



Chapter 13: Telecommunications & Aviation

Coolglass Windfarm EIAR Vol 2.

Coolglass Wind Farm Limited

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SLR Project No.: 501.V00727.00006

23 June 2023

Revision: 3.0

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
0.1 (Internal)	5 March 2023	GOR	CL	CL
1.0 (Client Issue)	23 March 2023			CL
1.1 (Revision)	26 May 2023	GOR	CL	CL
2.0 (Client Issue)	26 May 2023			CL
2.1 (Revision)	20 June 2023	GOR, CL		
3.0 (Final)	23 June 2023			CL

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13.0 Introduction

This chapter has been prepared to assess the likely potential impact of the Proposed Development, County Laois, on local telecommunications services and aviation. The potential impacts associated with the Proposed Development are considered. Mitigation measures will be implemented to avoid or reduce any likely significant effects.

13.1 Statement of Authority

This chapter of the EIAR was completed by Gerald O'Reilly and Crystal Leiker.

- Gerald is a qualified Town Planner (MIPI) with 14 years experience in large scale project management and EIAR and ES production in Ireland and Northern Ireland, including Strategic Infrastructure development. He holds a BSc Spatial Planning from Technical University Dublin and a PD in Public Management from the University of Ireland. He has 1 year experience preparing telecommunications and aviation EIAR chapters.
- Crystal is a qualified (MIPI) Town Planner with 8 years experience in large scale tourism, renewable energy and minerals projects including project management, EIA production and coordination. She holds a B.Soc.Sc and MPLAN, both from University College Cork. She has 8 years of experience preparing telecommunications and aviation EIAR chapters.

13.2 Methodology and Guidance

This section of the assessment focuses particularly on the scoping and consultation exercise conducted with telecommunications operators and aviation authorities. Scoping was carried out in line with EPA guidelines¹, and the 'Best Practice Guidelines for the Irish Wind Energy Association'², which provides a recommended list of telecommunications operators for consultation.

A full description of the scoping and consultation exercise is provided in Chapter 2 of this EIAR. Consultation with the telecommunications operators and aviation bodies informed part of the constraints mapping process, which in turn informed the layout of the Proposed Development, as described in Chapter 3 of the EIAR.

The following assessment methodology was applied in this assessment:

- Wide ranging consultation with all known telecommunications operators (TO's) that could potentially be affected by the Proposed Development.
- Consultation with the Irish Aviation Authority
- Comprehensive data gathering exercise to establish all known telecommunications links in the area
- Preparation of constraint mapping using data collected from the TO's, to identify separation distance of the Proposed Development from existing telecommunications links and masts and if necessary, identify mitigation measures.
- Identification of aerodromes and airports in proximity to the Proposed Development.

¹ EPA, (2022) 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'

² Irish Wind Energy Association, 2012



- Review of turbine delivery route in the context of overhead power and telecommunication lines.

13.2.1 Background and Potential Effects

This chapter assesses the Proposed Development in accordance with section 3.1 and 3.1.1 of chapter 3 in this EIAR. Minimum and maximum hub height and rotor diameter parameters are proposed and all design permutations within that range as set out in Table 3.1 of Chapter 3 in this EIAR are being applied for.

Two cable connection route options (Options 1 and 2) which are part of the “Project” but not part of the Proposed Development that are being applied for are also assessed as part of this EIAR.

All elements of the Project are described in Section 3.5 of this EIAR and the description of the Proposed Development is found in section 3.8.1 of this EIAR.

13.2.1.1 Electromagnetic Interference

In the context of Proposed Development, electromagnetic interference is the impact of a Proposed Development on existing telecommunication services resulting in an unacceptable negative impact. The rotating blades of a wind turbine can occasionally cause interference to electro-magnetically propagated signals. Such interference could, in theory, affect all forms of electromagnetic communications including:

- Satellite communications
- RADAR
- Cellular radio communications
- Aircraft instrument landing systems
- Air traffic control
- Terrestrial telecommunication links
- Television broadcasts.

Impacts on aviation are considered in Section 13.4.2 of this Chapter.

For the purposes of the telecommunications impact assessment, point-to-point and point-to-multipoint signals are considered, both are used extensively throughout Ireland.

