

Ballyfeeny Green Energy Project



Environmental Impact Assessment Report Volume II

Chapter 16 – Cumulative Effects

September 2025

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Acronyms

Term	Meaning
CEA	Cumulative Effects Assessment
EIAR	Environmental Impact Assessment Report
EIA	Environmental Impact Assessment
GCR	Grid Connection Route
TDR	Turbine Delivery Route
PINS	Planning Inspectorate
EU	European Union
PINS	Planning Inspectorate
SNH	Scottish Natural Heritage
EPA	Environmental Protection Agency
DoHPLG	Department of Housing, Planning and Local Government
Draft WEDG	Draft Wind Energy Development Guidelines 2019
DECLG	Department Environment, Community and Local Government
EC	European Commission
WEDG 2006	Wind Energy Development Guidelines
ABP	An Bord Pleanála
TDR	Transport Delivery Route
TBC	To Be Confirmed
UNESCO	United Nations Educational, Scientific and Cultural Organisation
BESS	Battery Energy Storage System
CO₂	Carbon Dioxide
HGV	Heavy Goods Vehicles
GHG	Greenhouse Gas
ZTV	Zone of Theoretical Visibility
T01	Turbine 1

16. Cumulative Effects

16.1 Introduction

This Chapter details the outputs of the Cumulative Effects Assessment (CEA) for the Environmental Impact Assessment Report (EIAR) topic chapters (**Chapters 5 –15**). CEAs have been completed as part of the topic assessments and are presented in detail within each Chapter (**Chapters 5 –15**). The CEA is a requirement of the European Union (EU) Directive 2011/92/EU (as amended by Directive 2014/52/EU) (the EIA Directive) and considers the potential for cumulative effects of the proposed Project with other projects and plans.

The proposed Project includes six no. turbines and all associated infrastructure including Turbine Foundations, Turbine Hardstands, Site Access Tracks, Wind Farm Internal Cabling, Grid Connection Route (GCR), Relay Tower, Onsite Substation and works required along the public road network for the two Turbine Delivery Route (TDR) options to facilitate the delivery of turbine components. A full description of the proposed Project is provided in **Chapter 2 – Project Description**

In summary, this Chapter:

- Identifies the guidance relevant to the CEA;
- Details the methodology for the proposed Project CEA, which covers the construction, operational and decommissioning phases;
- Details the approach to compiling the list of other projects that were considered in the CEAs for the topic chapters (**Chapters 5-15**); and
- Presents the outputs of the CEAs for each of the topic chapters (**Chapters 5-15**)

This Chapter is supported by the following appendices:

- **Appendix 16.1 – Long list of other projects for the cumulative effects assessment**

The Chapter should be read in conjunction with:

- **Chapter 5 – Population and Human Health**
- **Chapter 6 – Biodiversity**
- **Chapter 7 – Land, Soils and Geology**
- **Chapter 8 – Water, Hydrology (Flood Risk Assessment) and Hydrogeology**
- **Chapter 9 – Air Quality and Climate**
- **Chapter 10 – Noise and Vibration**

- **Chapter 11 – Landscape and Visual**
- **Chapter 12 – Traffic and Transport**
- **Chapter 13 – Archaeology, Architectural and Cultural Heritage**
- **Chapter 14 – Material Assets**
- **Chapter 15 – Shadow Flicker**

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16.1.1 Statement of Authority

This section of the EIAR has been prepared by Rowan Engineering Consultants Ltd., (Rowan). Rowan has been providing environmental, ecological and planning services since the company was founded in 1998 to a broad range of clients.

This Chapter of the EIAR has been written by Jessica Boyd. Jessica is a Senior Environmental Consultant, having joined Rowan Engineering Consultants Ltd., in February 2024 with over 6 years' experience in Environmental Impact Assessment, in relation to Pharmaceutical, Aggregate Industry and Onshore Wind Developments. Additionally, Jessica's experience includes Environment and Planning preparation for Onshore Wind, Solar and Battery Energy Storage Systems across Ireland. Jessica holds a BSc in Environmental Management and MSc in Spatial Planning: Cities, Water & Climate Change.

