



CONSULTANTS IN ENGINEERING,  
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PLANNING

# ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) FOR THE PROPOSED BARNADIVANE WIND FARM & SUBSTATION, CO. CORK

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VOLUME 2 – MAIN EIAR

CHAPTER 13 – TELECOMMUNICATIONS AND AVIATION

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## 13. TELECOMMUNICATIONS AND AVIATION

### 13.1 Introduction

This chapter has been prepared to examine the potential impacts from the Proposed Development on local telecommunications and aviation. The potential effects of the Proposed Development on local telecommunications and aviation are initially considered without mitigation and the residual effects post mitigation are described. Potential cumulative impacts with other projects are also assessed. This is an update of the original EIS submitted for approval in 2014. The EIAR has had regard to any potential changes to the receiving environment since carrying out the original EIS and also considers the Proposed Substation as part of the Proposed Development. The proposed AGCR and Enabling TDR Works has been assessed under cumulative effects as this has already been consented and subject to EIAR. A comprehensive detailed description of the Proposed Development is contained in Chapter 2 of the EIAR.

#### 13.1.1 Project Description

A detailed description of the Proposed Project assessed in this EIAR is provided in Chapter 2 and is comprised of the following key elements:

- The wind farm site (also referred to in this EIAR as 'the Proposed Wind Farm');
- The substation (within the site of the Proposed Wind Farm) (also referred to in this EIAR as 'the Proposed Substation');
- The enabling works along the turbine delivery route (also referred to in this EIAR as 'Enabling TDR Works'); and
- The alternative grid connection route (also referred to in this EIAR as 'the AGCR').

Elements of the proposed project with potential to effect telecommunications and aviation include:

- The proposed 6 no. wind turbines with a blade tip height of 131m, a hub height of 72.5m and a rotor diameter range of 117m;
- 1 no. permanent meteorological mast with a height of 90m above ground level;
- The looped-in substation and associated masts.

The alternative grid connection route (AGCR) and the turbine delivery route (TDR) were assessed under cumulative effects.

The potential effects are detailed in Section 13.2.1.

#### 13.1.2 Study Area

The Study Area relates to the Proposed Development Site which includes the Proposed Wind Farm and the Proposed Substation.



## 13.2 Methodology

This section of the assessment describes the methodology used in assessing the potential impact from the Proposed Development on telecommunications and aviation. Initially, a desktop examination of telecommunications and aviation infrastructure was conducted in the area of The Proposed Development. This desktop study provided initial constraints for analysis and also identified potential stakeholders for consultation.

As part of the EIS scoping and consultation exercise conducted in 2014 relevant telecommunication operators and aviation authorities were consulted. Scoping was carried out in accordance with the EPA Guidelines<sup>1</sup> and the *'Best Practice Guidelines for the Irish Wind Energy Industry 2012'*<sup>2</sup> which provides a recommended list of telecommunications and aviation stakeholders for consultation, in addition to updated lists of stakeholders provided by the Commission for Communications Regulation and the Irish Aviation Authority through consultation. Given the passage of time since the original assessment relevant stakeholders were re-consulted as part of the updated EIA scoping and consultation process. Updated turbine coordinates were issued to these stakeholders to determine if there were any new or additional impacts associated with the development.

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 project from existing telecommunications links and masts and if necessary, identify mitigation measures.
- 3D network modelling on radio planning software where potential impact to links are identified.
- Identification of aerodromes and airports in proximity to the Proposed Development.

### 13.2.1 Background and Potential Effects

#### 13.2.1.1 *Electromagnetic Interference*

In the context of wind farm development, electromagnetic interference is the impact of a wind farm 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

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

<sup>2</sup> IWEA. (2012). Best Practice Guidelines for the Irish Wind Energy Industry.



- Terrestrial telecommunication links
- Television broadcasts

Impacts on aviation are considered in Section 13.4 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. It is possible that houses in the immediate vicinity of turbines could require some remedial measures in relation to television reception.

Section 5.10 of the DoEHLG Planning Guidelines on Wind Energy Developments (2006) [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](http://www.comreg.ie). Mobile phone operators should also be advised of the proposed development.”*

Section 7.15 of these 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 telecommunications operators (TOs) that could potentially be affected by the Proposed Development.