Point to point (or line of sight) is a wireless telecommunications transmission link between two nodes located at specified fixed points. The term telecommunications link relates to the wireless transmission of data via radio frequencies between two fixed points. Telecommunications towers are generally used to transmit and receive signals over large distances. Radio frequency bands above 1 GHz are referred to as microwave radio links and are commonly used by telecommunications operators. These ‘links’ are used mainly by mobile phone operators, broadcasters and utilities or emergency service providers, to provide transmission networks that are flexible and cost effective.

Point to multipoint refers to the situation where a central node transmits to, and receives from, a number of independent locations. This includes television and radio broadcasting and reception, mobile phones (to the mobile phone mast) and land mobile systems. This assessment will identify whether houses require remedial measures in relation to television reception.

Section 5.10 of the DoEHLG Planning Guidelines on Wind Energy Developments (2006) [hereafter referred to as “the guidelines”] states that:



“wind turbines, like all electrical equipment, produce electromagnetic radiation, and this can interfere with broadcast communications. The interference with broadcast communication can be overcome by the installation of deflectors or repeaters. Planning authorities should advise the developer to contact the individual broadcasters, both national and local, and inform them of the proposals. A list of the licensed operators is available on the ComReg website at www.comreg.ie. Mobile phone operators should also be advised of the proposed development.”

Section 7.15 of the guidelines state

“Conditions regarding measures to be taken to minimise interference with the transmission of radio and television signals, air and sea transport communications and other transmissions systems in the area may be necessary. Where electromagnetic interference is difficult to predict, conditions may require the developer to consult with the service provider concerned and undertake remedial works to rectify any interference caused.”

On that basis, consultation was carried out with all known TOs that could potentially be affected by the Proposed Development.

The telecommunications network is constantly evolving and the following factors could affect local telecommunications signals:

- The network topology is likely to change significantly over time as a result of technological advances including migration towards 4G and the impending 5G networks
- Network operators are beginning to share services and consolidate the existing network which is likely to lead to an increase in the number of redundant and decommissioned services.

A key objective of the assessment process is to identify turbines in close proximity to existing masts and telecommunication links with a view to relocating turbines that could potentially impact on local telecommunication operations and by designing the development to avoid telecommunications links. If a turbine could not be relocated due to other site constraints, further consultation was carried out with the affected TO's to consider the potential impact and agree an appropriate mitigation strategy if required. On that basis, obtaining the cooperation of the TO's was a key aspect of the process to enable the Proposed Development to be developed without adversely affecting existing telecommunications services. There is no set guidance on separation distances from communications masts and wind turbines. All TO's were provided a set of coordinates of each turbine at the scoping stage of the Proposed Development to ascertain if there were any potential impacts envisaged from each TO.

While we have endeavoured to consult with operators in the area to identify and discuss potential impacts, it is possible that telecommunication services in the immediate vicinity of the turbines could require mitigation measures to negate any potential impact. Accordingly, under 2RN, the Developer has given an undertaking to cover the cost of implementing the necessary mitigation measures to prevent any degradation of service, if any, that is currently provided. It is worth noting that without direct feedback from a TO and without direct guidance on the assessment of the significance of effect on TO's, using an assessment of significance in this chapter is considered inappropriate given the subjective nature of the feedback provided by each TO. The relevant TO's that could potentially be affected the Proposed Development, based on consultation responses and desktop study are shown in **Table 13-1**.



13.2.2 Telecommunications Methodology

This section presents the methodology used in assessing the potential impact from the Proposed Development on local telecommunications services. The following sources of information were considered in this assessment:

- The design layout of the Proposed Development
- Published literature as described below
- A desk-based assessment of the existing telecommunications network, including the Comreg website, and cellmapper.net.

The following assessment methodology was applied in this assessment:

- Wide ranging consultation with all known telecommunications operators (TO's) that could potentially be affected by the Proposed Development.
- Comprehensive data gathering exercise to establish all known telecommunications links in the area
- Preparation of constraint mapping using data collected from the TO's, to identify turbines within specified separation distance from existing telecommunications links and masts.
- Undertaking by the Developer to implement an appropriate mitigation strategy, in conjunction with the relevant TO, to eliminate any anticipated or residual impacts.

13.2.3 Relevant Guidance

A review of relevant planning and policy documents was undertaken to identify relevant objectives relating to telecommunication. The following documents have been adhered to:

- 'Wind Energy Development Guidelines', published by the Department of the Environment, Heritage and Local Government (2006).
- 'Best Practice Guidelines for the Irish Wind Energy Industry', published by the Irish Wind Energy Association (2012).
- 'Tall structures and their impact on broadcast and other wireless services', published by Ofcom, a regulatory body independent from UK Government (2009).
- 'RF Measurement Assessment of Potential Proposed Development Interference to Fixed Links and Scanning Telemetry Devices', published by ERA on behalf of Ofcom (2009).

