

Environmental Impact Assessment Report (EIAR)

Volume 4 of 6: Summary

(Chapter 21) Cumulative Effects & Interactions

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Acronyms and Abbreviations

Acronym	Meaning
BPT	Break Pressure Tank
CEMP	Construction Environmental Management Plan
CPPA	Corporate Power Purchase Agreements
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement
EC	European Commission
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
FCV	Flow Control Valve
ha	Hectare
HGV	Heavy Goods Vehicle
IFI	Inland Fisheries Ireland
km	Kilometre
kV	Kilovolt
Mld	Million litres per day
NSL	Noise Sensitive Location
RWI&PS	Raw Water Intake and Pumping Station
RWRM	Raw Water Rising Main
TPR	Termination Point Reservoir
WTP	Water Treatment Plant
ZoI	Zone of Influence

21. Cumulative Effects & Interactions

21.1 Introduction

1. This chapter considers and assesses the potential for cumulative effects arising from the Proposed Project in association with 'other projects'¹ during the Construction & Operational Phases. This chapter outlines the proposed methodology to be applied to the assessment of likely significant cumulative effects in accordance with the requirements of the EIA Directive.
2. In addition, this chapter addresses the potential for interactions between different environmental impacts of the Proposed Project itself on the receiving environment.
3. This chapter should be read in conjunction with Appendix A21.1 and Appendix A21.2 of the Environmental Impact Assessment Report (EIAR) which includes the detailed assessments of potential cumulative impacts with other projects. This chapter should also be read in conjunction with environmental topic Chapters 6 to 20 and their associated appendices which present the likely significant effects from those topics and proposed mitigation measures.
4. Table 21.1 outlines the principal Proposed Project elements. A full description is provided in Chapter 4 (Proposed Project Description) of this Environmental Impact Assessment Report (EIAR).

Table 21.1: Summary of Principal Project Infrastructure

Proposed Project Infrastructure	Outline Description of Proposed Project Infrastructure*
Permanent Infrastructure	
Raw Water Intake and Pumping Station (RWI&PS) (Infrastructure Site) County Tipperary	<ul style="list-style-type: none"> • The RWI&PS would be located on a permanent site of approximately 4ha on the eastern shore of Parteen Basin in the townland of Garrynatineel, County Tipperary. In addition, approximately 1ha of land would be required on a temporary basis during construction. • The RWI&PS has been designed to abstract enough raw water from the River Shannon at Parteen Basin to provide up to 300Mld of treated water by 2050. • The RWI&PS site would include a bankside Inlet Chamber, the Raw Water Pumping Station Building, two Microfiltration Buildings, an Electricity Substation and Power Distribution Building, and Dewatering Settlement Basins. The tallest building on the RWI&PS site would be the Microfiltration Buildings which would be 10.9m above finished ground level. Additionally, there would be a telemetry mast, the top of which would be 14m above finished ground level. • Power for the RWI&PS would be supplied via an underground connection to the existing Birdhill 38 kV electricity substation. • A new permanent access road from the R494 would be constructed to access the proposed RWI&PS site. This access road would be 5m in width and 670m in length. • The RWI&PS site boundary would be fenced with a stock proof fence and a 2.4m high paladin security fence 5m inside the boundary. The site would be landscaped in line with the surrounding environment to reduce its visual impact.
Raw Water Rising Mains (RWRMs) (Pipeline) County Tipperary	<ul style="list-style-type: none"> • The RWRMs would consist of two 1,500mm underground pipelines made from steel that would carry the raw water approximately 2km from the RWI&PS to the Water Treatment Plant (WTP) at Incha Beg, County Tipperary. The water would be pumped from the pumping station at the RWI&PS to the WTP. • Twin RWRMs have been proposed so that one RWRM can be taken out of service for cleaning and maintenance while still providing an uninterrupted flow of raw water through the other RWRM. • The RWRMs would include Line Valves, a Lay-By, Air Valves and Cathodic Protection. • A 20m wide Permanent Wayleave would provide Uisce Éireann with operational access to the RWRMs.

¹ In accordance with Section 21.2 Proposed Methodology, the term 'other projects' used throughout this chapter covers all approved and still implementable planning applications, any planning applications yet to be approved, and any other major developments currently at the pre-planning application and preliminary design phases for which publicly available plans and particulars exist, that have the potential for cumulative effects with the Proposed Project. Due consideration has therefore been given to 'other projects' associated with plans and programmes for the purposes of the cumulative effects assessment presented within this chapter.

Proposed Project Infrastructure	Outline Description of Proposed Project Infrastructure*
<p>Water Treatment Plant (WTP) (Infrastructure Site) County Tipperary</p>	<ul style="list-style-type: none"> The WTP would be located on a permanent site of approximately 31ha at Incha Beg, County Tipperary, 2.6km north-east of the village of Birdhill, and 2km east of the proposed RWI&PS. In addition, approximately 2.5ha of land would be required on a temporary basis during construction. The WTP would treat the raw water received from the RWI&PS via the RWRMs. Once treated, the High Lift Pumping Station (HLPS) would deliver the treated water onwards from the WTP to the Break Pressure Tank (BPT) at Knockanacree, County Tipperary, via the Treated Water Pipeline. The WTP would comprise of a series of tanks and buildings including the Raw Water Balancing Tanks, Water Treatment Module Buildings, Sludge Dewatering Buildings, Sludge Storage Buildings, Clear Water Storage Tanks and HLPS, an Electricity Substation and Power Distribution Building, and the Control Building. The tallest building on the WTP site would be the Water Treatment Module Buildings which would be up to 15.6m above finished ground level. Additionally, there would be a telemetry mast, the top of which would be 14m above finished ground level. There would also be a potential future water supply connection point at the junction between the permanent access road and the R445. Power for the WTP would be supplied via an underground connection to the existing Birdhill 38 kV electricity substation. Solar panels would be placed on the roofs of the Chemical Dosing Manifold Building, the Water Treatment Module Buildings, Clear Water Storage Tanks and Sludge Storage Buildings, and at a number of locations on the ground to supplement the mains power supply. A new permanent access road from the R445 would be constructed and would be 6m in width and 640m in length. The WTP site boundary would be fenced with a stock proof fence and a 2.4m high palisade security fence 5m inside the boundary. The site would be landscaped in line with the surrounding environment to reduce its visual impact.
<p>Treated Water Pipeline from the WTP to the BPT (Pipeline) County Tipperary</p>	<ul style="list-style-type: none"> The Treated Water Pipeline from the WTP to the BPT would consist of a single 1,600mm underground steel pipeline which would be approximately 37km long. The water would be pumped through this section of the Treated Water Pipeline by the HLPS. The Treated Water Pipeline would include Line Valves, Washout Valves, Air Valves, Manways, Cathodic Protection and Lay-Bys. A 20m wide Permanent Wayleave would provide Uisce Éireann with operational access to the pipeline (this Wayleave has been extended to approximately 30m at some Line Valves to provide access between the Lay-Bys and Line Valves). There would be an additional 10m wide Permanent Wayleave at certain locations for operational access to smaller pipes connecting Washout Valves with permanent discharge locations.
<p>Break Pressure Tank (BPT) (Infrastructure Site) County Tipperary</p>	<ul style="list-style-type: none"> The BPT would be located on a permanent site of approximately 7ha in the townland of Knockanacree, County Tipperary. In addition, approximately 0.8ha of land would be required on a temporary basis during construction. The BPT would be located at the highest point of the pipeline. It marks the end of the Treated Water Pipeline from the WTP to the BPT and the start of the Treated Water Pipeline from the BPT to the Termination Point Reservoir (TPR) in the townland of Loughtown Upper, at Peamount, County Dublin. It would act as a balancing tank and would be required to manage the water pressures in the entire Treated Water Pipeline during flow changes, particularly during start-up and shut-down. The BPT site would include the BPT and a Control Building. The BPT would be a concrete tank divided into three cells covered with an earth embankment. The BPT tanks would be 5m in height and partially buried below finished ground levels. The Control Building would be 7.5m over finished ground level. Additionally, there would be a telemetry mast, the top of which would be 14m above finished ground level. Access to the BPT site would be via a new permanent access road from the L1064 which would be 5m wide and 794m in length. Power for the BPT would be supplied via an underground connection from the existing overhead power line. Solar panels would be placed on the south facing side of the control building roof, on the BPT and at ground level to the south of the site to supplement the mains power supply. The BPT site boundary would be bounded by the existing hedgerow / tree line with a 2.4m high palisade security fence around the permanent infrastructure. The site would be landscaped in line with the surrounding environment to reduce its visual impact.

Proposed Project Infrastructure	Outline Description of Proposed Project Infrastructure*
<p>Treated Water Pipeline from the BPT to the TPR (Pipeline)</p> <p>Counties Tipperary, Offaly, Kildare and Dublin (within the administrative area of South Dublin County Council)</p>	<ul style="list-style-type: none"> The Treated Water Pipeline from the BPT to the TPR would consist of a single 1,600mm underground steel pipeline, approximately 133km long. The water would normally travel through the Treated Water Pipeline by gravity; however, flows greater than approximately 165Mld would require additional pumping from the Booster Pumping Station (BPS) in the townland of Coagh Upper, County Offaly. The Treated Water Pipeline would include Line Valves, Washout Valves, Air Valves, Manways, Cathodic Protection, Lay-Bys and potential future connection points. A 20m wide Permanent Wayleave would provide Uisce Éireann with operational access to the pipeline (this Wayleave has been extended to approximately 30m at some Line Valves to provide access between the Lay-Bys and Line Valves). There would be an additional 10m wide Permanent Wayleave at certain locations for operational access to smaller pipes connecting Washout Valves with permanent discharge locations.
<p>Booster Pumping Station (BPS)</p> <p>(Infrastructure Site)</p> <p>County Offaly</p>	<ul style="list-style-type: none"> The BPS would be located on a permanent site of approximately 2.6ha in the townland of Coagh Upper, County Offaly. It would be located approximately 30km downstream from the BPT. In addition, approximately 3ha of land would be required on a temporary basis during construction. The BPS would be required when the demand for water causes the flow through the pipeline to exceed approximately 165Mld. The BPS site would consist of a single-storey Control Building with a basement below. It would have a finished height of 7.6m above finished ground level. There would also be a separate Electricity Substation and Power Distribution Building. Additionally, there would be a telemetry mast, the top of which would be 14m above finished ground level. Power to the BPS would be supplied from an existing 38 kV electricity substation at Birr, through cable ducting laid within the public road network. There would be ground mounted solar panels on the southern side of the BPS site to supplement the mains power supply. The site would be accessed directly from the L3003. The BPS site boundary would be fenced with a stock proof fence and a 2.4m high palisade security fence between 5m -12m inside the boundary. The site itself would be landscaped in line with the surrounding environment to reduce its visual impact.
<p>Flow Control Valve (FCV)</p> <p>(Infrastructure Site)</p> <p>County Kildare</p>	<ul style="list-style-type: none"> The FCV controls the flows in the Treated Water Pipeline from the BPT to the TPR. It would be a small permanent site of approximately 0.5ha in the townland of Commons Upper in County Kildare. In addition, approximately 0.6ha of land would be required on a temporary basis during construction. It would consist of three 700mm diameter FCVs and three flow meters installed in parallel with the Line Valve and housed within an underground chamber. Access to the FCV site would be directly off the L1016 Commons Road Upper. Power supply to the FCV site would be provided from the existing low voltage network via a combination of overhead lines and buried cables. There would be ground mounted solar panels on the north-eastern side of the site to supplement the mains power supply. Kiosks at the FCV site would house the Programmable Logic Controller, telemetry and power supply for the Line Valve. There would also be a telemetry mast, the top of which would be 14m above finished ground level. The site boundary would be fenced with a stock proof fence and a 2.4m high palisade security fence 5m inside the boundary.

