16. Infrastructure and Other Issues

16.1 Introduction

16.1.1 This chapter of the EIA Report assesses the likely significant effects of the Proposed Development with respect to Infrastructure and Other Issues (i.e., telecommunications, safety, population and human health, and major accidents and disasters).

16.1.2 When considering infrastructure, telecommunications and safety, appropriate design and management of a wind farm can avoid potential impacts in respect of these interests. With regard to safety related issues, the Proposed Development will be constructed and operated in accordance with all relevant UK health and safety legislation, guidance and best practice to ensure the risk to public safety is appropriately managed. The Development Site will be appropriately signed to indicate the presence of construction work. Therefore, no significant effects are expected.

16.1.3 In respect of infrastructure and telecommunications, the incorporation of suitable buffer and separation distances from these assets (as specified by the operators) into the layout design is often sufficient to mitigate any possible effects. Alternatively, where siting of turbines, battery storage or associated infrastructure to avoid potential impacts is not feasible, a range of technical solutions can be implemented to mitigate effects.

16.1.4 A number of telecommunications and infrastructure consultees indicated that they operate telecommunications links or plant in the vicinity of the Development Site. However, none of these would be directly affected by the Proposed Development.

16.2 Limitations of this Assessment

16.2.1 There are no limitations relating to infrastructure and other issues that affect the robustness of the assessment of the likely significant effects of the Proposed Development.

16.3 Relevant Legislation, Planning Policy, Technical Guidance

16.3.1 **Chapter 5 – Planning Policy Context** of the EIA Report provides a review of applicable planning policies, advice, and guidance of relevance to the Proposed Development.

16.3.2 Of specific relevance to the technical assessments provided in this chapter is the National Planning Framework 4 (NPF4), Policy 11 - Energy. Policy 11(e)(v) notes that considerations in determining applications for energy infrastructure developments are likely to include *"impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised"*.

16.3.3 The Scottish Government's Specific Advice Sheet regarding Onshore Wind (updated May 2014) states that: "*Wind turbines (in common with all electrical equipment) produce electromagnetic radiation which can interfere with broadcast communications and signals. The Radiocommunications Agency (RA) register of all civil radio communications installations in the UK can identify any radio installations in the neighbourhood of a wind farm site but will not identify their owners. Applicants should make direct contact with any authorities or bodies likely to have an interest, in particular, the local emergency services, local authority services departments, gas and electricity companies*".

16.3.4 East Ayrshire Council's Planning for Wind Energy Supplementary Guidance (2017), states that *"Wind energy developments have the potential to impact upon existing broadcasting installations. Applicants should consult with appropriate network operators to confirm the existence of any infrastructure and to assess whether the proposal would be likely to result in any interference to broadcasting. Where any such interference is likely, the applicant should put forward a technical solution to resolve the issue".*

16.4 Data Gathering Methodology

16.4.1 This has been informed by the development of the EIA Scoping Report, the EIA Scoping Opinion and by a separate consultation exercise the results of which are reported in **Table 16.1**.

16.5 Overall Baseline

Current baseline

16.5.1 A British Telecom ('BT') microwave link crosses the Development Site approximately 750m to the east of the nearest turbine (see **Figure 16.1**). In terms of safety, it is noted that the Development Site is undeveloped and situated in a rural location.

Utilities and Infrastructure

16.5.2 LinesearchBeforeUDig *"provides a single point of contact for all initial enquiries relating to the apparatus owned and/or operated by our Members, which now totals over 30,000 kms of assets such as buried underground transmission gas/oil pipelines and fibre optic cable ducts".* An enquiry was entered into the LinesearchBeforeUDig website as part of the EIA process in March 2023.

16.5.3 The results of this enquiry are presented in **Appendix 16A** and confirmed that the Proposed Development is not in the zone of interest for any of the LinesearchBeforeUDig members; this includes National Grid gas and electricity transmission networks (not including all other national grid or other local high pressure gas pipelines and lower pressure mains). An assessment of the National Grid Gas Pipelines was undertaken following access to a confidential database. No high-pressure pipelines were found to traverse the Development Site.