In addition to the above the policies contained in the Laois County Development Plan 2021 – 2027 have also been applied.

13.3 Scoping and Consultation

In accordance with the Wind Energy Guidelines (WEG) 2006 as part of the EIAR scoping and consultation exercise, consultation was undertaken to provide information on the Proposed Development to all relevant telecommunications and broadcasting service providers and all relevant aviation authorities to discuss concerns and the potential for benefits of the Proposed Development. A Scoping Report was sent as part of this consultation which at the time, only considered the design permutation of a 180m tip height and 155m rotor diameter, however; it is noted that the height and exact location of the obstacle has the potential for effects. The service providers were provided with the locations of the proposed turbines and asked to advise whether any impact could occur to their networks. A copy of the letter issued by SLR Consulting is



provided in Technical Appendix 13.1 found in Volume III of this EIAR. A similar letter was sent to the other consultees.

Consulted stakeholders include authorities with associated telecommunication infrastructure, wireless broadcasters, cellular network providers, broadband suppliers and wireless internet service providers (WISP). A full list of those consulted is detailed in **Table 13-1** below.

The responses received from the telecommunications, broadcasters and aviation consultees are summarised in **Table 13-1**:



Table 13-1 Consultation Responses Received

Telecommunications Operations	Response Date	Impact Identified by Consultee	Further Comments
Arra Communications	N/A	No response received	No response received
Broadcasting Authority of Ireland	17/06/2022	The BAI does not perform an in-depth analysis of the effect of wind turbines on FM networks. They are not aware of any issues from existing windfarms into existing FM networks. Also, the Proposed Developments are not located close to any existing or planned FM transmission sites.	No response received
BT Communications Ireland Ltd	N/A	No response received	No response received
Commission for Communication Regulation	20/06/2022	Acknowledgement. No further response received.	No response received
Department of Communications, Climate Action and Environment	20/06/2022	Acknowledgement. No further response received	No response received
Department of Defence	27/10/2022	Based on the information supplied and having consulted with the subject matter experts in the Irish Air Corps, the Department of Defence wishes to make the following observation: Single turbines, structures, or turbines delineating the windfarm should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or of a type visible to Night Vision equipment. Obstacle lighting must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light.	No response received
Digiweb Dublin Offices and Data Centre	N/A	No response received	No response received
Dublin Airport Authority	N/A	No response received	No response received
Echo IT Limited	N/A	No response received	No response received



Telecommunications Operations	Response Date	Impact Identified by Consultee	Further Comments
EIR	N/A	No response received	No response received
ESB Telecoms	20/06/2022	Do not carry out any scoping for Proposed Developments.	No response received
Irish Rail	N/A	No response received	No response received
Irish Aviation Authority	N/A	No response received	No response received
Irish Broadband/Imagine	N/A	No response received	No response received
Irish Telecom	N/A	No response received	No response received
Magnet Networks	N/A	No response received	No response received
Premier Broadband	N/A	No response received	No response received
Ripplecom	20/06/2022	Auto response.	No response received
RTE/2RN	21/06/2022	There is no risk of interference to our fixed linking. We are concerned about the risk to broadcast services in the area and would request that the attached protocol be signed between 2rn and the Developer should the site go ahead.	2RN Protocol agreement required. This is shown in Appendix 13.2
Telecommunications Section, An Garda Siochana	N/A	No response received	No response received
TETRA Ireland Limited	N/A	No response received	No response received
Three	N/A	No response received	No response received
TowerCom Limited	N/A	No response received	No response received
Virgin Media	N/A	No response received	No response received
Vodafone	N/A	No response received	No response received



Telecommunications Operations	Response Date	Impact Identified by Consultee	Further Comments
Wireless Connect Limited	N/A	No response received	No response received



Several TO's provided a response. The responses received following consultations with the relevant bodies and the issues that they raised, are summarised in section 13.3.1.

13.3.1 Scoping Responses

13.3.1.1 Broadcasting Authority of Ireland

The Broadcasting Authority of Ireland stated that they are "*not aware of any issues from existing wind farms into existing FM networks.*" BAI also stated that "*the proposed windfarms are not located close to any existing or planned FM transmission sites.*" No impacts of the Proposed Development are anticipated on broadcasters.