Proposed Project Infrastructure	Outline Description of Proposed Project Infrastructure*
<p>Termination Point Reservoir (TPR) (Infrastructure Site) County Dublin (within the administrative area of South Dublin County Council)</p>	<ul style="list-style-type: none"> The TPR would be located on a permanent site of approximately 8.3ha adjacent to an existing treated water reservoir in the townland of Loughtown Upper, at Peamount, County Dublin (within the administrative area of South Dublin County Council) and would have capacity for 75ML of treated water supply. In addition, approximately 1.1ha of land would be required on a temporary basis during construction. It would be located at the downstream end of the Treated Water Pipeline from the BPT to the TPR and would be the termination point for the Proposed Project. It would be at this location that the Proposed Project would connect to the existing water supply network of the Greater Dublin Area Water Resource Zone (GDA WRZ). The TPR would consist of an above-ground storage structure, associated underground Scour Water and Overflow Water tanks and a Chlorine Dosing Control Building. The TPR would be a concrete tank divided into three cells and covered with an earth embankment. The top of the TPR would be 11.2m above finished ground level. The Chlorine Dosing Control Building would be 8.4m over finished ground level. Additionally, there would be a telemetry mast, the top of which would be 14m above finished ground level. Power for the TPR would be supplied via an underground connection to the existing electricity substation at Peamount Reservoir. There would be solar panels on top of a portion of the northern cell of the TPR to supplement the mains power supply. A new permanent access road from the R120 would be constructed and would be 5m wide and 342m in length. The TPR site would be bounded by the existing hedgerow to the west and existing fence to the east with a 2.4m high palisade security fence around the permanent infrastructure. The site itself would be landscaped in line with the surrounding environment to reduce its visual impact.
Proposed 38 kV Uprate Works – Power Supply to RWI&PS and WTP	
<p>Proposed 38 kV Uprate Works Ardnacrusha – Birdhill (Power Supply) Counties Clare, Limerick and Tipperary</p>	<ul style="list-style-type: none"> The proposed 38 kV Uprate Works would be necessary to deliver adequate electrical power to the RWI&PS and WTP. The proposed works would include the uprating of the existing Ardnacrusha – Birdhill Line and the replacement of polesets/structures with an underground cable along a section of the Ardnacrusha – Birdhill – Nenagh Line. There would also be works at the existing Birdhill 38 kV electricity substation including the provision of a new 38 kV modular Gas Insulated Switchgear Modular Building, new electrical equipment and lighting, together with new fencing and associated works.
Temporary Infrastructure – Required for Construction Phase Only	
<p>Construction Working Width Counties Tipperary, Offaly, Kildare and Dublin (within the administrative area of South Dublin County Council)</p>	<ul style="list-style-type: none"> A Construction Working Width would be temporarily required for the construction of the RWRMs and the Treated Water Pipeline, and the subsequent reinstatement of the land. The Construction Working Width would generally be 50m in width but would be locally wider near features such as crossings, access and egress points from the public road network, Construction Compounds and Pipe Storage Depots.
<p>Construction Compounds Counties Tipperary, Offaly, Kildare and Dublin (within the administrative area of South Dublin County Council)</p>	<ul style="list-style-type: none"> Eight Construction Compounds would be temporarily required to facilitate the works to construct the Proposed Project. Five Construction Compounds would be located along the route of the Treated Water Pipeline at the following Infrastructure Sites: RWI&PS, WTP, BPT, BPS and TPR, with an additional three Construction Compounds located at Lisgarraff (County Tipperary), Killananny (County Offaly) and Drummond (County Kildare). Construction Compounds would act as a hub for managing the works including plant/material/worker movement, general storage, administration and logistical support. The Principal Construction Compound at the WTP would require 30ha of land during construction. The other three Principal Construction Compounds would require land temporarily during construction ranging between approximately 12ha and 16ha. The four Satellite Construction Compounds at the other permanent Infrastructure Sites (excluding the FCV) would require land during construction ranging between approximately 3ha and 12ha.
<p>Pipe Storage Depots Counties Tipperary, Offaly and Kildare</p>	<ul style="list-style-type: none"> Nine Pipe Storage Depots would be temporarily required to supplement the Construction Compounds and would serve the installation of pipe between the WTP and the TPR. Pipe Storage Depots would take direct delivery of the pipe for storage before onward journey to the required location along the Construction Working Width. The Pipe Storage Depots would vary in size and require land temporarily during construction generally ranging between approximately 2ha and 7ha but with one site being larger at 11ha.

* Note all land take numbers in this table are affected by rounding to one decimal place.

5. The construction of the Proposed Project is anticipated to run from 2028 to 2032, with the first operational year anticipated to be 2033.
6. This chapter is supported by the following documents:
 - Appendix A21.1 (Record of Stages 1 and 2 of Cumulative Effects Assessment)
 - Appendix A21.2 (Stage 4 Assessments)
 - Figure 21.1 Cumulative Assessment.
7. Figures which are referenced in the text are provided in Volume 5 of this EIAR.
8. This assessment has been undertaken and reported by a team of competent experts. Refer to Chapter 2 (The Environmental Impact Assessment Process) for a description of the qualifications and expertise of the specialists that have inputted to this chapter.

21.1.1 Cumulative Impact Assessment

9. Two types of cumulative effect are considered in this EIAR:
 - **Cumulative Effects (Inter-project effects):** When an environmental resource or receptor is affected by more than one proposed development, development plan, land allocation, etc. For example, several nearby, unrelated developments could lead to greater, aggregated effects on the setting of a cultural heritage landscape than if the developments were considered in isolation. Cumulative effects can also occur over an extended timeline, with several distinct periods potentially occurring over the construction and operational life of the infrastructure. The assessment of cumulative effects is primarily described in this chapter (Section 21.3). However, certain aspects of cumulative impact assessment are addressed within topic chapters, for example:
 - Where future committed developments are included within the traffic modelling, the outputs from that modelling are used to inform the assessments of air quality and noise impacts.
 - **Environmental Interactions (Intra-project effects):** When a baseline resource or receptor is affected by more than one type of environmental impact from the same proposed development, in this case the Proposed Project. For example, a local community may be subject to construction traffic, air quality, noise, severance and visual impacts. Environmental interactions may occur at different points along a project timeline; they do not necessarily relate to the existing baseline. In EIA methodology, environmental interactions can also be referred to as in-combination effects, but because this could lead to confusion with the Natura Impact Statement (NIS) this term has not been used in the EIAR. The assessment of environmental interactions is described in the respective environmental topic chapters (Chapters 6 to 20) and the identified interactions are summarised within this chapter (Section 21.4). Examples of environmental interactions assessment within the topic chapters include the following:
 - Chapter 8 (Biodiversity) includes the assessment of effects in relation to water, air quality and noise on ecology receptors
 - Chapter 14 (Population) considers the impacts on community amenity due to combined effects from changes in traffic, air quality, noise, water and visual amenity
 - Chapter 15 (Human Health) considers the impacts on health due to combined effects from changes in traffic, air quality, noise, water and community amenity.

21.1.2 Assessment Guidance

10. This assessment has been undertaken with regard to the following best practice guidance:
 - Advice Note Seventeen: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (UK Planning Inspectorate 2024)

- Guidance on the preparation of the Environmental Impact Assessment Report (European Commission (EC) 2017)
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (EC 1999)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (Department of Housing, Planning and Local Government, August 2018)
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency (EPA) 2022).

11. Any references to legislation include any amendments thereto.

21.1.3 Consultation

12. Consultation responses from key stakeholders, landowners and the public were reviewed and considered in compiling this chapter. Chapter 2 (The Environmental Impact Assessment Process) of the EIAR sets out the approach the Proposed Project has taken with regard to environmental scoping, in particular the EIAR Scoping Methodology Report (Uisce Éireann 2023) in respect of the Proposed Project and also the Environmental Impact Statement Scoping Report² (Irish Water 2016) relating to a previous iteration of the project.

13. The scoping consultation responses relevant to cumulative effects received from stakeholders are provided in Table 21.2. Further detail on the Proposed Project consultation is included in Chapter 2 (The Environmental Impact Assessment Process) and responses received are in the Water Supply Project: Eastern and Midlands Region – Consultation Report, which forms part of the Strategic Infrastructure Development planning application for the Proposed Project.

Table 21.2: Principal Cumulative Impacts & Interactions Scoping Issues Raised During Previous Consultation

Consultee	Comment	Response
Health Service Executive	There is the requirement for a strong cumulative assessment in relation to health impacts.	Cumulative impacts (inter-project effects) related to health impacts are described and assessed within this chapter, where applicable. Environmental interactions (intra-project effects) related to health are discussed in Chapter 15 (Human Health).
Department of Housing, Local Government and Heritage (DoHLGH)	There is a likelihood of cumulative or in combination effects arising notably from flood relief and drainage activities on the lower Shannon system. In relation to the assessment and analysis of potential cumulative or in combination effects of other plans and projects, there should be due consideration of the following and of any relevant plan-level mitigation that the plans contain: <ul style="list-style-type: none"> • OPW Flood Risk Management Plans/CFRAMS • Flood alleviation measures on the lower Shannon system, and the OPW annual and multi-annual drainage maintenance programmes • County/City Development Plans • Local Area Plans • Irish Water plans and projects • Ireland's River Basin Management Plan • Other developments, including agricultural reclamation and restructuring of land holdings. 	Due consideration has been given to the plans and projects listed in line with the assessment methodology set out within this chapter.

² As set out in Chapter 2 (The Environmental Impact Process), the Environmental Impact Statement Scoping Report (Irish Water 2016) was based on a previous iteration of the project, however, feedback received from stakeholders informed future scoping and design development and has been considered in this chapter where relevant to the Proposed Project.

21.2 Proposed Methodology

21.2.1 Introduction

14. Cumulative impacts are defined as “*Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project.*” (European Commission 1999). As required by the EIA Directive, the cumulative impact assessment identifies the likely direct, indirect, secondary, cumulative, transboundary, short, medium or long-term positive and negative effects as a result of the identified ‘other projects’ in combination with the Proposed Project. The detailed methodology for identifying and assessing the cumulative impacts is detailed in the sections below.
15. The Proposed Project would deliver nationally important strategic infrastructure with individual elements designed with a lifespan of 80 to 100 years. The strategic importance of the Proposed Project for water supply in the Eastern and Midlands Region is such that there is no plan to decommission these structures and Uisce Éireann is committed to maintaining and repairing them into the future. On this basis it is not likely that the structures will be decommissioned and therefore, decommissioning of the Proposed Project has not been considered further in this assessment.
16. The assessment reported in this chapter has considered the mitigation that has been embedded in the design to avoid or reduce environmental effects. Embedded mitigation is an intrinsic part of the Proposed Project design and therefore the assessment of effects assumes all embedded design measures are in place.