16.5.4 Four private water supplies ('PWS') have been identified within 2km of the Development Site, however none are within the Development Site itself (see **Chapter 13 – Geology, Hydrology and Hydrogeology** of the EIA Report and **Figure 13.4** for details). The PWS generally consist of a source along with a storage tank.

16.6 Consultation

16.6.1 Utilities and Infrastructure consultations are summarised in **Table 16.1**.

Table 16.1 Summary of Issues Raised during Consultation Regarding Infrastructure

Issue raised	Consultee(s)	Response and where considered in this chapter
Communication Links	Airwave Solutions (March 2023)	Airwave Solutions were contacted with the turbine layout but to date have yet to respond.
Communication Links	Arqiva (March 2023)	Responded stating "*Arqiva is responsible for providing the BBC, ITV and the majority of the UK's radio transmission network*", *"We have considered whether this development is likely to have an adverse effect on our operations and have concluded that we have no objection to this application."*
Communication Links	BT (March 2023)	Responded stating the *"Project indicated should not cause interference to BT's current and presently planned radio network."*
Communication Links	Colt (March 2023)	Responded stating that" We *can confirm that Colt Technology Services do not have apparatus near the above location as presented on your submitted plan.*"
Communication Links	CSS Spectrum Management Services Ltd (March 2023)	Responded stating that the *"application has now been examined in relation to UHF Radio Scanning Telemetry communications used by our Client in that region and we are happy to inform you that we have NO OBJECTION to your proposal."*
Communication Links	EE	EE (formerly Orange and T-Mobile) were contacted with the turbine layout but, to date, have yet to respond.
Communication Links	JRC (March 2023)	Responded stating that "*This proposal is *cleared* with respect to radio link infrastructure operated by the local energy networks*."
Communication Links	Keltel (March 2023)	The Ofcom WRT results show that Keltel operate equipment in the general vicinity of the Proposed Development. Keltel were contacted with the turbine layout but to date have yet to respond.
Communication Links	MLL Telecom (March 2023)	Responded stating that they "*have no objection regarding the proposal.*"
Communication Links	O2	O2 were contacted with the turbine layout but to date have yet to respond.
Communication Links	Ofcom	Ofcom responded directing the Applicant to its Spectrum Information System – the results of this assessment are set out at **Section 16.11** below.
Communication Links	Tech Services-Tx (Ericsson, everythingeverywhere, T-mobile)	Ericsson Tech Services were contacted with the turbine layout but to date have yet to respond.

Issue raised	Consultee(s)	Response and where considered in this chapter
	(March 2023)	
Communication Links	Verizon Business (March 2023)	Responded stating that they "*have reviewed your plans and have determined that Verizon (Formally known as MCI WorldCom, MFS) has no apparatus in the areas concerned*"
Communication Links	Vodafone (March 2023)	Responded stating that it "*does not have apparatus within the vicinity of your proposed works*".
Existing Infrastructure	LineSearchBeforeUDig	A search was undertaken for the turbine locations which showed the Development Site is not in the zone of interest for any of the LinesearchBeforeUDig members.
Existing Infrastructure	Scottish Power (March 2023)	Responded directing enquiries to be made through LineSearchBeforeYourDIg, which shows that there is no infrastructure within the area of the Proposed Development
Existing Infrastructure	Scottish Power Energy Networks (March 2023)	Responded stating that "*there are no records of any owned apparatus within the specific search area*" of the Proposed Development.
Existing Infrastructure	SGN (March 2023)	Responded providing a map indicating that they had no infrastructure within the area concerned.
Existing Infrastructure	Scottish Water (March 2023)	Scottish Water were contacted with the turbine layout but to date have yet to respond. However, they responded to the 2020 scoping consultation with no objection.

16.7 Scope of the Assessment

Potential Receptors

16.7.1 Like any large structures, turbines have the potential to interfere with electromagnetic signals. This can impact communication networks, television reception and the telemetry systems used by utilities providers. Construction operations can impact on any existing utility (electric, water and gas) infrastructure. Therefore, potential receptors were identified by the Proposed Development:

- Potential effects on utility infrastructure;
- Potential effects on telecommunications;
- Potential effects on people;
- Health and Safety; and
- Major Accidents or Disasters.

