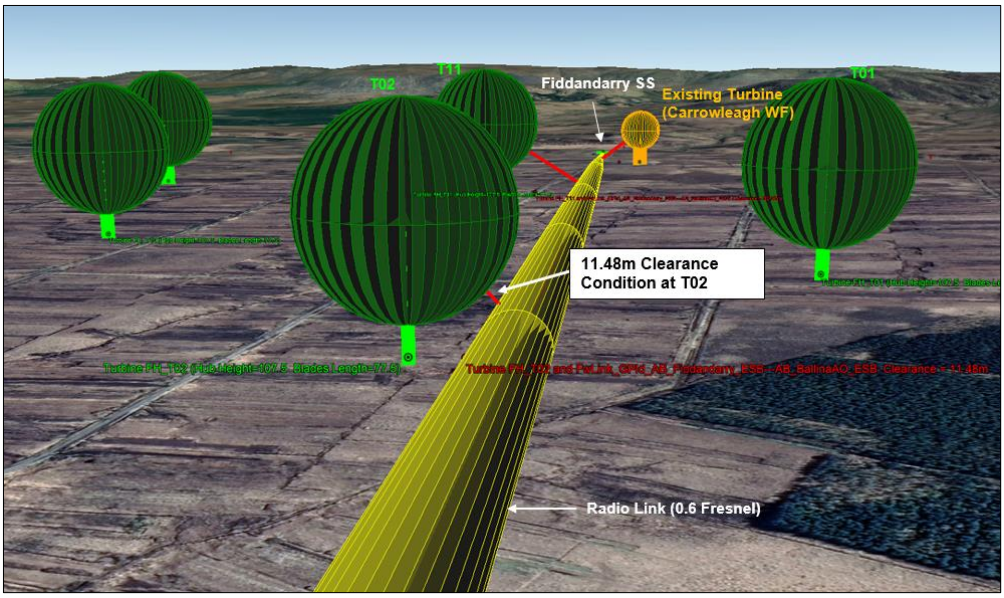

Figure 41. 3D Model showing proposed turbines relative to ESB radio link – 0.6 Fresnel Zone

When considering the 0.6 F1 (0.6 of the 1st Fresnel Zone) , the accepted industry standard model developed by Huygens\Kirchoff and adopted by Telecom Operators that there should be no obstructions inside this critical zone), the proposed turbines will have no impact on the ESB radio link. It should also be noted that while the proposed turbines will not obstruct the 0.6 Fresnel Zone, there is already some obstruction due to local terrain as shown in Figure 9.

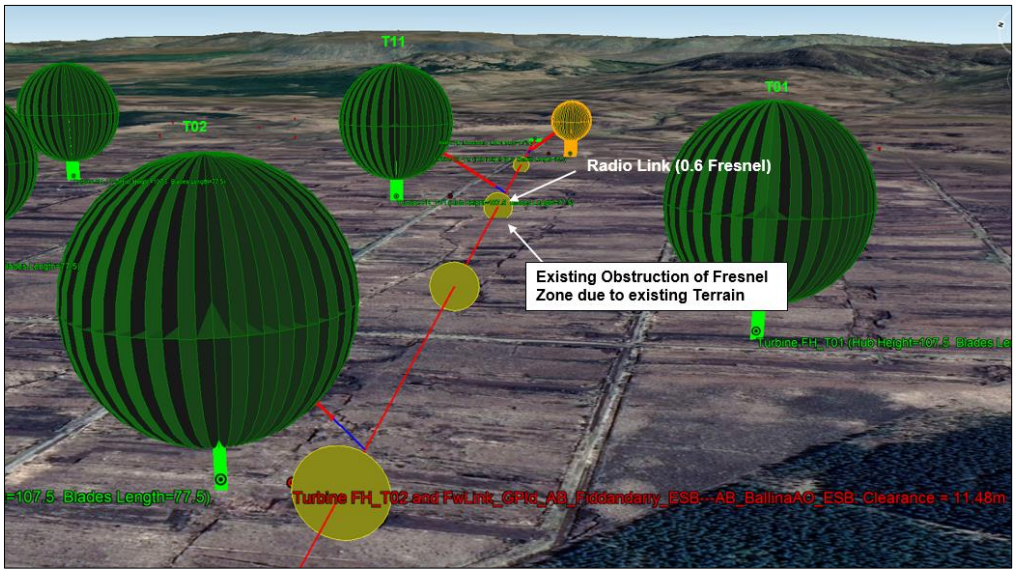

Figure 42. 3D Model showing 0.6 F1 of the ESB radio link is already obstructed by terrain.

The Radio Link Path Profile shown below in Figure 10 shows that there is an infringement of 5.387m into the 0.6 F1 Zone **due to existing terrain**. This infringement occurs at 13.01 km from the Ballina AO end of the link (or 0.63 km from Fiddandarry SS).