21.2.2 Cumulative Assessment Stages

17. The cumulative assessment has been undertaken in the following stages:
 - Stage 1: Establishing the Long List of Other Projects
 - Stage 2: Establishing the Shortlist of Other Projects
 - Stage 3: Information Gathering for the Shortlist of Other Projects
 - Stage 4: Assessment of cumulative effects.
18. The following sections provide further details for each of these stages.

21.2.2.1 Stage 1: Establishing the Long List of Other Projects.

19. The first step in determining cumulative impacts comprised the identification of a long list of other projects which may have the potential to overlap with the Proposed Project based on available information. While the EIA Directive only requires the consideration of other existing and/or approved projects, this assessment has gone further and has considered potential or “known” projects. This approach was undertaken as there is potential for a number of other projects to receive approval and be progressed within that time period which may give rise to cumulative effects in combination with the Proposed Project. It was, therefore, considered appropriate to identify projects which, at the time of assessment, were yet to be approved, but for which a decision and potentially approval is reasonably foreseeable over the likely consenting and construction period anticipated for the Proposed Project.
20. A long list of other projects was collected and collated by carrying out a desk study, using the most up to date data at the time of writing. The list of data sources used for this desk study is outlined in Section 21.2.2.1.1 of this chapter.
21. The desk study identified other projects within a defined zone of influence (Zoi)/study area which may have the potential to interact with the Proposed Project.

22. The long list is included as Appendix 21.1 (Record of Stages 1 and 2 of Cumulative Effects Assessment).
23. For the purpose of the Proposed Project, the categories of other projects included in the cumulative impact assessment have been taken to include:
- Any approved and still implementable planning applications backdated approximately 10 years from the time the planning search was undertaken (as it was assumed applications dated further in the past than this would have either been completed or are no longer likely to proceed) with the potential for cumulative impacts with the Proposed Project
 - Any projects which, at the time of assessment, were yet to be approved, but for which a decision and potentially approval is reasonably foreseeable over the likely consenting and construction period anticipated for the Proposed Project
 - Any other major developments that are currently subject to the pre-planning application and preliminary design phases for which publicly available plans and particulars exist, with the potential for cumulative impact with the Proposed Project.
24. In line with Advice Note Seventeen: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (UK Planning Inspectorate 2024), the assessment focused on major projects in order to provide a “proportionate” assessment that is “not longer than is necessary”, and included application of a threshold including only development proposals which are classified as EIA development. The EIA Regulations include the consideration of other existing or approved developments, or both, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources. This has been addressed within the environmental topic chapters (Chapters 6 to 20), where existing projects contribute to the baseline environment. Each chapter considers the incremental impact of the Proposed Project within the context of the carrying capacity of the environment and projects that have gone before.
25. Notably, this includes consideration of the environmental baseline due to the operation of the existing Ardnacrusha Generating Station and this is addressed in detail in Chapter 9 (Water) and Chapter 8 (Biodiversity). The water levels on Lough Derg and Parteen Basin are controlled by ESB using both the Parteen Weir and the Shannon Hydroelectric Station at Ardnacrusha. The levels for Lough Derg are managed within what is referred to as the Normal Operating Band, and an upper and lower level for Parteen Basin (see Appendix A9.1, Annex A: Hydrological Modelling Report, for further information). ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. Given this interaction with the Proposed Project, and the environmental importance of the Lower River Shannon Special Area of Conservation, Ardnacrusha Generating Station has also been considered within the cumulative effects assessment. However, it should be noted that the proposed change in the operational regime of Ardnacrusha will maintain the hydrological status quo, and therefore the cumulative effect with Ardnacrusha Generating Station would not differ to the effects assessed for the Proposed Project reported in in Chapter 9 (Water) and Chapter 8 (Biodiversity).

21.2.2.1.1 Sources Used for Identification of Other Projects

26. The following sources were used to identify other projects:
- An Coimisiún Pleanála website (<http://www.pleanala.ie/index.htm>) – for details of Strategic Infrastructure Projects and Strategic Housing Developments

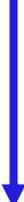
- Local authority websites through their consultation portal and the development plans for future planned projects for the following authorities:
 - Clare County Council
 - Kildare County Council
 - Laois County Council
 - Limerick County Council
 - Offaly County Council
 - South Dublin County Council
 - Tipperary County Council
 - National Planning Application Database (DoHLGH (n.d.)) (<https://data.gov.ie/dataset/national-planning-applications>) – a downloadable list of planning applications sent from local authorities
 - Project Ireland 2040, which combines the National Development Plan (Government of Ireland 2021) and National Planning Framework (Department of Housing, Local Government and Heritage 2025) (gov.ie - Project Ireland 2040 [www.gov.ie] and its interactive mapper). (<https://geohive.maps.arcgis.com/apps/MapSeries/index.html?appid=f05a07c5a0324b1a887cd9d5d7103e22>)
 - The EIA Portal (<https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal>) maintained by the Department of Housing, Planning and Local Government – for applications for development consent accompanied by an EIAR
 - Eirgrid Network Delivery Portfolio (NDP) for existing and planned projects through the quarterly publications (Q2 2025) (<https://www.eirgrid.ie/grid/grid-reports-and-planning/network-delivery-portfolio>) (EirGrid 2025)
 - Uisce Éireann's website which includes a page on its projects (<https://www.water.ie/projects/>)
 - Transport Infrastructure Ireland (TII) website (<https://www.tii.ie/public-transport/projects-and-improvements/>) – to identify major transport projects and programmes.
27. All planning application data provided by each local authority are fed into the National Planning Application Database (DoHLGH (n.d.)). This dataset was used to identify planning applications within a search area of the Proposed Project. The dataset included planning applications of various scales, most of which were for small-scale applications such as domestic/residential modifications. The planning application lists were searched to identify and exclude very minor applications from the long list on the basis that, given their minor nature, these were not likely to have a cumulative effect noticeable over the effects of the Proposed Project in isolation. Examples of planning applications which were excluded from the preliminary long list were applications to construct or demolish conservatories, house extensions, loft conversions, changes of use for single or small numbers of buildings, construction of outbuildings, modifications to driveways and retention applications. Granted and pending applications older than 10 years were also excluded from the preliminary long list on the basis that they would likely already have been built (and so would form part of the existing baseline) or are now unlikely to be progressed. Granted and pending applications for which planning permission has expired, and no extension of time has been applied for, have also been discounted from the preliminary long list as they are also deemed unlikely to progress unless a new planning permission is being sought. Applications which have been refused, withdrawn or deemed invalid were discounted from the preliminary long list on the basis that they are unlikely to progress, unless through successful appeal or resubmission.
28. The exercise to identify relevant planning applications was undertaken in August 2025.

29. In addition to this process and to capture other potentially relevant foreseeable projects, major projects as part of transport and other infrastructure programmes were added to the preliminary long list. This included the identification of major projects from Project Ireland 2040 and Development Plans from bodies such as EirGrid, as well as other projects being brought forward by Uisce Éireann in addition to the Proposed Project.

21.2.2.1.2 Assignment of Tiers

30. A 'tier' (1 or 2) was assigned to each of the other projects to indicate the level of certainty associated with its implementation, as detailed in Table 21.3. While the tiers provide an indication of the level of information available on which to base an assessment, the status of planning applications changes through time. Appendix A21.1 (Record of Stages 1 and 2 of Cumulative Effects Assessment) provides an indication of the tier of each development at the time of assessment, but some would have subsequently changed and further information on those developments may now be available, which was not available at the time of assessment. Guidance advises that the assessment of Tier 2 projects should be confined to a very high-level qualitative assessment.

Table 21.3: Tier 1 and Tier 2 Classification for Other Projects

Tier 1	Under construction	<p>Decreasing level of detail likely to be available</p> 
	Permitted application(s) but not yet implemented	
	Submitted application(s) but not yet determined	
Tier 2	Identified in the relevant Development Plan and Strategies (and emerging Development Plans, with appropriate weight being given as they move closer to adoption) recognising that available information on any relevant proposals will be limited.	
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.	

21.2.2.1.3 Zone of Influence/Study Area

31. There is no defined Zol/study area for undertaking a cumulative impact assessment. As such, the assessment takes into consideration the defined study areas as outlined within the specialist assessments within each chapter of the EIAR. The study area for each assessment topic is discussed within the cumulative impact assessment for each topic in Section 21.3 (Assessment of Cumulative Environmental Effects from Other Projects).

32. Resource & waste management is assessed on a national and regional basis in Chapter 19 (Resource & Waste Management). Therefore, this aspect does not require further consideration in the cumulative effects assessment reported in this chapter.

33. Climate is assessed on a national basis in Chapter 13 (Climate), however, because the receptor for climate emissions is global and due to the existence of sectoral targets or national strategy, cumulative assessment is not appropriate for climate. This is discussed further in Section 21.2.2.5.2 of this chapter.

34. Traffic & Transport is assessed on a regional basis in Chapter 7 (Traffic & Transport), which considered a number of other projects. The list of other projects included within this assessment is described within Section 7.2.6.3.1 of Chapter 7 and presented in Appendix A7.1 (Traffic and Transportation Assessment) of the EIAR. Therefore, the traffic & transport assessment for cumulative effects only includes other projects which were identified after the traffic model was finalised. This is discussed further in Section 21.2.2.5.3 of this chapter.

21.2.2.2 Stage 2: Establishing the Shortlist of Other Projects

35. Inclusion or exclusion threshold criteria were applied to the list of other projects from Stage 1 to determine whether they had any potential to give rise to cumulative impacts with respect to the following:
- Whether the project has been completed, or the planning applications have been refused, withdrawn or expired (where not identified at Stage 1). If a project was identified as completed, it has been considered as part of the baseline as appropriate.
 - Whether there is a likelihood of temporal overlap (including overlap for construction and operational phases) between the Proposed Project and the other projects. Other projects with construction (2028 to 2032) and operational (2033 onwards) phases overlapping with the Proposed Project were considered further. Other projects with temporal scopes outside these periods were not shortlisted for the assessment.
 - Whether the scale and nature of the other project is likely to result in cumulative impacts with the Proposed Project, taking account of the aspects of the environment for which the Zol/study area is relevant. Statutory definitions and EIA screening thresholds were considered in determining issues of scale.
36. Professional judgement was used in applying these threshold criteria. The identification and shortlisting process is documented in Appendix A21.1 (Record of Stages 1 and 2 of Cumulative Effects Assessment) of the EIAR. The reasons for excluding any development from further consideration are recorded. Where other projects with the potential to give rise to cumulative effects with the Proposed Project were identified, these were taken forward to Stage 3.

21.2.2.2.1 Shortlisting

37. The shortlisting was informed by input from the environmental topic specialists involved in the preparation of this EIAR, which allowed for consideration as to whether a particular type of project could result in impacts to receptors of interest for the Proposed Project assessment. In most cases, the Zol/study area for the topic has informed whether or not another project is likely to have a cumulative effect. However, in some instances the environmental topic specialists have considered that there is potential for a likely significant cumulative effect beyond the Zol/study area applied for the Proposed Project in isolation, and therefore, a project could be scoped into Stages 3 and 4 for an individual topic even though it was outside of the pre-defined Zol/study area identified at Stage 1. The rationale for whether a project should be scoped out or not is recorded where relevant in Appendix A21.1 (Record of Stages 1 and 2 of Cumulative Effects Assessment), which provides a record of key decisions made when shortlisting projects for Stages 3 and 4 of the cumulative impacts assessment.