Potential Effects on Utility Infrastructure

16.7.2 Construction activities, especially excavation of foundations, cable trenches and drainage ditches, can cause damage to existing utility infrastructure present at that location. Further to the health and safety consequences to staff striking buried cables or pipes, disruption would be caused to public and commercial consumers, potential environmental damage and requirement for emergency resources to be provided to consumers during the period of repairs.

Potential Effects on Telecommunications

16.7.3 Microwave telecommunications use point to point transmission. The signal is likely to be affected if wind turbine towers were sited within 100m of the line of sight between telecommunication towers. There is a potential for the signal to be degraded by obstructing, reflecting or scattering of telecommunication microwaves by a wind turbine's rotating blades.

16.7.4 Mobile telecommunications use transmission towers that can provide service 360-degree arc around each tower location. Typically, a mobile device will connect to multiple transmission towers simultaneously. There is a potential for the signal to be degraded by obstructing, reflecting or scattering of telecommunication radio waves by a wind turbine's rotating blades.

16.7.5 Digital television signals are transmitted using Ultra High Frequencies (UHF) and there are two main mechanisms whereby a wind farm could potentially interfere with television reception - 'shadowing' effects and 'reflection'/'scattering' effects. The Proposed Development could interfere with television signals during operation, although this is less likely to occur with digital receivers which are more robust. There is no potential for such effects during construction and decommissioning and effects during these phases of the Proposed Development are not considered further in this assessment.

Potential Effects on People and Health and Safety

16.7.6 The Proposed Development could affect people, for example, as a result of health and safety risks to those on the Development Site during construction, operation and decommissioning. Safety measures and precautions for workers and the general public will be implemented in accordance with relevant legislation and guidance.

16.7.7 As with any tall structures, wind turbines can be susceptible to lightning strike, and a very small number of wind turbines have been known to fail due to lightning strike, though such incidents are very rare. A lightning strike to a turbine(s) has health and safety implications to workers and / or the public in the immediate vicinity.

16.7.8 In cold weather, ice can build up on blade surfaces when operating which can be thrown from the blades, causing harm without sufficient protection in place. The applicant is an experienced wind farm operator and has stringent operational procedures to minimise the health and safety risk posed by ice thrown (see **Section 16.8.10**).

Major Accidents or Disasters

16.7.9 In addition, the Town and Country Planning (Environmental Impact Assessment (Scotland) 2017 Regulations ('the EIA Regulations') state that the potential for proposed developments to result in, or be affected by, major accidents or disasters, either as a result of the location of the Development Site or from the project itself should be

assessed. Major accidents or disasters are therefore considered in this chapter under a range of topics as discussed further within **Section 16.14**.

16.8 Environmental Measures Embedded into the Development Proposals

Television

16.8.1 If a reduction in television reception quality does occur in the surrounding area, it is most likely to be apparent when the Proposed Development becomes operational. To mitigate any problems with reception, the Applicant will accept a suitably worded planning condition that requires the Applicant: (i) to assess current television signals in advance of the construction of the Proposed Development, and (ii) mitigate any post-construction issues with television reception arising from effects attributable to the Proposed Development.

16.8.2 This planning condition will require the Applicant to meet the cost of investigating and effectively rectifying any problems should they arise, and to implement solutions in a timely manner so as to minimise any inconvenience to residents. It is expected that issues, if they arise, will arise in the first year of operation of the Proposed Development and any remedial work will be limited to this period only.

16.8.3 Viewing quality can be remedied by considering each, or a combination, of the following mitigation measure:

- Replace or upgrade the receiving aerials (e.g., with directional receiving aerials) for the affected households;
- Re-tune the television receivers at the affected households;
- Re-align the television aerial to an alternative transmitter and re-tune the receiver at the affected households; and
- Provision of a bespoke 'self-help' solution (this could comprise a new low-powered transmitter, a cable network, a satellite receiver or a combination of these measures).