### 13.2.1.2 Broadcast Communications

Wind turbines as with any other large structure, have the potential to interfere with broadcast signals by acting as a physical barrier or causing a degree of interference to microwave links. The most significant effect at a domestic level relates to a possible flicker effect caused by the moving rotor, affecting, for example, radio signals. The most significant potential effect occurs where the wind farm is directly in line with the transmitter radio path. Interferences to mobile radio services is usually negligible, especially with increased distance between turbines and receivers.

### 13.2.1.3 Domestic Receivers

Depending on local topography, a domestic receiver may receive broadcast signals from more than one location. The strength of the signals varies with distance from the transmitter, and the receiver's antenna is generally always directed towards the most local, and usually strongest, broadcasting station.

There are two types of potential electromagnetic interference to domestic receivers, depending on the location of the receiver in relation to a wind farm. 'Shadowed' houses are located directly behind a wind farm, relative to the location from where the signal is being received. In this case, the main signal passes through the wind farm and the rotating blades can create a degree of signal scattering. In the case of receptors located beside the wind farm (relative to the broadcast signal direction), the effects are likely to be due to periodic reflections from the blade, giving rise to a delayed signal.

In both cases, i.e. shadowed houses located behind the wind farm and those located to the side of it, the effects of electromagnetic interference may depend to some degree on the wind direction, since the plane of rotation of the rotor will affect both the line-of-sight blockage to viewers located behind the wind farm and the degree of reflection to receivers located to the side.

### 13.2.1.4 Other Signal Types

Wind turbines have the potential to affect other signal types used for communication and navigational systems, for example tower-to-tower microwave communication links, and airborne and ground radar systems. Interference with radar systems occurs when wind turbines are located close to an airport or directly in line with the instrument landing approach. The nearest such operational airport to the Proposed Development is Cork Airport, approximately 32km east of the Proposed Development.

Potential effects on broadcast communications are generally easily dealt with by detailed micro-siting of turbines in order to avoid alignment with signal paths or by the use of repeater relay link, (i.e. reflective and or refractive panels)

### 13.2.1.5 Relevant Guidance

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

- 'Wind Energy Development Planning Guidelines' (WEG2006), 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 Wind Farm Interference to Fixed Links and Scanning Telemetry Devices’, published by ERA on behalf of Ofcom (2009).

### 13.3 Scoping and Consultation

In accordance with the WEG 2006 as part of the EIA scoping and consultation exercise in 2014, FT contacted the relevant national and regional broadcasters, fixed and mobile phone operators, Irish Aviation Authority, Airport Authorities and other relevant consultees. Consultation was undertaken to provide information on the Proposed Development to all relevant telecommunications service providers to discuss concerns and the potential for benefits of the Proposed Development. The service providers were provided with the locations and dimensions of the proposed turbines and asked to advise whether any impact could occur to their networks. Given the passage of time since the original assessment relevant stakeholders were re-consulted as part of the updated EIA scoping and consultation process. Updated turbine coordinates were issued to these stakeholders to determine if there were any new or additional impacts associated with the Proposed Development. An example of the correspondence issued by Fehily Timoney (FT) to consultees is provided in Appendix 13.1.

Consulted stakeholders include authorities with associated telecommunication infrastructure, wireless broadcasters, cellular network providers, broadband suppliers and wireless internet service providers (WISP).

The responses received from the telecommunications, broadcasters and aviation consultees are summarised in Table 13.1 following:

**Table 13-1: Telecommunications and Aviation Scoping Consultees**

Telecommunications Operator	Response Date	Impact Identified by Consultee	Further Comments
Irish Aviation Authority	05/10/2022	N/A	Recommendation to engage directly with Cork airport (including IAA-ANSP and Engineering)
Cork Airport IAA-ANSP	10/10/2022	No Impact	Recommended from a Regulatory perspective, these turbines will need to be notified to <a href="mailto:airspace@iaa.ie">airspace@iaa.ie</a> as they are obstacles greater than 100m elevation.
Commission for Communications Regulation		No response	No response
An Garda Siochana		No response	No response
Arra Communications Ltd.		No response	No response
Broadcasting Authority of Ireland	12/10/2022	No Impact	The turbine locations are not close to any existing FM transmitter sites.
BT Ireland Communications Ltd.		No response	No response