21.2.2.3 Stage 3: Information Gathering for the Shortlist of Other Projects

38. For the shortlisted other projects, sufficiently detailed information was compiled to inform the Stage 4 assessment. This included information such as:
- Proposed design and location
 - Proposed programme of construction, operation and decommissioning (where available)
 - Environmental assessments that set out baseline data and effects arising from the other projects.
39. The relevant information was sourced from the websites of the relevant local planning authorities, through general internet searches and project team knowledge. Figure 21.1 shows the locations of each of the other projects taken forward for cumulative impact assessment.
40. The assessment has relied on readily available information from the planning and EIA portals, with regard to guidance and best practice. Professional judgement has been used where necessary to interpret the available information for use in the assessment of cumulative effects.

21.2.2.4 Stage 4: Assessment

41. The cumulative impacts of the Proposed Project with each of the other projects were assessed to a level of detail commensurate with the information that was available at the time of assessment. Where information regarding proposed other projects was limited, these gaps were acknowledged within the assessment and the associated uncertainty in these cases is documented.
42. There are no prescriptive techniques used in the evaluation of the significance of cumulative effects. Professional judgement and consideration of standards, guidelines and environmental carrying capacities have been applied to determine whether in-combination impacts give rise to additional levels of significance. The EC and EPA guidelines referenced above were considered.
43. The significance criteria used to assess likely cumulative effects considered the capacity of environmental resources and receptors to accommodate changes that are likely to occur. These include:
 - The duration of impact (i.e. would it be temporary or permanent)
 - The contribution of the Proposed Project to the overall effects
 - The extent of impact (e.g. its geographical area)
 - The type of impact: whether additive (e.g. the loss of two pieces of woodland of 1ha, resulting in 2ha cumulative woodland loss) or synergistic (e.g. two discharges combine to have an effect on a species not affected by discharges in isolation)
 - The frequency of the impact
 - The 'value' and resilience of the feature or resource affected
 - The likely success of mitigation.
44. The full results and detail of the assessments are documented in Appendix A21.2 (Stage 4 Assessments) of the EIAR. A summary of other projects that were screened in for consideration of potential cumulative effects with the Proposed Project are detailed in Section 21.3 of this chapter for each environmental aspect, correlating with the EIAR chapters. Section 21.3 of this chapter also presents the assessment of likely significant cumulative effects identified on a topic-by-topic basis.

21.2.2.5 Discipline-Specific Criteria

45. For some topics, a slightly different approach has been deemed appropriate to provide a more robust cumulative impact assessment as outlined in the sections below.

21.2.2.5.1 Biodiversity & Water

46. The ZoI for biodiversity and water cumulative effects has been defined as 20km to ensure consistency in assessment methodologies with the In-Combination Assessment and the Water Framework Directive Assessment study areas that were identified for both chapters respectively. It should be noted that the In-Combination Assessment and the WFD Assessments are standalone in their own right and the cumulative impact assessment does not rely on the outcomes of these assessments and vice versa.
47. With professional judgement and consultation with the authors of each chapter, it was deemed that any projects within the 1km to 20km study area should focus on major projects, in order to provide a "proportionate" assessment that is not "longer than is necessary" (UK Planning Inspectorate 2024).

48. A long list of other major developments, including Strategic Infrastructure Developments (SIDs) and Strategic Housing Developments (SHDs), Large Scale Residential Developments, planning applications that have been screened in for EIA and/or AA assessments and major projects that are in pre-planning phases within a 20km radius of the Proposed Project, were screened in for the cumulative impact assessment. The rationale for this approach is that any development of these scales have a higher probability to result in cumulative impacts with the Proposed Project due to their scale and nature.

21.2.2.5.2 *Climate*

49. In relation to the climate cumulative impacts assessment, the Transport Infrastructure Ireland (TII) Guidance document PE-ENV01104 - Climate Guidance for National Roads, Light Rail, and Rural Cycleways (Offline & Greenways) was applied. The guidance states that *“the cumulative impact assessment in EIAR requires that the impact from a project is assessed cumulatively with other projects being brought forward in a defined geographical and temporal boundary. However, as the identified receptor for GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable.”* The guidance further states that: *“As GHG emissions are inherently cumulative, the cumulative impact for this assessment must be demonstrated via the project’s alignment to any sectoral carbon budgets and Ireland’s 2050 net zero target.”*
50. This proposed methodology is also consistent with the IEMA Guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance (2022) which states *“All global cumulative GHG sources are relevant to the effect on climate change, and this should be taken into account in defining the receptor (the atmospheric concentration of GHGs) as being of ‘high’ sensitivity to further emissions. Effects of GHG emissions from specific cumulative projects therefore in general should not be individually assessed, as there is no basis for selecting any particular (or more than one) cumulative project that has GHG emissions for assessment over any other. The contextualisation of GHG emissions, as discussed in Section 6.4, should incorporate by its nature the cumulative contributions of other GHG sources which make up that context. Where the contextualisation is geographically – or sector-bounded (e.g. involves contextualising emissions within a local authority scale carbon budget, or a sector level net zero carbon roadmap), then the consideration of cumulative contributions to that context will be within that boundary.”*
51. In accordance with the TII and IEMA guidance, the GHG impacts of the Proposed Project have been considered in Chapter 13 (Climate) in the context of the applicable sectoral carbon budgets and its alignment to Ireland’s trajectory of net zero. The assessment in Chapter 13 (Climate) demonstrates that the Proposed Project aligns with the sectoral carbon budgets. As such, climate has not been considered further within the cumulative assessment reported in this chapter.

21.2.2.5.3 *Traffic & Transport*

52. The traffic & transport assessment considered a number of other projects within Chapter 7 (Traffic & Transport). The list of other projects included within this assessment is described within Section 7.2.6.3.1 of Chapter 7 and presented in Appendix A7.1 (Traffic and Transportation Assessment) of the EIAR.

21.3 Assessment of Cumulative Environmental Effects from Other Projects

53. In total, 206 other projects were compiled at Stage 1 for consideration. During Stage 2, 42 other projects were screened out on the basis either that they lacked temporal overlap, or if the scale and nature of the developments did not have the potential for a Significant cumulative effect with the Proposed Project. During Stage 3 & 4, the remaining 164 projects were shortlisted for review and assessment from which the discipline chapter identified potential for cumulative effects from the other projects. The other projects which progressed to Stage 3 & 4 are listed in Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.1 Noise & Vibration

54. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative effects relevant to noise & vibration. Of those 164 other projects, 32 projects were screened in for the cumulative impact assessment for noise & vibration as they fall within the study area for the noise & vibration assessment. A total of 132 other projects were screened out for potential cumulative effects during the construction and operational Phases, due to their scale, nature and/or distance from the Proposed Project.
55. The study area for noise & vibration is outlined in Section 6.2.2 of Chapter 6 (Noise & Vibration) of the EIAR. The study area is defined by the area where there is potential for noise and vibration effects at Noise Sensitive Locations (NSLs) in proximity to the Proposed Project during the Construction Phase and Operational Phase. NSLs include areas where people spend substantial periods of time and where concentration, sleep and amenity are important considerations, for example residential dwellings, schools and other educational establishments, hospitals and nursing homes, hotels and other short-term accommodation buildings, buildings of religious sensitivity, recreational and noise-sensitive amenity areas, and offices.
56. The 32 projects identified as having potential cumulative effects (effects are Not Significant) are listed in Table A21.2.1 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.1.1 Construction Phase Effects Pre-Mitigation

57. Ten of the 32 other projects listed in Table A21.2.1 of Appendix A21.2 (Stage 4 Assessments) are within 20m of the Proposed Project. There would be a potential increase in noise levels of +3dB should construction of the Proposed Project and the other projects overlap. Due to the linear nature of pipeline works associated with the Proposed Project, construction noise impacts will occur over temporary periods at any one location and hence any cumulative effect before mitigation would be negative, Not Significant to Moderate and temporary (effect is Not Significant).
58. Seventeen of the 32 other projects listed in Table A21.2.1 of Appendix A21.2 (Stage 4 Assessments) have potential for cumulative effects during the construction phase before mitigation. There would be a potential increase in noise levels of +3dB if the other project is constructed within 20 to 50m of the Proposed Project and should the construction phases overlap. Pre-mitigation, the cumulative effect would be negative, Not Significant to Moderate and temporary (effect is Not Significant).
59. Five of the 32 other projects listed in Table A21.2.1 of Appendix A21.2 (Stage 4 Assessments) would have a potential cumulative effect of negative, Not Significant and temporary during the construction phase before mitigation. Both projects in construction concurrently would not lead to an increase in the construction noise levels detailed in Chapter 6 (Noise and Vibration) because the other projects are located further than 250m from the Proposed Project and construction associated with the Proposed Project is not predicted to cause a Significant effect at distances beyond 250m during daytime hours.

21.3.1.2 Operational Phase Effects Pre-Mitigation

60. There are no operational noise sources associated with the pipeline for the Proposed Project. The various infrastructure sites of the Proposed Project are designed to not generate any Significant effects to the surrounding environment. Similarly, other projects external to the Proposed Project would comply with appropriate noise guidelines, policy and legislation as set out in Section 6.2.3 of Chapter 6 (Noise and Vibration). Therefore, the operational phase would have a potential cumulative effect of neutral and long term (effect is Not Significant).

21.3.1.3 Proposed Mitigation

61. Mitigation measures already included in this EIAR, outlined in Section 6.5 of Chapter 6 (Noise and Vibration) and the Construction Environmental Management Plan (CEMP), are considered appropriate and sufficient to avoid, reduce or mitigate cumulative effects.

21.3.1.4 Residual Effects

62. No Significant residual cumulative effects are anticipated for noise & vibration during the construction or operational Phases following mitigation.

21.3.2 Traffic and Transport

63. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative impacts relevant to traffic and transport. Of those 164 projects, 113 projects were screened in for the cumulative impact assessment for traffic and transport as they fall within the study area for the traffic and transportation assessment. A total of 51 other projects were screened out for potential cumulative effects during the construction and operational phase because they have already been considered within Chapter 7 (Traffic & Transport). The list of other projects included within this assessment is described within Section 7.2.6.3.1 of Chapter 7 and presented in Appendix A7.1 (Traffic and Transportation Assessment) of the EIAR.

64. The study area for traffic and transport is outlined in Section 7.2.1 of Chapter 7 (Traffic & Transport) of the EIAR. The study area was determined according to agreed haul roads to be used by construction vehicles travelling to and from construction site. This area was considered appropriate as this is the largest area where impact is envisaged. The impact on the study area would be during the Construction Phase. The Operational Phase study area includes the six infrastructure sites the RWI&PS, WTP, BPT, BPS, FCV and TPR. This area was deemed appropriate as these sites will be the permanent infrastructure where operational staff are based.

65. The 113 projects identified as having potential cumulative effects (effects are Not Significant) in relation to traffic and transport are listed in Table A21.2.2 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.2.1 Construction Phase Effects Pre-Mitigation

66. Seventeen of the 113 other projects listed in Table A21.2.2 of Appendix A21.2 (Stage 4 Assessments) would have potential for cumulative effects (effects are Not Significant) during the construction phase as the other project is located on the same haul road as the Proposed Project (Table 21.4). As the construction timeline for these 17 other projects is currently unavailable, there is potential for overlap with the Construction Phase of the Proposed Project.