13.3.1.2 2RN/RTE

Two rounds of scoping consultation were undertaken with 2RN, the broadcasting arm of RTE. During the first round, 2RN's scoping response noted that two turbines were of concern which might impact the DTT path between their sites at Mt Leinster and Arklow and might impact the broadcasting signal to the northeast area of the turbines within the service area of Mt. Leinster by way of interference. Pre-submission some of the turbine locations were changed to address these concern and the new turbine locations (which are the proposed locations in this planning application) were provided. The new turbine locations were provided to 2RN in March 2023. 2RN noted in this instance that no turbines were of concern; however, a 2RN Protocol agreement was requested to be signed between the developer and 2RN should the development go ahead.

13.4 Potential Impacts

The Irish Wind Energy Association (IWEA) 2012 guidelines, "Best Practice Guidelines for the Irish Wind Energy Industry", indicate that wind turbines within 20 km of a radio navigation aid can have the potential to cause electro-magnetic interference with these signals.

Interference to a communication system can occur in the following ways:

- Electromagnetic fields associated with the wind turbine generator.
- Signal scattering as a result of the obstruction presented by the blades, an effect that mimics the presence of a lower power source operating from the location of the wind turbine
- Signal obstruction as it passes through the area swept by the rotating blade or the tower

Excavation of the cable trenches and jointing bays for Coolglass Wind Farm could potentially damage existing telecommunications cables. Once Coolglass Wind Farm is operational, the potential for a negative impact on telecommunications cables is minimal, as all infrastructure will be in a fixed location.

13.4.1 Telecommunications

In many cases, impacts of the Proposed Development can be sufficiently mitigated by ensuring sufficient separation distance between the turbine and any telecommunications link or mast. No TO's noted an impact on their equipment.

13.4.1.1 Reflection and Signal Scattering

Wind turbines can act as sources of re-radiation producing delayed 'ghost' signals that are modulated in amplitude by the rotation of the blades. Radio waves can be reflected by many surfaces including turbines, reflection can interfere with the quality of the signal.



The amount of interference caused is dependent on a number of different factors. These factors include the following:

- Material used to make the wind turbines;
- Angle of the blades in relation to the incoming signal;
- Direction in relation to the receiving antenna;
- Height;
- Distance from the transmitter;
- Distance from the receiving antenna;
- Meteorological conditions;
- Site topography; and
- Rotor rotation speed.

Signal Obstruction

If an absorbing object such as a wind turbine is placed in the path of a radio wave, obstruction can occur, detrimentally affecting the signal detected at the receiver. This is an impact that needs to be avoided in the case of point-to-point links, unless appropriate mitigation measures are provided to negate the impact.

Electromagnetic Fields

The operation of a wind turbine generator, and associated electrical transmission infrastructure (including the Cable Routes, Substation, collector circuit, internal cabling and all other means of electrical transmission, within and outside of the site), creates an electromagnetic field which can potentially interfere with telecommunication signals. However, electromagnetic field levels in the vicinity of wind turbines are relatively low and diminish rapidly with distance.

Following consultation, details of links from service providers were mapped in order to identify any conflicts. This assessment found that there is sufficient separation distance between the turbines, with the closest links from a service provider being 450 m from the closest turbine. Do Nothing Scenario

If the Proposed Development were not to proceed, there would be no change to the existing telecommunications, broadcasting and aviation operations in the area from the Proposed Development.

13.4.1.2 Construction

Wind Farm

There will be no significant effect on all other telecommunication operations by the Proposed Development. There are no electromagnetic interference impacts associated with the construction phase of the Proposed Development on any other telecommunications and broadcasting in the area.

Turbine Delivery Route

The Turbine Delivery Route (TDR) is to be utilised only during the construction phase and will require temporary works (trimming of trees, temporary removal of signs or street furniture) to facilitate the delivery of the turbines to the Proposed Development site. Once the delivery is



complete, these areas will be reinstated. Impacts on any receptor along the TDR will be short term and insignificant.

Cable Route

The proposed cable route will be constructed underground in the public roadway in short stretches before being reinstated and moving to the next stretch in a “rolling construction” convoy so as to minimise the impact on road users. No equipment is used which will result in signal interference to telecommunications and broadcasting operators in the area. It is considered therefore that there are no construction related impacts on telecommunications and broadcasting interests in the area.