Dr James Massey has reviewed this Chapter. James is a Senior environmental consultant and ecologist with over 25 years' experience, specifically on environment assessment of renewable projects, onshore and offshore in Ireland and worldwide. James is a Fellow of the Institute of Environmental Sciences and a member of several professional organisations. James is a Chartered Environmentalist and Chartered Scientist and hold a PhD, DSc, BSc in Applied Marine Biology and a number of professional and industry qualifications.

The CEAs relative to each topic chapter (**Chapter 5-15**) have been undertaken by the topic chapter author. A Statement of Authority on each author is provided within the individual topic chapters.

16.2 Legislation and Guidance

Legislation

This assessment has been carried out in accordance with the relevant legislation as follows:

- EU Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU, as amended (the EIA Directive);

The following sources were consulted in the development of this Chapter:

- Advice Note 17: Cumulative Effects Assessment (Planning Inspectorate (PINS) for England, 2019) (hereafter referred to as the PINS Guidance);
- Guidance on Assessing the Cumulative Impacts of Onshore Wind Energy Developments (Scottish Natural Heritage (SNH), 2018) (hereafter referred to as the SNH Guidance);
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022);
- Draft Revised Wind Energy Development Guidelines (Department of Housing, Planning and Local Government (DoHPLG), 2019) (hereafter referred to as the Draft WEDG's 2019);
- Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment (Department of Environment, Community and Local Government (DECLG), August 2018);
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission (EC), 2017);
- Wind Energy Development Guidelines (Department of the Environment, Heritage and Local Government, 2006) (hereafter referred to as the WEDG's 2006);
- Roscommon County Development Plan (CDP) 2022-2028;
- Leitrim CDP 2023-2029; and
- Longford CDP 2021-2027.

Cumulative effects have been assessed in accordance with the EIA Directive, of which Annex IV, article 5 requires that:

“a description of the likely significant effects of the project on the environment resulting from... the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.”

Cumulative effects are defined as per the EPA Guidelines as:

“The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects.”

16.3 Methodology

The potential cumulative effect of the proposed Project and combined with the potential impact of other projects has been carried out. The CEA is approached in a staged process which aligns with the requirements of the PINS Guidance. The stages included the following:

- Stage 1: Establishing the list of other projects;
- Stage 2: Applying topic specific criteria to the list of other projects, to confirm a short list for each topic chapter;
- Stage 3: Collating information on each of the other projects to inform the CEAs; and
- Stage 4: Undertaking the assessment to an appropriate level of detail. This is based on the information available on each of the other projects.

16.3.1 Stage 1 Establishing the list of other projects

The list of other projects was established from a desk study of relevant data sources including the National Development Plan 2021-2030, Roscommon County Development Plan 2022-2028, Local Authority ePlan websites, the An Bord Pleanála (ABP) planning portal, the EIA Portal and Google Maps.

The planning portals for Roscommon, Leitrim and Longford County Councils were consulted. Leitrim and Longford's County borders are c. 7.5km Northeast and 9km East from the proposed Project, respectively. These sources were searched up to December 2024.

A search was completed in mid-May 2025 for any new and relevant wind farm sites. This resulted in the addition of the Derryadd Wind Farm to **Appendix 16.1 – Long list of other projects for the cumulative effects assessment**

Planning applications older than 10 years were excluded from the list. These are likely to have already been built or no longer being progressed.

The list was produced based on the following buffers:

- Other wind farm and relevant projects within a 20km radius of the proposed wind farm Site, incorporating the GCR; and
- Relevant projects within a 50m buffer either side of the proposed turbine delivery route (TDR).

The measurement is taken from the outermost turbines at the proposed wind farm Site.

These buffers were considered appropriate, taking account of the scale and extents of the proposed Project and based on guidance and professional judgement. The 20km radius for

other wind farm projects aligns with the study area (the zone of theoretical visibility) applied in **Chapter 11 – Landscape and Visual** and which is defined in the Draft WEDG's 2019.

Specifically, for the proposed TDR, the 50m buffer reflects the temporary and localised nature of the works at these locations on the public road network. For the proposed TDR, once the deliveries are completed, the areas on the public road network will be reinstated.

The list of other projects takes into account existing projects, projects with an approved planning permission and projects in the planning process with a validated application (but awaiting a planning decision).

The lists are not exhaustive, with each specialist chapter considering the list of other projects, which is relevant to their topics and any topic specific guidance. Each chapter (**Chapter 5 – 15**) has confirmed a short list of other projects within the chapter assessment.