Table 21.4: Other Projects Identified as Having Potential Cumulative Effects (Effects are Not Significant) for Traffic and Transport During the Construction Phase Before Mitigation

Authority	Application Reference	Description	Haul Road
An Coimisiún Pleanála	319500	Cairn Homes Properties Limited Large scale residential development: Construction of 119 houses, 12 apartments and all associated site works.(newcastlesouthlrd2b.com). Within the townland of Newcastle South, Newcastle and along Athgoe Road & Hazelhatch Road (R405) to Ground Investigations Ireland premises, Newcastle, Co. Dublin.	R405

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Authority	Application Reference	Description	Haul Road
An Coimisiún Pleanála	321772	Lens Media Ltd Construction of media park and all associated siteworks. Site located in the townlands of Coolsudden, Brownstown and Milltown, West of Grange Castle Business Park, Newcastle, Co. Dublin.	R120
Kildare County Council	24116	Ardstone Homes Ltd Development will consist of 366 no. new residential developments, a childcare facility, a new Link Road and all associated site works as per reference ABP-304632-19. Lands at Capdoo, Clane, Co. Kildare.	R403
Offaly County Council	2560023	Bord na Móna Energy Ltd Recreational shared cycle and walkway located on Bord Na Móna lands. This will include the repurposing of 18,958m of existing former rail bed and 827m along pre-existing machine access routes. The proposed shared cycle and walkway will connect into the existing Grand Canal Way within the townlands of Coole and Knockballyboy; the Public Amenity Facilities at Mountlucas Wind Farm within the townlands of Clonarrow or Riverlyons and Drumcaw or Mountlucas; and the Clonreen Wind Farm Amenity Track within the townland of Clongarret. Bord Na Móna lands within the townlands of Knockballyboy, Clonad, Rathfeston, Gorteenkeel, Island, Clonarrow or Riverlyons, Drumcaw or Mountlucas, Esker Beg Killeen Ballyhugh, Mullalough or Cavemount, Coole, Toberdaly, Newtown, Ballycon, Esker More, Colgagh, Co. Offaly.	R402
Offaly County Council	2560115	Bord Na Móna The development of a recreational shared cycle and walkway located on Bord Na Móna lands. This Planning Application is accompanied by a Natura Impact Statement (NIS) Bord Na Móna lands within the townlands of, Knockballyboy, Clonad, Rathfeston, Gorteenkeel, Island, Clonarrow or Riverlyons, Drumcaw or Mountlucas, Esker Beg, Killeen, Ballyhugh, Mullalough or Cavemount, Coole, Toberdaly, Newtown, Ballycon, Esker More, Colgagh, and Clongarret in County Offaly.	R402
Offaly County Council	2560189	Clonarrow Windfarm Limited A 10-year planning permission for the erection of 4 wind turbines and 35 year operational life from the date of commissioning of the entire wind farm is being sought. The planning application will be accompanied by an Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS). Clonarrow or Riverlyons, and Killoneen, Co. Offaly.	R402
Offaly County Council	1925	Derryarkin Sand AND Gravel DAC An 87.6 hectare extension to the south-west, south and south-east of its existing sand and gravel pit; upgrading of the access road; new wheelwash facility; provision of mobile site office, mobile staff welfare unit and refuelling pavement slab; restoration of the proposed extension lands to naturally regenerated wildlife habitat, water ponds and potential long-term amenity use. Derrygreenagh, Knockdrin, Garr and Carrick Townlands, Rhode, Co Offaly	R400
Offaly County Council	19478	Kilsaran Concrete (Trading As Kilsaran Build) Associated closed system silt storage lagoons and related ancillary buildings and facilities including the readymix concrete batching plant, concrete block batching plant and block yard, asphalt plant, site office, prefabricated shipping office, wheelwash, weighbridge, electricity substation, single building, two bunded and covered fuel tanks, a concrete reclaimers and a septic tank with Puraflo liquid effluent treatment system and the existing site entrance onto the N52 road; extension to the north and east of the existing sand and gravel pit over an area of 31.3 hectares. For a period of 18 years plus two years to complete restoration works (total duration of 20 years). Bunaterin, Claragh & Heath Townlands, Screggan, Tullamore, Co Offaly.	N52
Offaly County Council	20237	Newleaf Energy LTD Development of a combined heat and power generating biomass gasification plant with integrated carbon capture and utilisation technology to provide renewable energy and electrical grid support services on a 2.45 hectare site. Coolcor, Rhode, Co Offaly.	R400

Authority	Application Reference	Description	Haul Road
Offaly County Council	21488	OBM Solar Limited A 10 year permission for the construction of an extension to the permitted solar PV and battery storage development permitted under planning permission reference: 20/494. The extension will comprise additional solar panels on ground-mounted frames, six single-storey electrical inverter/ transformer units. Greenhills, Rhode, Co. Offaly.	R400
Offaly County Council	20494	OBM Solar LTD A 10-year permission for the construction of a solar pv development on a c.132 ha site consisting of solar panels on ground-mounted frames, 27 no. Single-storey electrical inverter/ transformer units, an enclosed battery energy storage system compound on a c.0.385 ha located within the solar pv development site consisting of 18 no. Battery storage units and all associated ancillary development works. Srah, Greenhills And Wood, Rhode, Co. Offaly.	R400
Offaly County Council	218	Offaly Solar Energy As Limited A 10 year planning permission for the construction of, and a 40 year operation and subsequent decommissioning of, a development consisting of a 52.75 hectare solar farm and battery energy storage system and 9.32 kilometre underground electricity grid connection (0.95 hectares). Townlands Of Derries, Lackan, Kilmurry, Derrygrogan Little, Derrygrogan Big, Wood Of O, Corndarragh, Derrynagall Or Ballydaly, Ardan And Puttaghan, Co. Offaly.	L1025
Offaly County Council	20238	Rhode Energy Storage LTD An energy storage facility on a 2.7-hectare site. The development will comprise: (i) an open area battery energy storage system (BESS) compound, 16 no. Medium voltage power station (MVPS) enclosures, (ii) synchronous condenser compound, controls building, associated banded transformers and electrical plant, (iii) electrical substation containing customer building, Eirgrid building, and electrical plant and banded transformer which will electrically connect the development to the existing derryion 110kv substation located on lands adjoining the site to the south, (iv) control building and (v) all ancillary development. Coolcor And Clonin, Rhode, Co. Offaly.	R400
Offaly County Council	20476	Summit Solar LTD A 10 year permission for development which consists of the construction of a solar pv development comprising of ca. 105,000 no. Photovoltaic panels laid out in arrays, the construction of 38kv substation, a transformer unit and associated bund, along with ancillary development. Rathmount, Mullanafawnia, And Russellspenn, Co. Offaly.	L3003
Offaly County Council	2560258	The Committee of Daingean Naomh Mhuire CLG the construction of (1) a running track (2) carparking facilities (3) associated lighting (4) vehicular entrance from public road (5) temporary storage cabin and (6) any associated site works. Gorteenkeel, Geashill, Co. Offaly.	Unknown Local Road
Offaly County Council	2460250	William Grant And Sons Irish Manufacturing Ltd. Solar PV development with an installed capacity of up to 2.6 MWdc to provide electrical power to the existing distillery comprising approximately 4,100 no. photovoltaic panels on ground mounted frames within a site area of 3.90 hectares and associated ancillary development. Tullamore Distillery Campus Ballard & Clonminch, Tullamore, Co. Offaly.	N52
Tipperary County Council	2560666	Phoenix Tower Ireland III Limited To retain the existing 24m telecommunications support structure carrying antenna and dishes, communications cabinets and associated site works within a palisade fenced compound previously granted under planning permission File Ref No. 11510391 AND, 2) Permission to install additional antenna, dish equipment to the support structure including ground equipment cabinets and associated site works. Knockanacree, Cloughjordan, Co. Tipperary.	L1064

67. Ninety six of the 113 other projects would not have potential for construction phase cumulative effects before mitigation. Given the nature and scale of the 96 other projects, and their distance from the Proposed Project, it is expected that there will be limited vehicle movements associated with the other projects.

21.3.2.2 Operational Phase Effects Pre-Mitigation

68. No cumulative effects on traffic and transport are anticipated for the operational phase before mitigation. Traffic volumes during the Operational Phase of the Proposed Project and other projects are anticipated to be low and the existing road network and junctions have sufficient capacity to accommodate these vehicle movements without resulting in congestion or adverse effects on road safety.

21.3.2.3 Proposed Mitigation

69. Mitigation outlined in the EIAR is sufficient to avoid, reduce or mitigate potential construction phase cumulative effects. Specifically, implementation of the Traffic Management Plan, which stipulates states that the appointed Contractor(s) will liaise with the management of other construction projects and the local authority to co-ordinate deliveries.

21.3.2.4 Residual Effects

70. For 17 other projects, in the unlikely event that the construction of the other project coincides with the construction period of the Proposed Project, any potential residual cumulative traffic effects are expected to be minimal (effect is Not Significant). This is because the traffic model incorporates a high growth rate, which would absorb the limited additional trips generated by the other project, and the temporary and short-term nature of the construction activities.
71. For the remaining 96 projects, given their nature, scale and proximity to the study area of the Proposed Project, it is expected that there will be limited vehicle movements associated with them. Consequently, there is no reasonable potential for Significant residual cumulative effects on the study area during the construction phase after mitigation.
72. For all 113 other projects, there would be no potential for Significant residual cumulative effects during the operational phase after mitigation.

21.3.3 Biodiversity

73. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative effects relevant to biodiversity. Of those 164 other projects, 153 other projects were screened in for the cumulative impact assessment for biodiversity as they fall within the study area for the biodiversity assessment. A total of 11 projects were screened out for potential cumulative effects during the construction and operational phases, due to their scale, nature and/or distance from the Proposed Project.
74. The study areas for each assessment theme are outlined in Chapter 8 (Biodiversity). The study areas for each theme differ due to the nature of potential effects under consideration (i.e. designated areas of nature conservation, terrestrial ecology, aquatic ecology, and ornithology (breeding and wintering birds)).
75. The 153 projects identified as having the potential for cumulative effects in relation to biodiversity are listed in Table A21.2.3 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.3.1 Construction Phase Effects Pre-Mitigation

76. One hundred and nineteen of the 153 other projects that were screened in for the cumulative impact assessment for biodiversity have potential for cumulative effects during the construction phase before mitigation, arising from:
- Effects on downstream habitats and species arising from an accidental pollution event
 - Effects on habitats and species as a result of direct habitat loss/fragmentation

- Effects due to the disturbance/displacement of fauna in the locality
- Effects due to the introduction/spread of invasive non-native species.

77. The 119 of the 153 other projects with potential cumulative effects are listed in Table A21.2.3 of Appendix A21.2 (Stage 4 Assessments).

78. Thirty four of the 153 other projects have no potential for Significant cumulative effects during the construction phase due to the nature and/or small scale of the other projects or the absence of pathways between the Proposed Project and other project.