Recreational Amenity Trail

The proposed recreational amenity trail will require the upgrade of existing forestry access tracks in addition to the provision of signage and other ancillary works. The timing of these works will fall after the construction of the Proposed Development and will not involve any equipment known to create signal interference. It is considered that there are no construction related impacts on telecommunications and broadcasting interests in the area.

13.4.1.3 Operational

Consultation regarding the potential for electromagnetic interference from the Proposed Development was carried out with the relevant national and regional broadcasters, fixed line and mobile telephone operators and other operators. No concerns were raised by consultees for the Proposed Development.

Wind Farm

The nearest telecommunication masts are located in the townland of Crissard where 1 no. mast, with 4 no. receivers are located, approximately 450m to the west of turbines 8 and 9, and 2.6km southeast of turbine 7. There are no other masts located in within 5Km of the Proposed Development. This is shown in **Figure 13-1**.

There have been no negative responses from all telecommunications or broadcasting operators in the area. It is considered that the Proposed Development will therefore have no likely significant effect on telecommunication operations. While no negative responses have been received by 2RN, a Protocol Agreement (see Technical Appendix 13.2) has been signed in the event that disruption to signal occurs as a result of the proposed development.

Turbine Delivery Route

As the TDR will be reinstated following construction of the Proposed Development, there will be no operational impacts.

Cable Route

As the proposed cable route will be operating underground, there are no operational related impacts on telecommunications and broadcasting interests in the area.

Recreational Amenity Trail

The recreational amenity trail will be operational, resulting in enhanced amenity usage by visitors in the area who will walk the trails. It is considered that there are no operational related impacts on telecommunications and broadcasting interests in the area.



13.4.1.4 Decommissioning

Wind Farm

The potential for electromagnetic interference from wind turbines occurs only during the operational phase of the development. There are no electromagnetic interference impacts associated with the construction or decommissioning phases of the Proposed Development, and therefore no mitigation required.

Turbine Delivery Route

The proposed TDR will not be utilised for the decommissioning phase.

Cable Route

The proposed cable route will be left in situ underground within the public roadway. There are no decommissioning related impacts on telecommunications and broadcasting interests in the area.

Recreational Amenity Trail

The recreational amenity trail will be left in situ for members of the public to utilise. There are no decommissioning related impacts on telecommunications and broadcasting interests in the area.

13.4.2 Mitigation Measures

Wind Farm

As there is no potential for electromagnetic interference from the Proposed Development on telecommunications. A signed 2Rn Protocol agreement has been issued to 2RN as requested in the event that a signal disturbance is identified following the completion of the construction stage of the Proposed Development, however it is worth noting that as part of the Scoping exercise, no concerns were highlighted by 2RN given the positions of the turbines., Aside from this, there are no mitigation measures proposed for the construction, operation or decommissioning phase of the Proposed Development. Changes in hub height or rotor diameter do not affect the likely operational effect on telecommunication receptors, therefore this assessment applies irrespective of which turbine within the range is installed.

Turbine Delivery Route

Overhead telecommunication lines will be placed underground or reinstated following turbine delivery to the site at the end of the construction phase. No mitigation measures are required.

Cable Route

The proposed cable route will be left in situ underground within the public roadway. There are no telecommunications or broadcasting mitigation measures proposed. In advance of the cable route works an assessment will be carried out to define the precise alignment of the cable route within the corridor which has been assessed. This will include slit trenching with the aim of avoiding existing services in the road.

Recreational Amenity Trail

No mitigation measures are required.



13.4.2.1 Residual Impacts

No residual effects are expected from the wind farm, turbine delivery route, cable route or recreational amenity trail. Changes in hub height or rotor diameter do not affect the likely operational effect on telecommunication receptors, therefore this assessment applies irrespective of which turbine within the range is installed.

13.4.3 Aviation

The development consists of wind turbines with a maximum tip height of 180m. The development is located ca. 30.1 km from Kilkenny Airport. Turbine 03 is the highest elevation with the tip height altitude being 504m. These are shown in **Figure 13-2**.

The potential effects of wind turbines on aviation interests have been widely publicised. There are two dominant scenarios:

- **Physical Obstruction:** turbines can present a physical obstruction at, or close to, an aerodrome or other aviation activity site; and
- **Radar/Air Traffic Services:** turbine induced clutter appearing on a radar display can affect the safe provision of air traffic services as it can mask an unidentified aircraft from the air traffic controller and /or prevent the controller from accurately identifying aircraft under his control. In some cases, radar reflections can affect the performance of the radar itself.