The Radio link Path Profile report is included in Appendix C

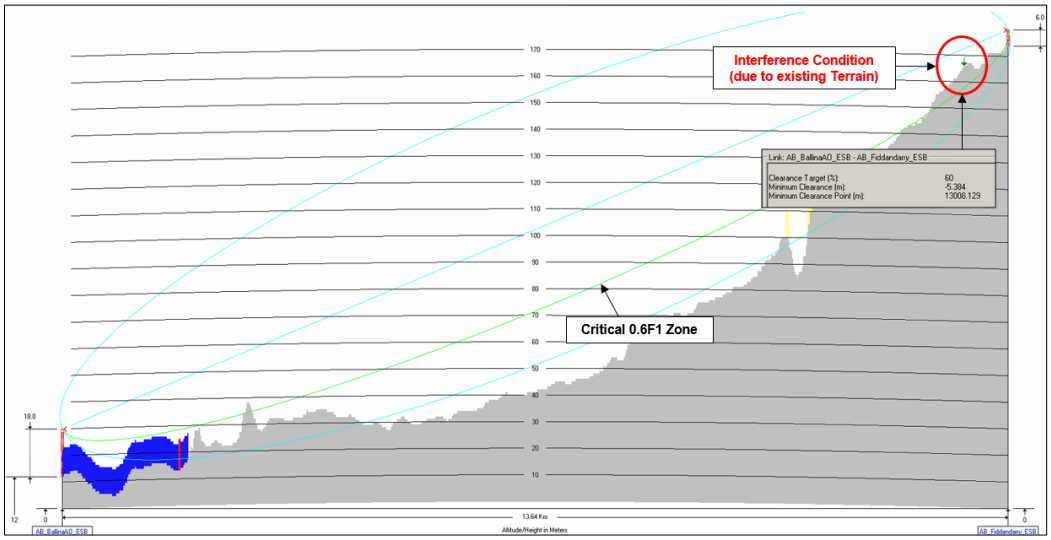

Figure 43. Path Profile showing 0.6 F1 of the ESB radio link is already obstructed by terrain

3.2 Radio Link Analysis Summary

A summary of the Baseline Telecommunications Impact Analysis is provided in Section 5.2.1 which summarizes the impact of the existing turbine at Carrowleagh wind farm and the impact of the terrain along the radio link. In Section 5.2.1 a summary of the Proposed Turbines Impact Analysis is provided. The results for the Worst-Case Scenario 2nd Fresnel Zone are presented along with the more generally accepted 0.6 F1 Fresnel Zone.

Note: The 0.6 F1 Fresnel Zone (or 60% of the 1st Fresnel Zone) has also been stated as being the assessment method used by JRC who provided an EMI assessment report to ESB (See Appendix B).

5.2 Diffraction Clearance zone calculation.

The Diffraction Clearance assessment used by JRC is that the no part of the windfarm turbine should encroach on the appropriate Fresnel clearance zone given in Table 5.1 : Fresnel Clearance Zones.

Frequency	Clearance criteria
UHF	60% of the 1st Fresnel zone
1 to 3 GHz	1st Fresnel zone
Microwave Links > 3 GHz	2nd Fresnel zone

Table 5.1 : Fresnel Clearance Zones

Figure 44. Extract from JRC report stating that the 0.6 F1 Zone should be used for UHF Links

3.3 Provision of Relay Mast South of Turbine T02.

An option of offset any potential impact of T02 on the ESB communications link would be to provision a relay mast-structure adjacent to turbine T02. This would require a telecoms mast or mono-pole structure to be erected ~130m from T02, which would provide an alternative telecommunication site to ESB so that the turbines would not obstruct radio the radio signal path. An outdoor cabinet would also be required to house the radio indoor equipment and electrical power supply, which could be taken from T02.

Figure 12 below illustrates how a relay mast could be used to mitigate against an obstructing turbine. Figure 13 show example structures that could be used at a relay mast-site.

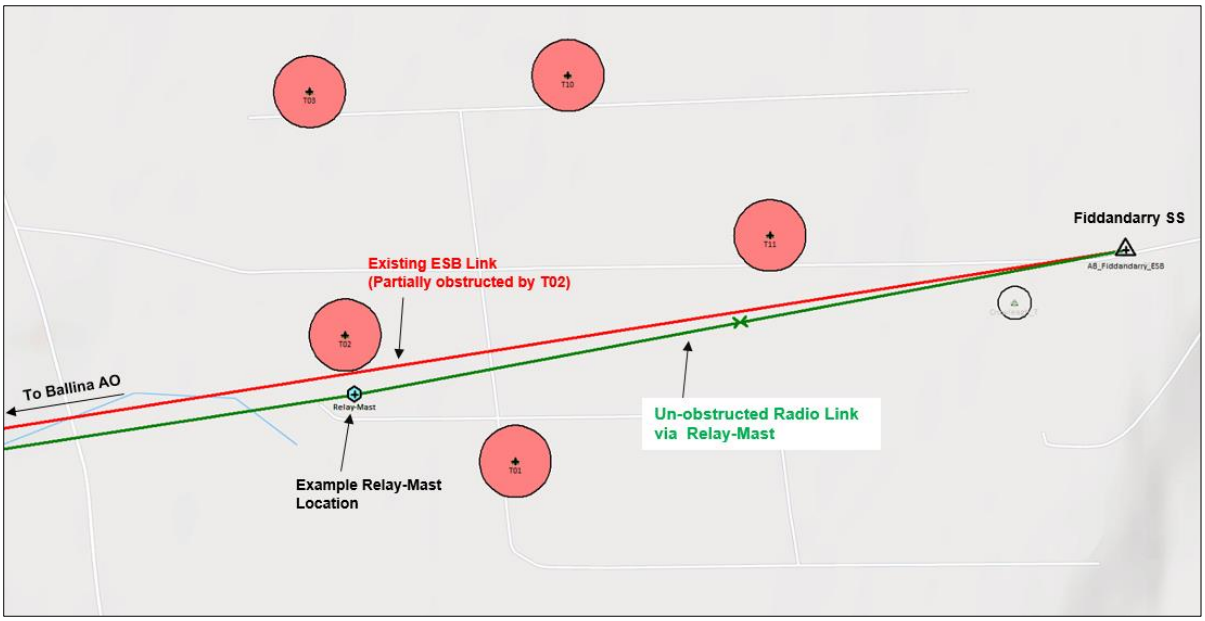

Figure 45. Example of a relay mast used to mitigate against an obstructing turbine.