Telecommunications Operator	Response Date	Impact Identified by Consultee	Further Comments
Digiweb		Referred to alternative email address, no further response	Referred to alternative email address: "Could you please send this directly through to <a href="mailto:RFOperations@viatel.com">RFOperations@viatel.com</a> ". No further response
Eir (Eircom)	21/10/2022	No Impact	No transmission links within the proposed area of Barnadivane and it has no risk to the network.
Enet Telecommunications Network Limited	07/10/2022	No Impact	The turbines won't affect the current network
ESB Telecoms		No response	No response
Irish Broadband/Imagine		No response	No response
ITS Irish Networks Services		No response	No response
Ivertec Ltd		No response	No response
Magnet Networks		No response	Acknowledged Receipt by Email, no further response
Munster Broadband		No impact	Munster Broadband has ceased operating as of June 30th 2022.
Nova Telecom		No response	No response
Premier Broadband		No response	No response
Pure Telecom		No response	No response
Ripple Communications Ltd		No response	No response
RTE Transmission Network Ltd	06/10/2022	Potential Impact	Risk of interference to broadcast services in the area from Mullaghanish. Request for protocol to be signed between the developer and 2rn should the site go ahead
Sky Broadband Ireland		No response	No response
Skylink Communications		No response	No response
TETRA Ireland Communications Ltd	14/10/2022	No Impact	No impact, request to contact eir
Three	07/10/2022	No Impact	3Ireland microwave transmission network will not be impacted
TG4		No response	No response
TowerCom Ltd.		No response	No response
Virgin Media Ireland	21/12/2022	No impact	No impact to the Network
Vodafone Ireland Ltd	10/10/2022	No Impact	No impact to the Network
Wireless Connect Ltd.	06/10/2022	No impact	No effect on the Network



Nine of the TOs provided a material response. The responses received following consultations with the relevant bodies and the issues that they raised (if any), are summarised in section 13.3.1.1.

### 13.3.1.1 Detailed Scoping Responses

#### 13.3.1.1.1 Telecommunications and Broadcasting

All correspondence received from telecoms operators (TOs) is provided in Appendix 13.2.

##### Broadcasting Authority of Ireland

In correspondence dated 12/10/2022 a representative of the Broadcasting Authority of Ireland stated:

*“The turbine locations are not close to any existing FM transmitter sites”.*

##### Eir (Eircom)

In correspondence dated 21/10/2022 a representative of Eir stated:

*“We have no transmission links within the proposed area of Barnadivane and it has no risk to the network”.*

##### Enet Telecommunications Network Limited

In correspondence dated 07/10/2022 a representative of Enet stated:

*“These turbines won’t affect our current network”.*

##### RTE/Saorview

In correspondence dated 06/10/2022 a representative of RTE stated:

*“T5 is still impinging onto the 2nd Fresnel zone, but has missed the 1st Fresnel Zone so it should be OK. There is however still here the risk of interference to broadcast services in the area from Mullaghanish. We would therefore ask for a protocol to be signed between the developer and 2rn should the site go ahead”.*

##### TETRA Ireland Ltd.

In correspondence dated 14/10/2022 a representative of TETRA Ireland Ltd. stated the following:

*“We anticipate no impact from the development as proposed. Can you ensure the development is also reviewed by eir”.*

##### Three

In correspondence dated 07/10/2022 a representative of Three stated the following:

*“I have reviewed the new turbine locations and the 3Ireland microwave transmission network will still not be impacted”.*



### Vodafone

In correspondence dated 10/10/2022 a representative of Vodafone stated the following:

*“Based on the below new turbine locations I can confirm there will be no impact to our Network.”*

### Wireless Connect Ltd.

In correspondence dated 06/10/2022 a representative of Wireless Connect Ltd. stated the following:

*“No effect on us.”*

#### 13.3.1.1.2 Aviation

All correspondence received from Aviation Authority is provided in Appendix 13.2.

### Irish Aviation Authority

The Proposed Development is approximately 32km West of Cork Airport, as such, it was recommended by the Irish Aviation Authority to engage directly with Cork airport (including IAA-ANSP and Engineering) to make them aware of the proposal and ensure appropriate screening from an aviation safety perspective.

In the event of planning consent being granted, the applicant should be conditioned to contact the Irish Aviation Authority to:

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

### Cork Airport ANSP

In correspondence dated 10/10/2022 a representative of Cork Airport ANSP stated the following:

*“The nearest turbine is at c.17nm from Cork Airport and does along with the other proposed turbines fall within the airspace where the IAA ANSP has responsibility for safeguarding of Instrument Flight Procedures (IFPs) for Cork Airport.*

*In order to make initial assessments of potential impacts we use a Safeguarding Grid to see if the proposed development will penetrate the IFPs surfaces.*