13.4.3.1 Do Nothing Scenario

If the Proposed Development were not to proceed, there would be no change to the existing telecommunications, broadcasting and aviation operations in the area resulting from the proposed development.

13.4.3.2 Construction

Wind Farm

There is potential for aviation impacts during the late construction phase of a Proposed Development Proposed Development and prior to the commissioning of the Proposed Development as the wind turbines are constructed and placed in situ. The turbines could be considered to be an obstacle to low flying craft. No scoping response was received by the IAA or DAA citing any concerns with the Proposed Development, the closest airport to the Proposed Development is Kilkenny Airport, c. 30.1km south, followed by the Naas Airfield c. 42.5 km northeast. Birr Airfield is c. 49.4km northwest. Waterford Airport is located c. 55.6km southwest.

The Irish Aviation Authority (IAA) responded to the Proposed Development scoping request and indicated that, during construction, as part of the conditioning of the Proposed Development, the developer will

"1) agree an aeronautical obstacle warning light scheme for the Proposed Development development", and "2) provide as-constructed coordinates in WGS84 format together with the ground and blade tip height elevations at each wind turbine location" and "3) notify the Authority of intention to commence crane operations with at least 30 days prior notification of their erection."

The Department of Defence responded to the Proposed Development scoping request and indicated that



“Based on the information supplied and having consulted with the subject matter experts in the Irish Air Corps, the Department of Defence wishes to make the following observation:

Single turbines, structures, or turbines delineating the windfarm should be illuminated by Type C, Medium intensity, Fixed Red obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or of a type visible to Night Vision equipment. Obstacle lighting must emit light at the near Infra-Red (IR) range of the electromagnetic spectrum, specifically at or near 850 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light.”

Noting the presence of existing turbines within proximity to the proposed Proposed Development and the distances to existing airports in tandem with no significant concerns raised by the IAA or Department of Defence, it is considered therefore that there will be no significant effect on aviation from the Proposed Development during the construction phase.

Turbine Delivery Route

The proposed Turbine Delivery Route will require some works to facilitate turbine delivery to the site. Turbine delivery itself will occur in the overnight hours when there is little traffic on the roads. Works to facilitate the turbine delivery to the site will involve tree trimming, the removal of signage and temporary road strengthening. None of these activities will have relevance to aviation operators in the area. It is therefore considered that the proposed TDR will not have significant effects on aviation during the construction phase.

Cable Route

As either of the proposed cable route will be constructed underground within the public roadway, there are no construction related impacts on aviation interests in the area.

Recreational Amenity Trail

The proposed recreation trail will be constructed following the erection of turbines in the area. Works will involve strengthening of existing forestry tracks and the installation of signage and ancillary works. None of these works relate to aviation. It is therefore considered there will be no significant effects on aviation during the construction phase.

13.4.3.3 Operational

Wind Farm

The potential for aviation impacts during the operational phase of the Proposed Development are similar to those as set out in the construction impact section. The IAA and Department of Defence have not indicated any significant issues with the proposed turbine locations with the exception of the required lighting discussed in the mitigation measures section set out in section 13.4.2 in this Chapter. It is considered therefore that there will be no significant effect on aviation from the Proposed Development during the operational phase.

Turbine Delivery Route

The proposed Turbine Delivery Route will not be utilised during the operational phase. It is therefore considered that the proposed TDR will not have significant effects on aviation during the operational phase.



Cable Route

As either of the proposed cable routes will be constructed underground within the public roadway, there are no operational related impacts on aviation interests in the area.

Recreational Amenity Trail

The proposed recreation trail will be constructed following the erection of turbines in the area. None of these works relate to aviation. It is therefore considered there will be no significant effects on aviation during the construction phase.

13.4.3.4 Decommissioning

During the decommissioning phase, the turbines will be dismantled and removed from the site, thereby removing all potential obstacles to aviation interests. There will be no significant effects on aviation.

Turbine Delivery Route

As the turbine delivery route will only be used for the construction phase, no significant effects on aviation are envisioned.

Cable Route

Regardless of which cable route is utilised, the proposed cable route will be left in situ underground within the public roadway. There are no decommissioning related impacts on aviation interests in the area.