Relevant Projects

When considering relevant projects, these were defined as other renewable energy infrastructure projects, other significant infrastructure developments such as roads, cables, industrial/ manufacturing development, warehousing development, public realm and housing developments (where 10 or more houses are being provided).

On the basis of professional judgement, these were considered the type of development or activity that may result in cumulative effects with the proposed Project.

The list of other projects is presented in **Appendix 16.1–Long list of other projects for the cumulative effects assessment**

There was an exception included in **Appendix 16.1–Long list of other projects for the cumulative effects assessment**. It includes the:

- N4 Carrick-on-Shannon to Dromod and the N4 Mullingar to Longford (Rooskey) Road Schemes. These Schemes have not yet been submitted for planning but given their relative scale, development nature and proximity to the proposed Project, they were included for consideration in **Appendix 16.1–Long list of other projects for the cumulative effects assessment**.

16.3.2 Stage 2 Establishing the list of other projects for each topic chapter

Each topic Chapter was provided with the Stage 1 long list of other projects (**Appendix 16.1–Long list of other projects for the cumulative effects assessment**) Each topic Chapter then established a short list of other projects for consideration in their topic specific CEAs.

These short lists were derived by considering whether there was potential for a physical overlap between effects. In this regard, screening ranges were applied by each topic chapter to the Stage 1 list of other projects.

These ranges are detailed in **Table 16.1**.

Table 16.1: Topic specific screening ranges of the Stage1 long list of other projects

EIA Topic Chapter	Screening range of the Stage 1 list	Justification
Chapter 5 Population and Human Health	• 20km from the proposed wind farm Site and incorporating the GCR. • 50m from the TDR boundary	The 20km distance was considered as this allowed the assessment to account for potential indirect cumulative effects on population and human health receptors. The 20km radius aligned with the study area (the zone of theoretical visibility) applied in Chapter 11 - Landscape and Visual Impact.
Chapter 6 Biodiversity	• Wind farm projects within 20km from the proposed wind farm Site • Other projects within 2km of the Redline Boundary • 50m from the TDR boundary	To account for likely significant effects arising on biodiversity. Process is outlined and projects listed in Chapter 6 Section 7
Chapter 7 Land, Soils and Geology	• 20km from the proposed wind farm Site and incorporating the GCR. • 50m from the TDR boundary	The 20km distance was considered as this allowed the assessment to account for potential indirect cumulative effects on lands, soils and geology To account for local quarries and concrete suppliers in the area of which there are 3 no. within a 20km.

EIA Topic Chapter	Screening range of the Stage 1 list	Justification
Chapter 8 Hydrology and Hydrogeology	• 20km from the proposed wind farm Site and incorporating the GCR. • 50m from the TDR boundary	The 20km distance was considered, as this allowed the assessment to account for potential indirect cumulative effects on the water environment. To account for several energy development within the local area. Having considered the list of other projects in Appendix 16.1, the, assessment then focused on other projects that are downstream of the Proposed project.
Chapter 9 Air Quality and Climate	• 250m from the proposed wind farm Site and incorporating the GCR for dust emissions • 20km from the proposed wind farm boundary for traffic and equipment emissions • 50m from the TDR boundary	Potential effects in terms of dust management would be very limited beyond the outlined ranges.
Chapter 10 Noise and Vibration	• 20km from the proposed Project	Permitted, or operational wind farms within a 20km radius of the proposed Project for the purposes of the cumulative noise assessment were identified.
Chapter 11 Landscape and Visual Impact Assessment	• 20km from the proposed wind farm Site and incorporating the GCR.	The 20km was based on the Zone of Theoretical Visibility
Chapter 12 Traffic	• 20km from the proposed wind farm Site and incorporating the GCR.	The 20km distance was considered as this allowed the

EIA Topic Chapter	Screening range of the Stage 1 list	Justification
	• 50m from the TDR boundary	assessment to account for potential cumulative effects on traffic and transport receptors.
Chapter 13 Archaeology, Architectural and Cultural Heritage	• 20km from the proposed wind farm Site and incorporating the GCR. • 50m from the TDR boundary	The 20km zone accounts for the consideration of United Nations Educational, Scientific and Cultural Organisation (UNESCO) world heritage sites. This aligns with the main Study Area applied for baseline data collation and main assessment.
Chapter 14 Material Assets	• 20km from the proposed wind farm Site and incorporating the GCR. • 50m from the TDR boundary	The 20km distance was considered as this allowed the assessment to account for potential cumulative effects on material asset receptors
Chapter 15 Shadow Flicker	• 2km from the proposed wind farm Site	Shadow flicker is deemed unlikely at distances over 10 rotor diameters. This would be 1,380m for Technology Option 3. On this basis, a zone of 2km was considered.