16.8.4 By utilising these measures, it is predicted that any television reception issues as a result of the Proposed Development would be fully mitigated with no significant residual effects.

Public Safety

Construction

16.8.5 In order to ensure the risk to public safety is minimised during the construction phase of the Proposed Development, the applicant and their Contractors will adhere to the Construction (Design and Management) Regulations 2015[97] and other relevant UK health and safety legislation including:

- Health and Safety at Work Act 1974;

[97] If planning permission is granted, the Applicant will produce a Construction Phase Health and Safety Plan in accordance with the Construction (Design and Management) Regulations (CDM) 2015. The purpose of the Health and Safety Plan would be to outline and define the approach to health and safety that will be adopted specifically for the Proposed Development and to draw attention to the hazards known to the applicant regarding the construction site which may affect the execution of the works. The applicant will appoint a Project Manager for the duration of the detailed design, procurement and construction phases who will work with the Principal Contractor and CDM Co-ordinator as defined in the CDM Regulations 2015.

- Management of Health and Safety at Work Regulations 1999;
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995; and
- Onshore Wind Health and Safety Guidelines, RenewableUK, 2015.

16.8.6 All potentially hazardous areas such as excavations and electrical installation works will be fenced off and all unattended machinery will be stored in the site compound or immobilised to prevent unauthorised use.

16.8.7 Appropriate warning signage will be installed concerning any hazards, any areas where access is restricted or prohibited such as transformers, switchgear and metering systems, and to alert any Development Site users to the potential for increased risks under certain meteorological and operating conditions.

Operation

16.8.8 Wind turbines installed at the Development Site will comply with the BS EN 61400 series which provides the design requirements for onshore and offshore wind turbines.

16.8.9 Wind farms have a proven good public safety track record. Appropriate measures are included in the turbine design to conduct lightning strike down to earth and minimise the risk of damage to turbines. Occasionally, however, lightning can strike and damage a wind turbine blade. Modern wind turbine blades are manufactured from a glass-fibre or wood-epoxy composite in a mould, such that the reinforcement runs predominantly along the length of the blade. This means that blades will usually stay attached to the turbine if damaged by lightning and, in all cases, the turbine will automatically shut down if damaged.

16.8.10 In cold weather, ice can build up on blade surfaces when operating. The turbine can continue to operate with a very thin accumulation of snow or ice but will shut down automatically as soon as there is a sufficient build up to cause aerodynamic or physical imbalance of the rotor assembly. Once the ice has thawed and the turbine re-starts, there is a slight possibility that fragments of ice or snow will be released from the rotor and will drop within close vicinity of the turbine. The risk to public safety is extremely low due to the initially slow rotational speed of the rotor and because such fragments are sufficiently small and lightweight to allow the rotor assembly to be back in balance before restarting.

16.8.11 Turbine power and monitoring systems operate with several levels of redundancy to protect the plant from damage. In the case of faults arising, including over-speed of the blades, overpower production, or loss of grid connection, turbines shut down automatically through braking mechanisms. In addition, turbines may be fitted with vibration sensors so that, in the unlikely event a blade is damaged, the turbine will automatically and immediately shut down.

16.9 Assessment Methodology

16.9.1 This assessment adopts a qualitative approach based on accepted best practice and as employed in previous wind farm assessments to assess the significance of effects.

16.9.2 When considering existing infrastructure and telecommunications, appropriate design of a wind farm can avoid potential impacts on these interests. Where siting of turbines or associated infrastructure to avoid potential impacts is not feasible, a range of technical solutions can be implemented to mitigate effects.

16.9.3 The risk presented to the public from the construction, operation and decommissioning of the Proposed Development (due to public access to the Development Site and general health and safety risks) has been qualitatively assessed using relevant guidance

documents (Specific Advice Sheet Onshore Wind Turbines (Scottish Government, 2011 (updated 2014)) and professional judgement based on experience gained from a large number of previous wind farm projects. Public access will be prevented during construction and decommissioning for health and safety purposes and therefore it is recognised that the risk to the public during these phases will be prevented.