21.3.3.2 Operational Phase Effects Pre-Mitigation

79. Sixty-one of 153 other projects listed in Table A21.2.3 of Appendix A21.2 (Stage 4 Assessments) have the potential for cumulative effects during the Operational Phase before mitigation, due to disturbance/displacement of fauna in the locality, permanent habitat loss, or the introduction or spread of invasive species.

80. The remaining 92 other projects have no potential for Significant cumulative effects during the Operational Phase, as no significant operational phase effects have been identified for the other projects and the Proposed Project.

21.3.3.3 Proposed Mitigation

81. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate impacts. These include:

- Mitigation for water quality: Surface Water Management Plan (SWMP), method statements for protecting waters, all works in accordance with Inland Fisheries Ireland (IFI) as set out in Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI 2016), erection of silt fencing, buffer zones on river channels during construction, refuelling on impermeable and bunded areas, trenchless crossings, use of clear span bridges during construction (EIAR Chapter 8 Biodiversity Section 8.8.3 and 8.8.5)
- Mitigation for habitats and rare/protected flora: retention of quality habitat, reinstatement planting, minimisation of tree cutting (EIAR Chapter 8 Biodiversity Section 8.8.2 and 8.8.5)
- Mitigation for the spread of invasive non-native species through biosecurity measures, demarcating prohibited working areas/buffer zones (EIAR Chapter 8 Section 8.8.2.1.3, 8.8.3.2 and 8.8.5)
- Mitigation for otter: buffer zones around holts to avoid impact/disturbance during construction, avoiding fragmentation of otter habitat, demarcating prohibited working areas/buffer zones (EIAR Chapter 8 Section 8.8.2.4 and 8.8.5)
- Mitigation for bats: measures in accordance with Bat Mitigation Guidelines for Ireland (Marnell *et al.* 2022) avoidance of bat roosts, retention of mature trees, vegetation planting, erection of bat boxes, minimising lighting and noise disturbance (EIAR Chapter 8 Section 8.8.2.2 and 8.8.5)
- Mitigation for badger: buffer zones around setts to avoid impact/disturbance during construction, artificial setts, restriction of nighttime working, demarcating prohibited working areas/buffer zones (EIAR Chapter 8 Section 8.8.2.3 and 8.8.5)
- Mitigation for amphibians/reptiles: Preconstruction surveys to avoid disturbance/risk of mortality, demarcating prohibited working areas/buffer zones (EIAR Chapter 8 Section 8.8.2.7 and 8.8.5)
- Mitigation for bird species: Avoidance of vegetation clearance (1 March to 31 August), phasing of works, avoidance of concentrated 'important bird areas' of breeding or wintering key ecological receptors (EIAR Chapter 8 Section 8.8.4 and 8.8.5)

- Appointment of suitably qualified Ecological Clerk of Works to oversee and implement all mitigation measures.

21.3.3.4 Residual Effects

82. Six other projects (South Dublin County Council, two Eirgrid projects, Moanvane Wind Farm Limited, Electricity Transmission Network: Capital Project 966 and National Transport Authority: Cycle Connects) have been identified as having Significant residual cumulative biodiversity effects in cumulation with the Proposed Project during the Construction Phase (Table 21.5). These are as follows:

- One other project, a residential housing development by South Dublin County Council (Table 21.5), has been identified as having Significant residual effects on habitats, bats and badgers. Regarding habitats, this other project and the Proposed Project are both predicted to have Significant residual effects arising from the loss of grassland habitats. However, given that this other project and the Proposed Project are 3.5km distant from each other, there is no potential for Significant residual cumulative effects on habitats. With regards to bats and badger, as this other project and the Proposed Project are 3.5km distant from each other, it is likely that foraging zones/home ranges overlap for both projects. It is therefore considered that there is potential for cumulative residual effects on bats and badger at the local geographic scale. Residual effects on bats and badger associated with loss and/or fragmentation of commuting/foraging/breeding habitats as a result of the construction of Proposed Project would be short-term.
- Two other projects (both Eirgrid) (Table 21.5) have been identified as having Significant residual effects on grassland and scrub habitat at the local geographic scale. As these two other projects and the Proposed Project are 250m distant from each other, if the construction periods were to overlap, there would likely be Significant residual cumulative effects on grassland and scrub habitat at the local geographic scale. Significant residual cumulative effects on grassland and scrub habitat associated with habitat loss as a result of the construction of Proposed Project would be short-term.
- One other project (Moanvane Wind Farm Limited) (Table 21.5) has been identified as having Significant residual effects on habitats and bats at the local geographic scale. As this other project and the Proposed Project are <1km distant from each other, if the construction periods were to overlap, there would likely be Significant residual cumulative effects on habitats and bats at the local geographic scale. Significant residual cumulative effects on habitats (habitat loss) and bats associated with loss and/or fragmentation of commuting/foraging/breeding habitats as a result of the construction of Proposed Project would be short-term.
- One other project (Electricity Transmission Network: Capital Project 966) has been identified as having Significant residual effects on grassland, hedgerow and treeline habitats. As this other project and the Proposed Project overlap with each other geographically, if the construction periods were to overlap, there would likely be Significant residual cumulative effects on habitats at the local to county geographic scale. Significant residual cumulative effects on grassland, hedgerow and treeline habitat associated with habitat loss as a result of the construction of Proposed Project would be short-term.
- One other project (National Transport Authority) (Table 21.5) has been identified as having the potential for Significant residual effects at the local geographic scale. As there is limited information available for this other project and it overlaps geographically with the Proposed Project, a precautionary approach has been taken which assumes that if the construction phases of the two projects were to overlap, and the other project concludes with Significant residual effects on badger, bats or habitats, there would be Significant residual cumulative effects on badger, bats or habitats at the local geographic scale. Significant residual cumulative effects on habitats (habitat loss), and bats and badger associated with loss and/or fragmentation of commuting/foraging/breeding habitats as a result of the construction of Proposed Project would be short-term.

83. The identified Significant residual cumulative biodiversity effects associated with the six other projects in cumulation with the Proposed Project during the Construction Phase take account of all relevant biodiversity-related mitigation measures included in this EIAR, as included in Chapter 8 (Biodiversity) and summarised in Section 21.3.3.3 of this chapter. Habitats will primarily be reinstated like-for-like post construction, along with landscape planting measures at the infrastructure sites to mitigate for the permanent loss of habitats. The Proposed Project will also provide bat boxes and artificial badger setts. Therefore, no additional mitigation measures are proposed.

Table 21.5: Other Projects Identified as Having Likely Significant Residual Cumulative Effects for Biodiversity

Authority	Application Reference	Description
An Coimisiún Pleanála	316372	Electricity Transmission Network: Capital Project 966 Proposed electricity infrastructure project to strengthen the electricity network between the Dunstown substation in Kildare and the Woodland station in Meath. Capital Project 966 is a proposed development that will help transfer electricity to the east of the country and distribute it within the network in Meath, Kildare and Dublin. The project will help to meet growing demand for electricity in the east of the country (Meath, Kildare, Dublin) and integrate generation in the West and South West.
An Coimisiún Pleanála	JH06S.322638	South Dublin County Council The development of 1,252no. residential units in a mix of houses, duplexes, triplexes and apartments; 2no. childcare facilities; 1no. community building; retail uses; refurbishment works to Grange House for future reuse. Three sites referred to as Site 3, Site 4, and Site 5, located predominantly within the Kishoge Development Area of Clonburris Strategic Development Zone (SDZ), in the townlands of Kishoge, Esker South, Grange, and Balgaddy, Clonburris, County Dublin.
Kildare County Council	2560302	Eirgrid Works associated with the proposed uprate of the existing 110 kV Overhead Line (OHL) between the existing Cushaling 110 kV substation in the townland of Ballykilleen, Co. Offaly and the existing Portlaoise 110 kV substation in the townlands of Clonminam and Kylekiproe, Co. Laois. The Proposed Development works across the functional area of Co. Kildare will comprise replacement of the existing overhead line circuit conductor with a new higher capacity conductor including installation of a new fibre communication connection, replacement of 2 no. steel towers, replacement of steel members at 1 no. tower, replacement of wooden poles only at 8 no. locations, replacement of wooden poles and crossarm at 3 no. locations, replacement of crossarm at 4 no. locations, replacement of hardware and fittings. Coolelan Kiltaghan North Kiltaghan South Clonmoyle West Ummeras More Mountrice Mullaghroe Upper Mullaghroe Lower Coolatogher Coolsickin or Quinsborough and Coolnafearagh, Co. Kildare.
Offaly County Council	2560087	Eirgrid Uprate of the existing 110 kV Overhead Line (OHL) between the existing Cushaling 110 kV substation in the townland of Ballykilleen, Co. Offaly and the existing Portlaoise 110 kV substation in the townlands of Clonminam and Kylekiproe, Co. Laois. The Proposed Development works across the functional area of Co.Offaly will comprise replacement of the existing overhead line circuit conductor, replacement of the existing earthwire with new earthwire between structures 1 and 8; replacement of steel members at 3 no. towers, full tower painting required at 3 no. locations, replacement of wooden poles only at 7 no. locations, replacement of wooden poles and crossarm at 2 no. locations, replacement of crossarm only at 3 no. locations. Ballykilleen (Edenderry Rural Electoral Division) Kilcumber Cloncant Ballydermot Clonmel Clonbrown Clonroosk Little Clonroosk Big Coolygagan Clonbrock Upper Kilcloncorky Kilnantoge Lower Kilnantoge Upper and Shean, Co. Offaly.
Offaly County Council	20218	Moanvane Wind Farm Limited Laying an underground electricity cable of up to 110kV and associated ducting and ancillary development, primarily within the public road in the townlands of Rathfeston, Ballykean, Ballyduff, Raheenbeg, Kilcooney, Ballintogher, Gorteenkeel and Balltnakill, Co. Offaly.
N/A	N/A	National Transport Authority Cycle Connects. Improving the cycle network within towns across Ireland.

84. Of the 153 other projects identified with the potential for cumulative effects in relation to biodiversity, the remaining 147 are not anticipated to have Significant residual cumulative effects for biodiversity during the Construction Phase of the Proposed Project.
85. Accounting for mitigation contained within this EIAR, all 153 other projects that were screened in for the cumulative effects assessment for biodiversity are not likely to have Significant residual cumulative effects during the Operational Phase of the Proposed Project.

21.3.4 Water

86. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative impacts relevant to water. Of those 164 projects, 156 projects were screened in for the cumulative impact assessment for water as they fall within the study area for the water assessment. A total of 8 other projects were screened out for potential cumulative effects during the Construction and Operational Phases, due to their scale, nature and/or distance from the Proposed Project.
87. The study area for water is outlined in Section 9.2.1 of Chapter 9 (Water) of the EIAR. The cumulative impact assessment for water has assessed any waterbody identified as encountering a Significant effect as a result of the Proposed Project and which is hydrologically connected to a waterbody that could potentially be impacted by another project. The assessment was carried out with consideration of distance, scope and scale of the other project in combination with the Proposed Project.
88. Cumulative effects with other projects are only likely to occur during the construction phase, where one or more other projects are likely to affect a watercourse that may also be affected by the construction of the Proposed Project.
89. The 156 other projects identified as having potential cumulative effects in relation to water are listed in Table A21.2.4 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1. Out of the 156 other projects, 21 were identified as having potential for Significant cumulative effects before mitigation (Table 21.6). Out of 156 other projects, 135 are deemed Not Significant due to the distance of the other project from the Proposed Project or lack of hydrological connection.