Other aspects that were considered in determining the short lists for the topic specific CEAs included:

- The likelihood of temporal overlap between projects i.e. is there a likelihood for construction phases to overlap; and
- Whether the scale and nature of the other project has the potential to significantly contribute to the effects of the proposed Project and result in a significant cumulative effect.

The final short list of other projects is listed in the CEA section in each topic specific chapter.

16.3.3 Stage 3 Collating information on the other projects

Information was gathered on the short-listed other projects and this information was used to inform the CEA for each topic Chapter. Key data sources included:

- Planning authority ePlan websites;
- The ABP planning portal; and
- Developer websites.

16.3.4 Stage 4 Undertaking the assessment

The CEA for each topic Chapter was undertaken by the topic author. Each topic specific Chapter includes a CEA of the proposed Project with the short-listed other projects as relevant to that topic.

This Chapter summarises the findings from the CEAs carried out for each aspect and provides an overarching determination of likely significant cumulative effects.

Summaries from each chapter are detailed below.

Population and Human Health

The CEA considered the following developments:

- Sliabh Bawn Wind Farm (operational);
- Derryadd Wind Farm (In planning);
- Derrane Wind Farm (consented);
- Ballyfeeney Rock Quarry;
- N5 Ballaghaderreen to Scramoge Realignment Scheme;
- Strokestown Public Realm Enhancement;
- Lanesboro-Sliabh Bawn 110kV overhead line; and
- Housing developments at Strokestown (planning references 2560099 and 2460265)

The CEA concluded that any cumulative effects would be **Not Significant** during the construction, operational and decommissioning phases of the proposed Project, alone and in combination with these other projects.

As the N4 schemes have not yet been submitted for planning consent, there is no detailed information currently available in terms of design or environmental assessment. Furthermore, these schemes are located c.9.7km from the proposed Project at its nearest point.

It is considered that these schemes would be controlled by the proposed mitigation measures in their planning applications and by any conditions imposed in a grant of planning and there would be no cumulative effects with the proposed Project. This is considered **Not Significant** in EIA terms.

There were a number of other projects which included solar, battery energy storage system (BESS), industrial and overhead line developments. There is a no spatial overlap (i.e. these developments are all in excess of 9-18km from the proposed Project). Additionally any potential temporal overlap during the construction or decommissioning phases, would be temporary in nature. Any potential for cumulative effects would be limited and it was determined any cumulative effects would be **Not Significant**. This is also applicable to other projects situated along the TDR.

No additional mitigation measures are required to those already identified in the topic Chapters.

Biodiversity

The CEA considered the following developments:

- Sliabh Bawn Wind Farm (operational);
- Derryadd Wind Farm (In planning);
- Derrane Wind Farm (consented);
- Ballyfeeney Rock Quarry;
- N5 Ballaghaderreen to Scramoge Realignment Scheme; and
- Lanesboro-Sliabh Bawn 100kV overhead line; and

The CEA concluded that any cumulative effects would be **Not Significant** during the construction, operational and decommissioning phases of the proposed Project, alone and in combination with these other projects.

Other projects outlined in **Chapter 16 - Cumulative Effects Assessment** are not expected to have a significant cumulative effect with the proposed Project. This is due to their small size and the absence of complex likely effects. This includes projects situated along the TDR, where the localised and temporary nature of the work at the proposed accommodating works indicates that no likely significant cumulative effects are anticipated. This is **Not Significant** in EIA terms.

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Land, Soils and Geology

The CEA considered the following developments:

- Local quarry and concrete suppliers;
- 5 no. energy related projects that have been granted planning
- N5 Ballaghaderreen to Scramoge Realignment Scheme.

During the construction of the proposed Project there will be a requirement for the importation of engineered fill from source quarries. There is a total of 5 no. energy related projects that have been granted planning permission within a 20km radius of the Site.