16.9.4 A qualitative desk-based assessment has been undertaken in relation to the issue of 'major accidents and disasters' which require consideration under the EIA Regulations. This draws from, and cross references, other relevant assessments undertaken for the EIA, for example noise and landscape and visual.

16.9.5 Where relevant, the assessment of residual effects is based on a consideration of the extent to which proposed mitigation measures are effective, as follows:

- Fully – Effect fully mitigated, and no significant residual effects predicted;
- Substantially – Mitigation would be largely successful at reducing significant effects though some residual significant effects are possible; and
- Partially – Mitigation would be successful at reducing effects, but some significant residual effects are likely.

16.9.6 Major accidents or disasters would be scoped in for assessment where there is a high risk of occurrence as a result of the Proposed Development. A high risk is considered to be where there is a reasonable likelihood of the accident or disaster occurring, or where the effect of the accident or disaster would lead to mitigation requirements beyond the usual scope of construction or operational activities. The effects of this assessment are summarised in **Table 16.3** below. Effects on population and human health are considered under the methodology in the relevant chapters of this EIA Report, notably relating to noise and visual effects (no shadow flicker effects are predicted to occur) and are summarised in **Table 16.2** below.

16.10 Assessment of Effects on Utility Infrastructure

16.10.1 Consultation with utility operators confirmed that there is no utility infrastructure identified within the site boundary (see **Appendix 16A**) that would be affected by the Proposed Development. Further, during the design process, no utility operators have objected to the Proposed Development. Therefore, there are no effects on utility infrastructure.

16.11 Assessment of Effects on Telecommunications

16.11.1 As noted in **Section 16.6** (**Table 16.1**), no potential effects on telecommunication links during construction, operation or decommissioning have been identified.

16.11.2 By utilising the techniques outlined in **Sections 16.8.1 to 16.8.4** it is anticipated that any television reception issues resulting as a result of the Proposed Development should be fully mitigated.

16.12 Assessment of Effects on Public Safety

16.12.1 As a result of the mitigation measures outlined in **Sections 16.8.5 to 16.8.11** it is considered there would be no significant effects on public safety.

16.13 Population and Human Health

16.13.1 The potential for significant effects in relation to population and human health has been considered in those technical chapters where changes may affect people (**Chapter 7 – Noise**, **Chapter 9 – Landscape and Visual Impact Assessment** and **Chapter 14 – Traffic and Transport** of the EIA Report). As mentioned previously, no effects relating to shadow flicker are predicted. The results are summarised in **Table 16.2**, and no significant effects in relation to population and human health are predicted.

Table 16.2 Population and Human Health Effects

Technical Assessment	Effects	Effect on Population and Human Health	Rationale
Noise - Chapter 7	Not Significant	Not Significant	No exceedances of the ETSU-R-97 criteria are predicted. As such the operational noise effects of the Proposed Development, either alone or in combination with other developments, would be not significant.
LVIA – Chapter 9	Not Significant	Not Significant	The Proposed Development would be located within part of the Southern Uplands with Forestry, which contains a number of large scale existing and consented wind farms. Large wind turbines are an established characteristic of this area, and the landscape also demonstrates many of the attributes indicative of an ability to accommodate large scale wind farm development
Traffic – Chapter 14	Not Significant	Not Significant	The volume of traffic predicted and resulting percentage increases during construction of the Proposed Development would not have a significant impact on severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation or accident and safety.

16.14 Major Accidents and Disasters

16.14.1 The potential for major accidents and disasters linked to the Proposed Development and its location has been considered for a range of topics and as shown in **Table 16.3**, it is not considered that there would be any significant effects.