*With the proposed tip height of 131m on a site with an elevation of 265m (in the highest turbine site) = total elevation 366m AMSL. The safeguarding elevation we apply for this area is 583m AMSL, so the proposed turbines are well below this value and therefore not of concern to us.*

*I should note that from a Regulatory perspective, these turbines will need to be notified to [airspace@iaa.ie](mailto:airspace@iaa.ie) as they are obstacles greater than 100m elevation.”*



## 13.4 Impact Assessment

### 13.4.1 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.

### 13.4.2 Construction Phase

#### 13.4.2.1 *Telecommunications and Broadcasting*

The potential for electromagnetic interference from wind turbines occurs only during the operational phase of the Proposed Development. There are no electromagnetic interference impacts associated with the construction phase of the Proposed Development on telecommunications and broadcasting in the area.

As identified in Chapter 11 Traffic and Transportation, the delivery of large turbine components has the potential to impact on existing overhead telecommunications lines for a short period of time if services are disconnected to facilitate the turbine delivery. Service cables and obstructions will need to be removed at any locations where a blade may require to be raised on a scissor lift, where overhead lines hang low, or where poles holding telecommunications lines are required to be temporarily removed.

The removal of overhead utilities will result in temporary disconnections. Such works will be carried out by the utility providers in advance of turbine delivery to site.

It is proposed that the large turbine components, including the blades, tower sections and nacelles, will be transported to the site in one convoy of 5 vehicles per night. In order to transport the 48 abnormally large components to the site it will take 10 convoys spread over 2 nights per week for 5 weeks to complete. Temporary disconnections of service cables will be required to facilitate the delivery of turbine blades and will be carried out during the delivery of the components. This is expected to have a brief to temporary localised negative impact on telecommunications provision during turbine delivery.

#### 13.4.2.2 *Aviation*

There is potential for aviation impacts during the late construction phase of a wind farm project and prior to the commissioning of the project as the wind turbines are constructed and placed in situ. The turbines could be considered to be an obstacle to low flying craft.

In a letter received by the Irish Aviation Authority dated 14/10/2022 a representative of the IAA stated the following:

*“The IAA ANSD requires any person who seeks to erect a manmade object to notify aerodrome operator of the intended operation at least thirty days in advance if the structure is to be erected in the vicinity of the aerodrome or areas around the aerodrome and other protected surfaces associated with the aerodrome.*

*Additionally, any person who seeks to erect a manmade object in excess of 45 metres anywhere within the state above ground or water surface must also notify the IAA ANSD of the intended erection at least thirty days in advance, as a crane operating at or above this height may constitute an obstacle to air navigation. The IAA ANSD can be contacted via [airspace@iaa.ie](mailto:airspace@iaa.ie).”*



A response was received from Cork Airport ANSP stating that their assessment indicates that the Proposed Development should not affect the safeguarding of Instrument Flight Procedures (IFPs) for Cork Airport.

### 13.4.3 Operational Phase

#### 13.4.3.1 *Telecommunications and Broadcasting*

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. According to the Comreg siteviewer<sup>3</sup>, the nearest telecommunication mast is located near Teerelton, approximately 3km northwest of the proposed turbines. Three and Meteor (Eir) operate from this mast. No other telecommunications infrastructure was found during a desk based survey within 2km of the Proposed Development. All of these operators were contacted during the consultation process. No potential impacts were identified.

There is potential for negative impact to domestic broadcasting receivers due to signal scattering or signal delay as a result of the introduction of wind turbines to the landscape. Providers have not identified potential impacts to their services however, there is potential for slight negative long-term effects to broadcasting services in the area of the Proposed Development. This may depend on wind speed and direction as detailed in section 13.2.1. Mitigation is set out in section 13.5 to avoid this potential negative impact.

RTE Transmission Network Ltd have identified a potential interference to broadcast services in the area from Mullaghanish. They requested that a protocol be signed between 2RN and the developer should the site go ahead.

The remaining findings of the consultation and desk based study confirms there will be no significant electromagnetic interference effect caused by the Proposed Development.

#### 13.4.3.2 *Aviation*

Wind turbines within 30 km of a radio navigation aid have the potential to lead to electro-magnetic interference with these signals. The Proposed Development is located approximately 32km West of Cork Airport, therefore there will be no effects on aviation.

### 13.4.4 Decommissioning Phase

#### 13.4.4.1 *Telecommunications and Broadcasting*

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

There is potential for brief disconnection of overhead lines during the decommissioning phase if large turbine components are required to be removed from the Proposed Development site. This has potential to cause a brief slight negative impact to telecommunication services where overhead lines require disconnection.