21.3.4.1 Construction Phase Effects Pre-Mitigation

90. Uisce Éireann's National Leakage Reduction Programme would have the potential for cumulative effects during the construction phase before mitigation, as both that and the Proposed Project involve the construction and repair of treated water infrastructure. Both the National Leakage Reduction Programme and the Proposed Project will be managed by Uisce Éireann. The sensitivity varies based on location ranging from negligible to very high. The magnitude varies depending on location ranging from negligible to high. The significance of effect varies depending on location ranging from Imperceptible (effect is Not Significant) to Very Significant (effect is Significant). As Uisce Éireann is managing both projects, mitigation measures will be put in place to avoid any Significant cumulative effects.
91. Ten of the other projects listed in Table A21.2.4 of Appendix A21.2 (Stage 4 Assessments) are likely to have negative Significant cumulative effects during the construction phase before mitigation, arising from the potential release of sediment and pollutants into nearby waterbodies. These are listed in Table 21.6.
92. Ten of the other projects are likely to have Moderate (effect is Significant) cumulative effects during the construction phase before mitigation, arising from the potential release of sediment and pollutants into nearby waterbodies. The magnitude of these potential effects is lessened due to the nature of the other project, which results in a Moderate effect. These are listed in Table 21.6.

Table 21.6: Projects Identified as Having Potential Significant Cumulative Effects for Water During the Construction Phase Before Mitigation

Authority	Application Reference	Description	Significance of Effect
N/A	N/A	Uisce Éireann National Leakage Reduction Programme. Ireland.	Ranges from Very Significant to Imperceptible (effect is Not Significant)
Clare County Council	22591	Reeve Wave Ltd 10-year planning permission for a solar array. at Ballyglass, Coolderry, Dromintobin North, Reanabrone, and Oakfield (townlands) Ardnacrusha, Co Clare.	Significant
Kildare County Council	21455	Carl Farrar A bridge over the River Liffey to facilitate farming. Friarstown, Straffan, Co. Kildare.	Significant
Offaly County Council	16177	Anthony Cocoman Infilling of lands with material consisting of clean, uncontaminated soil and stones and for the crushing of concrete on a sporadic basis. Shean, Edenderry, Co. Offaly.	Significant
Offaly County Council	20331	Bord na Móna Energy Ltd Croghan Biomass Facility. For the storage and seasoning of biomass logs followed by chipping of the seasoned logs. Esker Beg and Drumcaw, or Mountlucas, Co.Offaly.	Significant
Offaly County Council	2560115	Bord Na Móna The development of a recreational shared cycle and walkway located on Bord Na Móna lands. This Planning Application is accompanied by a Natura Impact Statement (NIS). Bord Na Móna lands within the townlands of, Knockballyboy, Clonad, Rathfeston, Gorteenkeel, Island, Clonarrow or Riverlyons, Drumcaw or Mountlucas, Esker Beg, Killeen, Ballyhugh, Mullalough or Cavemount, Coole, Toberdaly, Newtown, Ballycon, Esker More, Colgagh, and Clongarret in County Offaly.	Significant
Offaly County Council	22494	Cloncant Renewable Energy Limited 970m of new internal access roads for the permitted Cushaling Wind Farm and upgrade of approximately 560m of existing access road. Ballykilleen Shean, Kilcumber and Ballinowlart North, Co. Offaly.	Significant
Offaly County Council	21291	Edenderry Power Limited Development at Edenderry Power Plant. Ballykilleen, Edenderry, Co.Offaly.	Significant
Offaly County Council	21598	Kilcush Solar Farm Ltd A period of 10 years to construct a solar PV development with a total site area of 117.47 hectares. Ballinowlart North, Ballykilleen, Kilcumber, Cloncant and Cushaling, Edenderry, Co. Offaly.	Significant
South Dublin County Council	SD188/0011	Greenways Ireland Grand Canal Greenway – 4.6km of shared walking and cycling Greenway along the existing northern Grand Canal towpath. Hazelhatch in Co. Kildare to 12th Lock, Co. Dublin.	Significant
N/A	N/A	Limerick to Scarriff Greenway The proposed 40Km Greenway envisages a greenway that would begin in Limerick City and travel as far as Scarriff Harbour, passing close to the Errina Canal and River Blackwater, with connections to nearby villages and towns such as Cloonlara, O'Briensbridge, Killaloe, Ogonolloe.	Significant

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Authority	Application Reference	Description	Significance of Effect
An Coimisiún Pleanála	309686	Cloncant Renewable Energy Ltd Application for a ten-year permission for a 110kV Air Insulated Switchgear (AIS) Loop Substation with 400m long overhead line grid connection and all associated site works. In the townlands of Ballykilleen, Cloncreen and Ballinowlart North, Co. Offaly.	Moderate
An Coimisiún Pleanála	316372	EirGrid 'Kildare-Meath Grid Upgrade' - Proposed development of a 400 kV underground cable between Dunstown 400 kV substation and Woodland 400 kV substation. Townlands of Dunstown, Co. Kildare and Woodland, Co. Meath.	Moderate
An Coimisiún Pleanála	320727	FuturEnergy Knockshanvo Designated Activity Company Proposed development of 110kV underground electrical cabling from the proposed Knockshanvo Wind Farm development to the existing Ardnacrusha 110kV electrical substation and ancillary development. Located in the townlands of Lakyle, Knockdonagh, Castlebank, Cloghera, Roo West, Drumsillagh or Sallybank (Merritt)(Parker), Glenon South, Trough and Ballykeelaun, County Clare.	Moderate
Clare County Council	2460612	Ballina Killaloe Sports & Community Facilities Development Co. (Clariford) Ltd. To develop a swimming platform, and associated site works. Moys, Killaloe, Co. Clare.	Moderate
Clare County Council	2460416	Castlebank Green Energy Limited 10 year permission for a Solar Energy development with a total site area of 36.70 hectares. The Solar Farm would be operational for 40 years. The proposed grid route will connect the substation at the application site to the existing grid infrastructure at Ardnacrusha Power Station via a 38kV underground cable which is 1.2km in length (320m of which is on the local road L3056). Within the townlands of Castlebank Parteen Ballykeelaun and Drummin, Ardnacrusha, Co. Clare.	Moderate
Kildare County Council	24116	Ardstone Homes Ltd Development will consist of 366 no. new residential development, a childcare facility, a new Link Road and all associated site works as per reference ABP-304632-19. Lands at Capdoo, Clane, Co. Kildare.	Moderate
Kildare County Council	2560302	Eirgrid Plc. Works associated with the proposed uprate of the existing 110 kV Overhead Line (OHL) between the existing Cushaling 110 kV substation in the townland of Ballykilleen, Co. Offaly and the existing Portlaoise 110 kV substation in the townlands of Clonminam and Kylekiproe, Co. Laois. The Proposed Development works across the functional area of Co. Kildare will comprise replacement of the existing overhead line circuit conductor with a new higher capacity conductor including installation of a new fibre communication connection, replacement of 2 no. steel towers, replacement of steel members at 1 no. tower, replacement of wooden poles only at 8 no. locations, replacement of wooden poles and crossarm at 3 no. locations, replacement of crossarm at 4 no. locations, replacement of hardware and fittings. Coolelan Kiltaghan North Kiltaghan South Clonmoyle West Ummeras More Mountrice Mullaghroe Upper Mullaghroe Lower Coolatogher Coolsickin or Quinsborough and Coolnafearagh., Co. Kildare.	Moderate
Offaly County Council	2560258	The Committee of Daingean Naomh Mhuire CLG the construction of (1) a running track (2) carparking facilities (3) associated lighting (4) vehicular entrance from public road (5) temporary storage cabin and (6) any associated site works. Gorteenkeel, Geashill, Co. Offaly.	Moderate

Authority	Application Reference	Description	Significance of Effect
Offaly County Council	2198	Renewable Energy Systems Limited A period of 5 years to construct and complete a solar pv energy development with a total site area of 60.53 hectares, to include a single-storey electrical substation building, inverter substations, modules, solar pv ground mounted on support structures, a temporary construction compound, internal access tracks, security fencing, electrical cabling and ducting, CCTV and other ancillary infrastructure. Ballyteige Little, Ballyteige Big and Colehill, Tullamore, Co. Offaly.	Moderate
N/A	N/A	Uisce Éireann Upgrade the existing Nenagh Wastewater Treatment Plant from its current design Population Equivalent (PE) of 12,000 to a PE plant of 22,000. The existing Wastewater Treatment Plant, Bulfin Road, Nenagh in the townland of Nenagh North.	Moderate

93. Seven of the other projects would have potential for Slight (effect is Not Significant) cumulative effects during the construction phase before mitigation. In these instances, cumulative effects due to construction activities are possible, but have been deemed Slight as the water body considered in the assessment is too far away.
94. For the remaining 128 other projects, cumulative effects are not likely due to the distance from the Proposed Project or because the other project is not hydrologically connected to the Proposed Project. The Significance of effect has been deemed Not Significant for 21 other projects and Imperceptible (effect is Not Significant) for 107 other projects.

21.3.4.2 Operational Phase Effects Pre-Mitigation

95. Uisce Éireann's National Leakage Reduction Programme has the potential for positive cumulative effects during the operational phase as both that and the Proposed Project involve the construction and repair of treated water infrastructure. As both these projects will be managed by Uisce Éireann, there is potential for positive operational cumulative effects and efficiencies to be made when repairing or servicing water infrastructure. However, this will be location dependent. The sensitivity varies based on location ranging from negligible to very high. The magnitude varies depending on location ranging from negligible to high. The significance of effect varies depending on location ranging from Imperceptible (Not Significant) to Very Significant. No mitigation is required for positive Significant effects.
96. One other project (FuturEnergy Knockshanvo Designated Activity Company) has potential for negative, Moderate (effect is Significant) cumulative effects (Table 21.7) during the operational phase before mitigation. Due to the location and nature of the project it is unlikely to lead to cumulative effects from a water environment perspective. However, due to the scale of this project, there is potential for an increase in flood risk to occur due to the increase in impermeable areas, increasing runoff rates to nearby rivers affecting areas downstream. Flood risk will be managed in order to not increase flood risk (See Chapter 5 of The Planning System and Flood Risk Management Guidelines for Planning Authorities (DHLGH, 2009)).

Table 21.7: Projects Identified as Having Potential Significant Cumulative Effects for Water During the Operational Phase Before Mitigation

Authority	Application Reference	Description
An Coimisiún Pleanála	320705	FuturEnergy Knockshanvo Designated Activity Company Proposed development of 9 no. wind turbines, 110kV substation and ancillary development. Located in the townlands of Snatty, Hurdlestown, Oatfield, Drumsillagh, Sallybank, Gortacullin, Aharinaghbeg, Knockshanvo, Cloontra, Cloghoolia, Ballycullen and others, County Clare. And Located in the townland of Court, County Limerick.(https://knockshanvoplanning.ie/).

97. The remaining 155 other projects listed in Table A21.2.4 of Appendix A21.2 (Stage 4 Assessments) are unlikely to have any cumulative effects during the operational phase. The Significance of effect is Slight (effect is Not Significant) for two other projects during the operational phase before mitigation. The Significance of effect is Not Significant for 43 of the other projects due either to their being geographically removed from the Proposed Project, or the small scale of the other project. The Significance of effect is Imperceptible (effect is Not Significant) for 110 other projects due both to their being geographically removed from the Proposed Project, and their small scale.