Table 16.3 Effects in Relation to Major Accidents and Disasters

Major Accident or Disaster	Risk due to location	Risk due to project	Significant Effect	Rationale
Biological hazards: epidemics	Low	Very Low	No	The probability of epidemics which would affect the construction, operation or decommissioning of the Proposed

Major Accident or Disaster	Risk due to location	Risk due to project	Significant Effect	Rationale
				Development is considered to be low. If necessary, government guidance in relation to social distancing would be followed to enable safe construction and operation of the Proposed Development.
Biological hazards: animal and insect infestation	Very low	Very low	No	The probability of animal and insect infestations which would affect the construction, operation or decommissioning of the Proposed Development is considered to be very low.
Earthquakes	No	No	No	Due to its location, any earthquakes in the vicinity of the Proposed Development would be of a very small magnitude and the design of turbine foundations *etc*. is adequate to withstand such low magnitude events.
Tsunamis / tidal waves / storm surges	No	No	No	The location of the Proposed Development and its distance from the coast means there is no risk of these phenomena affecting it.
Volcanic eruptions	No	No	No	There are no active volcanos in the vicinity of the Proposed Development.
Famine / food insecurity	Very low	Very low	No	The probability of famine / food insecurity affecting the construction, operation or decommissioning of the Proposed Development is considered to be very low.
Displaced populations	Very low	Very low	No	The probability of displaced populations affecting the construction, operation or decommissioning of the Proposed Development is considered to be very low.
Landslide / subsidence	Low	Low to moderate	No	The results of the peat landslide risk assessment indicate that the Development Site is considered to be at a Negligible to Low risk of peat landslide failure. An area of Moderate risk is identified adjacent to the west of the track between WTG-01 and WTG-02 in the Carcow Hass area of the Development Site. However, given that no development is proposed in this area of the Development Site, the likelihood of failure in association with the Proposed Development is considered unlikely.

Major Accident or Disaster	Risk due to location	Risk due to project	Significant Effect	Rationale
Severe weather: storms	Medium	No	No	Turbines are equipped with lightning conductors and automatically shut down when wind speeds are at a level which could damage internal components. Turbines are located more than topple distance from public rights of way.
Severe weather: droughts	Very Low	No	No	The probability of severe drought occurring in the vicinity of the Proposed Development is considered to be very low. Furthermore, turbines would be unaffected by drought conditions.
Severe weather: extreme temperatures	Low	Very Low	No	In cold weather, ice can build up on blade surfaces when operating. The turbine can continue to operate with a very thin accumulation of snow or ice but will shut down automatically as soon as there is a sufficient build up to cause aerodynamic or physical imbalance of the rotor assembly. Once the ice has thawed and the turbine re-starts, there is a slight possibility that fragments of ice or snow will be released from the rotor and will drop within close vicinity of the turbine. The risk to public safety is considered to be extremely low, due to the initial slow rotational speed of the rotor and because such fragments are sufficiently small and lightweight to allow the rotor assembly to rebalance before restarting. Furthermore, turbines are located more than topple distance from public rights of way.
Floods	Low	Very Low	No	Embedded mitigation measures in the design of watercourse crossings and drainage around infrastructure would ensure that there is no increase in flood risk as a result of the Proposed Development. As discussed in **Chapter 13 – Geology, Hydrology and Hydrogeology** of the EIA Report, the only areas in the vicinity of the Development Site for which a localised flood risk is indicated on SEPA's online flood mapping is on the River Nith tributary floodplain areas, on and beyond the northern site boundary. This area is classed as having a >0.5% Annual Exceedance Probability ('AEP') of flooding. The topography and distance from infrastructure means there is a very low risk of the Proposed Development being vulnerable to flooding.