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<sup>3</sup> Comreg Siteviewer. <https://siteviewer.comreg.ie/#explore>



#### 13.4.4.2 Aviation

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.

### 13.5 Mitigation Measures

#### 13.5.1 Telecommunications and Broadcasting

Mitigation measures consist of mitigation by design to avoid impacts on telecommunication links. As there is no potential for electromagnetic interference from the proposed project on telecommunications, there are no mitigation measures proposed for the construction, operation, or decommissioning phase of the Proposed Development.

There is potential for broadcasting to be affected at receivers close to the Proposed Development during the operational phase, i.e. nearby dwellings. Mitigation by design has achieved a significant setback between the turbines and the nearest dwelling which will reduce potential effects on receivers. RTE Transmission Network Ltd have requested that a protocol be signed between 2RN and the developer should the site go ahead. The protocol sets out the developer's obligation to correct any deterioration in television and radio signal reception.

It is possible that houses in the immediate vicinity of the turbines could require some remedial measures in relation to television reception. In practice, such measures are not difficult to implement, are relatively inexpensive and if necessary will be undertaken by the developer in conjunction with RTÉ. Such measures could include:

- antenna relocation
- replacing aerials with more directional types
- the relaying of signals around the site using another transmitter
- the relaying of signals through the site using deflectors mounted on the turbines
- the cabling of signals underground through the site
- the installation of booster signals
- provision of satellite television facilities

The requirement for the implementation of such measures will be addressed individually with telecommunication service providers, should the need arise.

##### 13.5.1.1 Aviation

In line with standard practice for wind farm developments, the coordinates and elevations for turbines will be supplied to the IAA at the end of the construction phase. An aeronautical obstacle lighting scheme will be agreed with IAA in line with IAA's consultation response and applied to the proposed turbines.



## 13.6 Cumulative Effects

All known existing and proposed projects within the wider area that could potentially generate a cumulative impact with the project during construction, operation and decommissioning were identified and examined as part of this assessment. The full list of projects are contained in Appendix 1.2 of Volume 3 of this EIAR.

The proposed AGCR which is outlined in Chapter 2 of the EIAR will only be constructed if the Proposed Substation is not permitted. The AGCR is already permitted as part of the Carrigarierk windfarm application – CCC Ref. 15/730/ABP Ref. PL04.246353. As the AGCR will be constructed underground, there are no construction or operational related impacts for electromagnetic interference and broadcasting interests in the area. As the AGCR will be left in situ underground, there are no decommissioning related impacts on telecommunications and broadcasting interests in the area. Therefore, a cumulative impact due to the AGCR is unlikely to arise.

There is a separate permission for the Enabling TDR Works to facilitate the delivery of turbine components (CCC Ref. 14/6803).

These works include the construction of a private roadway, approximately 150 metres long, from the R585 to the L6008. There will be no significant impacts associated with telecommunications or aviation as a result of these works.

Overhead telecommunication lines along the TDR will be briefly disconnected during turbine delivery during the construction phase. Any interference to service will be brief (lasting less than 1 day) and potential effects to service will be communicated in advance to those affected. Notice will be provided to all stakeholders affected prior to works commencing.

There is potential that overhead lines may require brief disruption in the unlikely event that a turbine component requires replacement - in this case the TDR is required to be used during the operational phase. The effects on overhead telecommunications services would be similar to those described in Section 13.4.2.1. This would result in a brief slight negative impact to telecommunications services along the TDR.

During the development of any large project 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 project is responsible for ensuring that the necessary mitigation measures are in place. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact is unlikely to arise.

## 13.7 Residual Effects

### 13.7.1 Telecommunications and Broadcasting

Following the implementation of mitigation measures, no significant residual effects are expected on telecommunications and broadcasting as a result of the Proposed Development.

### 13.7.2 Aviation

Following the implementation of mitigation measures, no residual effects are expected on aviation as a result of the Proposed Development.



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## 13.8 Conclusions on Telecommunications and Aviation

The Proposed Development will not have any negative impact on aviation subject to compliance with the lighting and notification requirements of the Irish Aviation Authority.

The Proposed Development is not expected to affect the telecommunication networks of any of the communication service providers contacted.

A protocol has been prepared by RTE which the developer will sign prior to commencement of the development. This protocol sets out the developer's obligation to correct any potential deterioration in television and radio signal reception. This will ensure that there will be no negative impact on television and radio reception.



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