Should construction work of the proposed Project coincide with the construction of these energy developments and the N5 Ballaghaderreen to Scramoge Project, currently under construction, the demand for imported aggregate for these projects have the potential to have a cumulative impact on local quarries.

However, given that there is a total of 3 no. quarry and concrete suppliers within 20km, the impact on local quarries is expected to be manageable, as supply is considered to exceed demand.

As such, it is considered there will be a **Short-term, Adverse and Imperceptible**, cumulative effect on soils and geology, caused by the project. In EIA terms, the effect is considered as **Not Significant**.

During the operational phase this effect will be a **Long-term, Adverse and Imperceptible** cumulative effect. In EIA terms, the effect is considered as **Not Significant**.

No additional mitigation measures are required to those already identified in **Chapter 7 - Land Soils and Geology**.

Hydrology and Hydrogeology

The CEA considered the following developments:

- Derryadd Wind Farm;
- Lanesboro-Sliabh Bawn 100kV overhead line;
- Cloon to Lanesborough 110kV Overhead line;
- Ballyfeeney Rock Quarry; and
- N5 Ballaghaderreen to Scramoge Realignment Scheme.

The Derryadd Wind Farm and the Cloon to Lanesborough 110kV Overhead line are located downstream of the proposed Project. However, both are located within separate river sub-basins to the proposed Project. The distance between these developments and the proposed Project is considered sufficient to prevent any cumulative effects on the receiving environment, as all are located outside the defined study area, which encompasses the relevant river sub-basins and 3km groundwater zone of influence.

Cumulative effects associated with Lanesboro-Sliabh Bawn 100kV overhead line, the Ballyfeeny Rock Quarry and the N5 Ballaghaderreen to Scramoge Realignment Scheme were each determined to be **Negligible, Short-Term** and **Adverse**, during the construction, operation and decommissioning phases of the proposed Project. In EIA terms these are considered to be **Not Significant**

Other projects outlined in **Appendix 16.1** were not expected to have a significant cumulative effect with the proposed Project. This is due to their small size and the absence of complex likely effects. This included projects situated along the TDR. The CEA concluded that there will be a **Slight, Short-Term, Adverse** cumulative effect, during the construction and decommissioning phases of the proposed Project, and a **Slight, Long-Term, Adverse** cumulative effect during the operational phase. In EIA terms cumulative effects between the proposed Project and other plans and projects are considered to be **Not Significant**

No additional mitigation measures are required to those already identified in **Chapter 8 – Water, Hydrology (Flood Risk Assessment) and Hydrogeology**.

Air Quality

The CEA considered the following development:

- Ballyfeeny Rock Quarry.

The Quarry site is subject to planning conditions for aspects which include dust management and monitoring. During the construction and decommissioning phases of the proposed Project, the dust management mitigation measures in **Chapter 9 - Air Quality and Climate, Section 9.1.8** will be implemented.

Given that mitigation measures are being implemented by both developments, it was considered that the effects from dust emissions will continue to be **Short-term, Adverse** and **Imperceptible**. In EIA terms, this is **Not Significant**. There is no dust emission associated with the proposed Project during the operational phase. There are no other projects on the list

in **Appendix 16.1 – Long list of other projects for the cumulative effects assessment** within the 250m dust screening range for the proposed wind farm Site and GCR.

In relation to traffic and equipment emissions to air, there will be no spatial overlaps with the other projects included in **Appendix 16.1 – Long list of other projects for the cumulative effects assessment**. Should there be an overlap in the construction/decommissioning phases, it is considered that any permitted projects would be controlled by mitigation measures in their planning applications and by any conditions imposed in a grant of planning. During the operational phase, any emissions would be minimal from the proposed Project. There would be no significant cumulative effects with the proposed Project. This is considered **Not Significant** in EIA terms

Other projects outlined in **Appendix 16.1 – Long list of other projects for the cumulative effects assessment**

relative to the TDR were not expected to have a significant cumulative effect with the proposed Project. This is due to their small size and the absence of complex likely air quality effects. The works for the TDR are also localised, minor and temporary in nature.

No additional mitigation measures are required to those already identified in **Chapter 9 - Air Quality and Climate** (Part 9.1 Air Quality).