Recreational Amenity Trail

The recreational amenity trail will remain in situ in the site. There are no decommissioning related impacts on aviation interests in the area.

13.4.4 Mitigation Measures

In line with standard practice with wind farm developments, the coordinates and elevations for turbines will be supplied to the IAA and DAA at the end of the construction phase. If aviation lighting is required by IAA or DAA to affix to the turbines, the developer commits to installing same. The Applicant commits to a planning condition requiring same.

The proposed cable routes will be left in situ underground within the public roadway. There are no aviation related mitigation measures proposed.

13.4.4.1 Residual Impacts

Changes in hub height or rotor diameter do not affect the likely operational effect on aviation receptors, therefore this assessment applies irrespective of which turbine and all permutations within the range is installed. Therefore, the Proposed Development is not likely to give rise to any significant residual effects on aviation.

13.5 Cumulative Impacts

All known existing and Proposed Developments within the study area that could potentially generate a cumulative impact with the Proposed Development during construction, operation and decommissioning were identified and examined as part of this assessment. The full list of Proposed Developments are contained in **Technical Appendix 1.2** found in Volume III of this



EIAR. There will be no cumulative impacts relation to the Proposed Development and surrounding Proposed Developments in relation to telecommunications or aviation.

During the development of any large Proposed Development that holds the potential to effect telecoms or aviation, the Developer is responsible for engaging with all relevant Telecoms Operators and Aviation Authorities to ensure that the proposals will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the Developer for each individual Proposed Development is responsible for ensuring that the necessary mitigation measures are in place. Therefore, as each Proposed Development is designed and built to avoid impacts arising, a cumulative impact is unlikely to arise.

Consultation with telecommunications operators and aviation bodies has been conducted in order to identify any potential effects the Proposed Development may have on telecommunications and aviation. Other existing, consented and planned Proposed Developments have also been examined for potential cumulative impacts to telecommunications and aviation. No potential cumulative impacts have been identified.

13.6 Conclusion

The Proposed Development has been assessed with respect to potential effects on telecommunications and aviation. The assessment was completed through a desktop study to identify nearby infrastructure and through consultation with telecommunications operators and aviation bodies in order to identify any potential effects.

In relation to telecommunication and broadcasting, mitigation by design was used to avoid potential impacts. This was achieved through the identification of constraints and avoidance of placing proposed infrastructure in the path of telecommunications links. The nearest residential receptor is 722m from the nearest turbine, while the nearest TO signal tower is 450m from the nearest turbine (see **Figure 13-1**) This will reduce potential negative effects on receivers. Furthermore an undertaking is provided to 2RN to mitigate against any impacts.

No remedial measures are required given that no negative impacts have been identified. Therefore, no significant residual effects are expected on telecommunications and broadcasting as a result of the proposed development.

In relation to aviation, consultation with nearby airports and airfields did not identify any potential negative effects on their operations. Lighting specified by the Department of Defence will be installed to their specifications. No impacts have been identified therefore there are no residual effects expected on aviation as a result of the Proposed Development.



13.7 References

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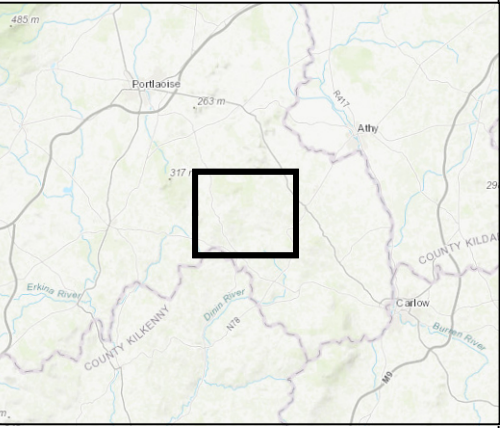


13.8 Figures





- LEGEND**
- Proposed Development Site Boundary
 - Proposed Development Site Boundary 1 km Buffer
 - Proposed Turbine Layout
 - Proposed Substation Compound
 - Proposed Temporary Construction Compound
 - Proposed Borrow Pit
 - + Telecommunication Mast



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**COOLGLASS WIND FARM
 ENVIRONMENTAL IMPACT
 ASSESSMENT REPORT**

TELECOMMUNICATIONS AND AVIATION

TELECOMMUNICATION LINKS

FIGURE 13-1

Scale 1:30,000 @ A3 Date JUNE 2023

02036.00787.0115.0 Telecommunication Links

655000

660000

690000

685000