Major Accident or Disaster	Risk due to location	Risk due to project	Significant Effect	Rationale
Terrorist incidents	No	No	No	The probability of terrorist incidents in the vicinity of the Proposed Development is considered to be very low.
Cyber attacks	No	No	No	The software that would control the operation of the Proposed Development is protected by security measures which are considered to reduce the risk of successful cyber-attacks.
Disruptive industrial action	No	No	No	A relatively small number of workers would be required for the construction, operation and decommissioning of the Proposed Development.
Public disorder	No	No	No	The Proposed Development is located in a relatively remote area.
Wildfires	Very Low	No	No	Due to the location of the Proposed Development, the probability of wildfires occurring in the vicinity of it is considered to be very low.
Poor air quality events	No	No	No	The construction, operation or decommissioning of the Proposed Development would not be affected by poor air quality events.
Transport accidents	No	Low	No	Abnormal loads or an increase in traffic could lead to an increased risk of accidents. However, the assessment in **Chapter 14 – Traffic and Transport** of the EIA Report concluded that this effect would not be significant. A Traffic Management Plan would further reduce risks by including measures such as wheel washing to reduce the occurrence of debris on the carriageway.
Industrial accidents	No	Low	No	Manual labour, working at height and use of specialist plant all bring risk of industrial accidents. All relevant UK health and safety legislation will be adhered to. Site construction management practices will include, but are not limited to, temporary diversions of public rights of way, relevant signage and fencing at potentially hazardous construction areas where appropriate.

Major Accident or Disaster	Risk due to location	Risk due to project	Significant Effect	Rationale
Electricity, gas, water supply or sewerage system failures	No	Low	No	Construction activities or turbine collapse could damage utility infrastructure. However, no such infrastructure is located within topple distance of turbines.
Urban fires	No	No	No	The Proposed Development is not in close proximity to any large urban areas.

Assessment of Cumulative Effects

16.14.2 All potential effects in respect of telecommunications, infrastructure, utilities, television reception and public safety have been mitigated therefore no cumulative effects are predicted to occur.

16.15 Proposed Mitigation Measures

16.15.1 In the unlikely event that a reduction in television reception quality occurs in residential properties in the area surrounding the Proposed Development, it is most likely to be noticed when it becomes operational. However, a number of fully effective mitigation solutions are available (see **Table 16.4**), and the Applicant will accept a suitably worded planning condition to mitigate post-development where effects are attributable to the Proposed Development.

16.15.2 The Proposed Development will be constructed and operated in accordance with all appropriate UK health and safety legislation, guidance and standards to ensure the risk to public safety is minimised and kept within acceptable levels.

16.16 Conclusions of Significance Evaluation

16.16.1 It is considered that there would be no significant effects in respect of Infrastructure and other issues.

16.17 Implementation of Environmental Measures

16.17.1 **Table 16.4** describes the environmental measures embedded within the Proposed Development and the means by which they will be implemented.

Table 16.4 Summary of Environmental Measures to be Implemented

Effect	Incorporated mitigation / enhancement measure	Extent to which effect mitigated[98]	Monitoring requirements (if any)	Means by which mitigation, or enhancement measure may be secured
Construction				
Safety	All relevant UK Health Safety Security Environment ('HSSE'), legislation, guidelines and best practice will be adhered to. Site construction management practices will include, but are not limited to, temporary diversions of public rights of way, relevant signage and fencing at potentially hazardous construction areas where appropriate.	Fully	None	Standard site management practices incorporated into construction contracts.
Infrastructure	All relevant HSSE legislation guidelines and best practice will be adhered to, and industry best practice guidance adhered to.	Fully	None	All relevant HSSE guidance and best practice will be followed at all times.
Operation				
Possible interference to television reception to scattered properties near to the Proposed Development	A mixed solution is likely to be required if television reception is affected by the Proposed Development which may include: - Re-tuning some TVs to an alternative transmitter, which may overcome possible interference for some; and - A transposer system could overcome possible reception difficulties.	Fully	None	Planning Condition
Operational Safety	Turbines installed at the Development Site would comply with the BS EN 61400 series and relevant UK health and safety legislation. Safety measures also include the incorporation of a buffer	Fully	On-going variation	Site design and on-going maintenance.

[98] Key to predicted success of mitigation:
Fully - Effect fully mitigated and no effects predicted.
Substantially - Mitigation would be largely successful at reducing effect. Some effects possible.
Partially - Mitigation would be successful at reducing effects, but some effects likely.

Effect	Incorporated mitigation / enhancement measure	Extent to which effect mitigated[98]	Monitoring requirements (if any)	Means by which mitigation, or enhancement measure may be secured
	zone between public rights of ways and the turbines and installation of appropriate warning signage where necessary on-site.			