Climate

Once operational, the proposed Project will not produce any direct CO₂ or other GHG emissions. The only emissions associated with the operational phase will arise from occasional maintenance and service vehicles. These emissions will be **Long-term, Adverse** and **Imperceptible** in the context of the project's overall operation. In EIA terms, the effect is considered as **Not Significant**. As such, the proposed Project will not contribute any measurable or significant adverse cumulative effects on climate when considered alongside other developments in the area. The Volume of vehicles is so low that, even when combined with traffic from other nearby or future projects, it would not lead to any noticeable or meaningful impact on greenhouse gas emissions or the climate.

On the contrary, should this proposed Project and other renewable energy projects become operational, the combined **Long Term, Positive** and **Significant** will be substantial climate through the avoidance of CO₂ emissions. In EIA terms, the effect is considered as **Significant**.

Noise and Vibration

The CEA considered the following development:

- Sliabh Bawn (constructed): 20 no. Siemens SWT-3.0-101 wind turbines with a hub height of 78 m.

It was found that the predicted cumulative noise levels for each of the Technology Options would be within the noise limits in accordance with the WEDG 2006 criteria at all wind speeds.

It was concluded that that would be effects in EIA terms would be **Not Significant**, with the proposed Project in combination with the Sliabh Bawn Wind Farm.

Landscape and Visual Impact Assessment

The CEA considered the following developments:

- Sliabh Bawn Wind Farm (operational);
- Derryadd Wind Farm (in planning);
- Derrane Wind Farm (consented);
- N5 Ballaghaderreen to Scramoge Realignment Scheme (consented); and
- Strokestown Public Realm Enhancement (consented).

Construction and Decommissioning Phases

In terms of cumulative construction and decommissioning phase effects, it is unlikely that the construction or decommissioning of two/three wind farm developments within the Study Area will occur in tandem. Should the construction or decommissioning of the proposed Project and another consented development (Derrane Wind Farm) occur at the same time, there is the potential for an increase in the intensity of construction/decommissioning activity within the Study Area. This includes the movement of HGVs along the surrounding road networks, storage of working vehicles and machinery, and the erection of tower cranes to construct/remove the turbine components. It is highly unlikely that the decommissioning of the four wind farms would occur in tandem as each development is currently at a different stage (i.e. consented, pre planning and in-planning). However, should this occur, there would be an increase in HGVs on the surrounding road network. However, effects are deemed **Not Significant** due to the notable offsets between each individual development.

However, as the two consented and existing developments are well offset from the proposed Project, it is not considered that these will generate any notable cumulative effects. Overall, the cumulative construction or decommissioning effects with other wind farm developments is deemed **Not Significant**.

Current Cumulative Scenario

The current cumulative ZTV map shows the potential for cumulative visibility between the turbines and all other existing and consented wind farm developments within the 20km Study Area. There is a clear separation of over 4.2km between the proposed Project turbines and the existing Sliabh Bawn turbines, which are clearly contained along Sliabh Bawn cloaked in extensive areas of conifer forestry, whereas the proposed Project is located on rolling lands further to the north. Thus, while there will be a noticeable increase in the intensity of wind farm development where the two developments are visible, they will clearly be perceived as two distinctly separate developments. It should be noted that, as the Sliabh Bawn turbines are existing, they form part of the baseline photography; therefore, any potential cumulative visual effects are discussed in the viewpoint appendix for each of the relevant viewpoints.

With regard to the consented Derrane Wind Farm, there is limited potential for any notable cumulative landscape and visual effects to occur in respect of the proposed Project, as the two developments are separated by a distance of over 16km.

The cumulative assessment determined that the proposed Project will contribute to a cumulative landscape and visual effect in the order of Low in respect of the cumulative scenario, as the proposed Project turbines are well offset from all other existing and consented wind farm developments, and will often be viewed in isolation, especially at the nearest local community receptors. The cumulative landscape and visual effects with regard to the current cumulative wind farm scenario and the other wind farms (consented and built) were assessed as **Not Significant**, in EIA terms.

The N5 Ballaghaderreen to Scramoge Project traverses the western extent of the central and wider Study Area for landscape and visual. Whilst there will be some cumulative effects generated in combination with the proposed Project with regard to the intensity of built development within the Study Area, the two development types are not interrelated, which diminishes the potential for any notable cumulative landscape and visual effects to occur. Overall, the main cumulative effects will result in the potential for clearer views of the proposed turbines to be afforded from areas of the surrounding landscape that are not currently publicly accessible. However, the updated N5 alignment will be located some 3km southwest of the proposed turbine array at its nearest point. Thus, whilst there will be some combined views of the proposed Project afforded, these are deemed to be **Not Significant**.

The Strokestown Public Realm Enhancement Scheme is not a form of development that would generate any notable cumulative landscape and visual effects in relation to a wind energy development. Thus, cumulative effects were deemed **Not Significant**.

Potential Future Cumulative Scenario

The proposed Derryadd Wind Farm, situated over 11 km to the southeast of the Site was considered. The addition of 22 turbines from the proposed Derryadd Wind Farm to the study area will result in an increase in wind energy development within the wider landscape. However, the potential for the proposed Project and the proposed Derryadd Wind Farm to generate any notable cumulative visual effects is limited due to the separation distances between the two developments and the flat nature of the terrain that separates them.

Furthermore, as the proposed Derryadd Wind Farm is also contained within the southern half of the study area – the same half as the other two cumulative wind farm developments – the potential for it to result in a notable increase in visibility of wind farm development throughout the study area is limited. This is reinforced in the potential future cumulative ZTV map (**Appendix 11.2 – LVIA Mapping**), where the potential for intervisibility of proposed, consented, existing, and in-planning developments will only increase from 70.1% of the study area to 71.2%.

Overall, the main cumulative effects generated by the addition of the proposed Derryadd Wind Farm relate to the increased quantum of wind turbines within the 20 km study area. However, as noted above, there is very limited potential for clear combined views of the proposed Derryadd Wind Farm and the proposed Project.

Thus, cumulative landscape and visual effects with regard to the potential future cumulative scenario are assessed as **Not Significant**, in EIA terms.

Traffic

The CEA considered the following developments:

- Derryadd Wind Farm (in planning);
- Derrane Wind Farm (consented);
- N5 Ballaghaderreen to Scramoge Realignment Scheme (consented); and
- N4 Mullingar to Longford (Roosky) Project (not yet in planning).

Derryadd and Derrane Wind Farms

As these are both greater than 10km from the proposed Project, neither of these projects are expected to have a direct cumulative impact if being constructed at the same time as the proposed Project. The access routes to the sites do not utilise the same local road network for construction workers travel, material deliveries, or GCR works.

There is a potential that the same TDR could be used in part for these projects (if utilising Galway Port) and therefore if proceeding in the same timeframe, the permits for the proposed Project, turbine deliveries which will be delivered under license and escort by An Garda Siochana would be on different dates ensuring that there are no overlapping or cumulative turbine deliveries using the same routes within the public road network.

N5 Ballaghaderreen to Scramoge Realignment Scheme

In relation to the N5 Road Project, the TDR assessment has been carried on both the existing and proposed road network, and the option used for the deliveries will depend on the progress of the National Road project at the material time.

The cumulative effects associated with the three proposed wind farms (Derrane, Derryadd and Ballyfeeny) and N5 Road Project was considered **Short Term, Slight** and **Not Significant** (**Not Significant** in EIA terms).

N4 Mullingar to Longford (Roosky) Project

The N4 Mullingar to Longford (Roosky) Project Preferred Option Map identifies the study area for the road project does not interact with the proposed wind farm Site or the proposed GCR or TDR routes.

As there is an existing relief road network to the north and west of Longford Town providing a connection between the N4 and N5 routes, materials deliveries and construction worker access to the proposed Site is unlikely to be affected by the proposed route which is primarily offline of the existing N4 route. The likely cumulative effect N4 project and the proposed Project are considered **Short Term, Imperceptible** and **Not Significant**. In EIA terms this is considered to be **Not Significant**.

Archaeology, Architectural and Cultural Heritage

The CEA considered the following developments:

- Sliabh Bawn Wind Farm (operational);
- Derryadd Wind Farm (In planning);
- Derrane Wind Farm (Consented); and
- N5 Ballaghaderreen to Scramoge Realignment Scheme.

The cumulative effects associated with the three wind farms (Sliabh Bawn, Derrane & Derryadd) and N5 Road Project was considered **Slight** (In EIA terms, **Not Significant**) due to

the remote locations of the wind farms, distances between each of the projects involved and the low linear nature of the N5 Ballaghaderreen to Scramoge Realignment Scheme.

For any of the other developments listed in **Appendix 16.1 - Long list of other projects for the cumulative effects assessment**, it is considered that there is no potential for significant cumulative effects. This is due to:

- Lack of a spatial overlap: Many of the developments are located at distances away from the proposed Project, that there is no potential for any cumulative effects.
- Small and localised scale of development: Many of the developments are of a small and/or localised nature and there would not be potential for cumulative effects.

There may be some temporal overlaps with the proposed Project, if construction activities occurred during the same periods. However, these developments would be controlled by their individual planning applications together with any conditions imposed in a grant of planning. Any such construction phase activities would also be temporary in nature and there would be no potential for significant cumulative effects. In EIA terms, the effect is considered as **Not Significant**

Material Assets

The other projects included in **Appendix 16.1** were reviewed in terms of the potential for cumulative material asset effects.

Even if numerous developments were to proceed concurrently with the proposed Project, there could be potential for **Short-term, Adverse** and **Slight** effects on telecommunications and utilities. This is considered as **Not Significant** in EIA terms. It is the responsibility of each developer to engage with the relevant service providers. Consultation with relevant service provider ensures their proposals do not result in cumulative effects.

In cases where potential effects are identified, each developer is accountable for enforcing appropriate mitigation measures. As a result, with proper planning and coordination, cumulative effects are considered unlikely.

Shadow Flicker

Cumulative shadow flicker impacts may arise in instances where sensitive receptors are at risk from potential shadow flicker impacts as a result of more than one wind farm. While separate wind farms are not likely to cause effects simultaneously, they could increase the cumulative total hours where a receptor is has the potential for impacts.

In this Instance, there are no consented nor constructed wind farms within a 2km range of the proposed Project. On the basis of shadow flicker being deemed unlikely at distances over 10 rotor diameters (1,380m for Technology Option 3) from a receptor, it is considered that there is no potential for cumulative shadow flicker effects resulting from the proposed Project. The nearest operational wind farm is Sliabh Bawn Wind Farm, whose nearest turbine is located approximately 4km from the nearest proposed turbine (T01). Therefore, the significance of effects on Shadow Flicker in relation to cumulative effects associated with the proposed Project are deemed to be **Not Significant**. In EIA terms, the effect is considered as **Not Significant**.

Please refer to **Chapters 5-15** for the full CEA's.

The final selection of Technology Option 1,2 or 3 would not introduce any new receptor pathways that have not already been considered in the Cumulative Assessment and would not result in any changes to the significance of effects, which have been determined.

16.4 References

- Advice Note 17: Cumulative Effects Assessment (Planning Inspectorate (PINS) for England, 2019) (hereafter referred to as the PINS Guidance). Accessed: <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment>
- Guidance on Assessing the Cumulative Impacts of Onshore Wind Energy Developments (Scottish Natural Heritage (SNH), 2018) (hereafter referred to as the SNH Guidance). Accessed: <https://www.nature.scot/sites/default/files/2019-11/Guidance%20-%20Assessing%20the%20cumulative%20impact%20of%20onshore%20wind%20energy%20developments.pdf>
- Guidelines on the information to be contained in Environmental Impact Assessment Reports (hereafter referred to as the Environmental Protection Agency (EPA) Guidelines) (EPA, 2022). Accessed: https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf
- Draft Revised Wind Energy Development Guidelines (Department of Housing, Planning and Local Government (DoHPLG), 2019) (hereafter referred to as the Draft WEDG's 2019). Accessed: <https://windenergyireland.com/images/files/draftrevisedwindenergydevelopmentguidelinesdecember2019.pdf>
- Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment (Department of Environment, Community and Local Government (DECLG), August 2018). Accessed: <https://assets.gov.ie/static/documents/guidelines-for-planning-authorities-and-an-bord-pleanala-on-carrying-out-environmental.pdf>
- Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission (EC), 2017). Accessed: <https://op.europa.eu/en/publication-detail/-/publication/2b399830-cb4b-11e7-a5d5-01aa75ed71a1>
- Wind Energy Development Guidelines (Department of the Environment, Heritage and Local Government, 2006) (hereafter referred to as the WEDG's 2006). Accessed: <https://assets.gov.ie/static/documents/wind-energy-development-guidelines-2006.pdf>
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (EPA, 2003). Accessed: <https://assets.gov.ie/static/documents/wind-energy-development-guidelines-2006.pdf>