21.3.4.3 Proposed Mitigation

98. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate potential cumulative effects. These include:

- Adherence to the CEMP and implementation of the Surface Water Management Plan throughout the Construction Phase
- The appointed Contractor will develop and implement a detailed Pollution Control Plan, Emergency Response Plan and Method Statements for working near waterbodies, drafted in agreement with IFI and other relevant authorities, and having regard to relevant pollution prevention guidelines
- Temporary settlement/attenuation lagoons will be strategically located, at low points along the Construction Working Width and the infrastructure sites
- Silt-laden runoff will be controlled and treated (e.g. use of silt fences and settlement lagoons, design of any required outfall structures in accordance with best practice guidelines, baffles to prevent disturbance to watercourses at discharge locations)
- Fuel/oil interceptors will be installed on drainage from impervious pavement at Construction Compounds and Key Infrastructure Sites
- Temporary stockpiles will be managed in accordance with best practice (e.g. locating them a minimum of 10m from watercourses, allowing the establishment of vegetation on exposed soil, providing bunds and/or cut-off ditches to contain stockpile runoff)
- Good site management practices will be implemented for storage of materials (e.g. storage away from waters, provision of spill kits, correct labelling of storage areas, adequate bunding)
- Good management of vehicle and plant use and maintenance will be implemented
- Working in or near watercourses will be tightly controlled and managed (e.g. seasonal/weather working restrictions, minimisation of area of disturbance, minimisation of operation of machinery in-stream, sediment mats or silt traps to be positioned immediately downstream of works)
- Any dewatering flows will be directed to the construction drainage system and to a settlement pond or other treatment system

- The use of concrete will be carefully controlled to avoid spillage. Where on-site batching is required, it will be carried out at least 10m from watercourses. Further management measures for the use of concrete are detailed in Section 6.4 of Appendix A5.1 Annex A Surface Water Management Plan (SWMP).
- Adequate provision of temporary site drainage will be made
- Continuous monitoring of water quality will be undertaken at outlets from attenuation areas along the pipeline and settlement lagoons and surface water attenuation ponds at Key Infrastructure Sites. This will include weekly monitoring of Total Suspended Solids, turbidity, pH, temperature, dissolved oxygen and hydrocarbons upstream and downstream of watercourses in close proximity to works or at crossing points, and daily visual inspections of surface drainage and sediment control measures
- Trenchless watercourse crossings will be undertaken at certain crossings
- All aspects of the works will be designed to be watertight to minimise the possibility of any leaks.

21.3.4.4 Residual Effects

99. No Significant residual cumulative effects are anticipated for water during the construction or operational phases following mitigation.

21.3.5 Soils, Geology and Hydrogeology

100. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative impacts relevant to soils, geology and hydrogeology. Of those 164 other projects, 12 were screened in for the cumulative impact assessment for soils, geology and hydrogeology. Due to their differing scale, nature and distance from the Proposed Project, 152 other projects have been screened out for cumulative effects during the Construction and Operational Phases.

101. The study area for soils, geology and hydrogeology is outlined in Section 10.2.2 of Chapter 10 (Soils, Geology and Hydrogeology) of the EIAR. In accordance with best practice guidance and professional judgement, a conservative study area of 500m was used around the infrastructure sites (RWI&PS, WTP, BPT, BPS, FCV and TPR). In accordance with best practice guidance and professional judgement, a study area of 50m was used for the pipeline. The study areas for each theme differ due to the nature of potential effects under consideration along the route of the Proposed Project (i.e., at the Infrastructure Sites, 38 kV Uprate Works, Zones of Contribution and Groundwater Dependent Habitats).

102. The 12 other projects identified as having potential cumulative effects (effect is Not Significant) are listed in Table A21.2.5 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.5.1 Construction Phase Effects Pre-Mitigation

103. Twelve of the other projects listed in Table A21.2.5 of Appendix A21.2 (Stage 4 Assessments) would have a potential cumulative Slight (effect is Not Significant) short-term, localised, direct effect during the construction phase before mitigation because there is limited/ no overlap temporally or in terms of project footprint.

21.3.5.2 Operational Phase Effects Pre-Mitigation

104. Nine of the 12 other projects listed in Table A21.2.5 of Appendix A21.2 (Stage 4 Assessments) are anticipated to have a potential cumulative Slight to Imperceptible (effect is Not Significant) long-term, localised, direct effect during the Operational Phase before mitigation because there is limited activity during this stage of the Proposed Project.

105. Three of the 12 other listed in Table A21.2.5 of Appendix A21.2 (Stage 4 Assessments) are anticipated to have a potential cumulative Imperceptible (effect is Not Significant), long-term, localised, direct effect during the operational phase before mitigation because there is limited activity during the Operational Phase.

21.3.5.3 Proposed Mitigation

106. Mitigation measures already described in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate cumulative impacts, and include:

- Adherence to CEMP and implementation of effective land and soils mitigation measures
- Adherence to the Construction Waste Management Plan which will be implemented to minimise waste and ensure the correct handling and disposal of construction waste streams in accordance with best practice guidelines
- Excavations will be limited to the required footprint
- Bunding or secondary containment will be used for the storage of chemicals including fuels and oils to reduce risk of leaks
- Deliveries and refuelling activities will be supervised; and designated specific impermeable refuelling areas isolated from surface water drains to prevent contamination from leaks or spills, will be used for that purpose
- All infrastructure works will be designed to be watertight to reduce risk of leaks
- Runoff will be controlled during the Construction Phase. Filtration trenches, attenuation ponds and other measures will be used to attenuate any additional runoff during construction of the infrastructure sites
- Dewatering will be undertaken in accordance with best practice guidelines, including correct choice of dewatering method and filter design, placement of settlement tanks or lagoons, monitoring of affected locations, and suitable groundwater control to minimise drawdown or pore water pressure reductions.

21.3.5.4 Residual Effects

107. No Significant residual cumulative effects are anticipated for soils, geology and hydrogeology during the Construction or Operational Phases following mitigation.

21.3.6 Agriculture

108. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative impacts relevant to agriculture. Of those 164 other projects, 10 were screened in for the cumulative impact assessment for agriculture. The remaining 154 projects were screened out for cumulative effects as they do not fall within the study area for agricultural assessment.

109. The study area for agriculture is outlined in Section 11.2.3 of Chapter 11 (Agriculture). The study area for agricultural assessment comprises all agricultural land parcels and farm enterprises directly affected by the Proposed Project within the Planning Application Boundary. This boundary includes both the 38 kV Uprate Works, which extend from Ardnacrusha to Birdhill, and the proposed pipeline and all associated permanent and temporary infrastructure sites, which extend in sequence from Parteen Basin, County Tipperary, through Counties Offaly and Kildare, to the termination point reservoir at Peamount, County Dublin.

110. The 10 other projects identified as having potential cumulative effects in relation to agriculture are listed in Table A21.2.6 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.6.1 Construction Phase Effects Pre-Mitigation

111. One of the 10 other projects (Reeve Wave Ltd) would have potential for negative, medium, Slight and short-term (effect is Not Significant) cumulative effects during the construction phase before mitigation. Construction of both the Proposed Project and the other project will change the land use in the short term, however, post construction, the Proposed Project land use will continue as before, while the lands associated to this other project could still be classified as agricultural.
112. Two of the other projects (Clonarrow Wind Farm Limited and Pheonix Tower Ireland III Limited) would have potential for Minor (effect is Not Significant) negative cumulative effects during the construction phase before mitigation. The combined footprint of the Proposed Project and other projects would remain limited in the context of the surrounding agricultural landscape.
113. Seven of the other projects would have potential for negligible and Not Significant cumulative effects during the construction phase before mitigation, due to:
- No direct land-take overlap or shared field parcels
 - Prime urban area expected to transition to non-agricultural development in the future
 - Short-term disturbance and a permanent loss of a very small area of land.

21.3.6.2 Operational Phase Effects Pre-Mitigation

114. There is no potential for cumulative effects in the Operational Phase as lands will be retained for agricultural use post construction.

21.3.6.3 Proposed Mitigation

115. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate cumulative impacts. These include the following:
- Active engagement with landowners will be undertaken during the Construction Phase to discuss specific requirements such as access arrangements and movement of stock
 - The loss of agricultural land as a result of the construction of the RWI&PS, WTP, BPS, FCV, BPT and TPR would be a permanent loss and will be addressed in the statutory compensation process. The temporary loss of land by means of the 50m Construction Working Width along the proposed pipeline route will be addressed by compensation to the landowner
 - Measures will be employed to reduce the impacts on farms and allow the continuous operation of affected holdings. For example, crossing points will be agreed and suitable access arrangements will be provided which will accommodate the landowner while at the same time facilitating the construction of the Proposed Project
 - In recognition of the need to work with landowners, specific mitigation measures most suitable to individual farm situations will be developed. This will involve the agronomist and land liaison officers engaging in continued dialogue with landowners to determine their management systems. Landowners will be provided with access to all sub-divided land during the Construction Phase. Temporary crossing points will be provided, and the location and number of these crossing points will be discussed and agreed with landowners
 - Measures to appropriately manage soil stripping, storage, backfilling and reinstatement
 - Existing land drainage will be reinstated, or new drainage pipes installed where appropriate
 - Access will be maintained to sub-divided land during the Construction Phase
 - Replacement or replanting of any hedgerows or green infrastructure removed as part of the Construction Phase.

21.3.6.4 Residual Effects

116. No Significant residual cumulative effects are anticipated for agriculture during the construction or operational phases following mitigation.

21.3.7 Air Quality

117. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to the cumulative impacts relevant to air quality. Of those 164 other projects, 31 were screened in for the cumulative impact assessment for air quality. The remaining 133 other projects were screened out as they do not fall within the study area for air quality assessment.

118. The study area for air quality is outlined in Section 12.2.2 of Chapter 12 (Air Quality). The study area includes both urban and rural areas containing sensitive residential receptors, as well as designated ecologically sensitive areas. For Construction Phase dust, the study area focuses on air quality sensitive receptors within and adjacent to the Planning Application Boundary. The study area with respect to impacts from air quality emissions from vehicle and heavy duty vehicle movements was limited to sensitive receptors and relevant sensitive ecological habitats within 200m from road links, which would be affected by significant changes in traffic flows.

119. The 31 other projects identified as having potential cumulative effects (effects are Not Significant) are listed in Table A21.2.7 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.7.1 Construction Phase Effects Pre-Mitigation

120. All 31 other projects that were screened in for the cumulative assessment for air quality would have potential for cumulative construction dust impacts to sensitive receptors where the other project is within 500m of the Proposed Project and should the construction phase of the other project coincide with the Construction Phase of the Proposed Project. The cumulative effect would be negative, short-term and Not Significant.

21.3.7.2 Operational Phase Effects Pre-Mitigation

121. All 31 other projects that were screened in for the cumulative assessment for air quality would not result in any Significant air emissions and therefore there is no potential for Significant cumulative effects during the Operational Phase before mitigation.

21.3.7.3 Proposed Mitigation

122. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate cumulative impacts. All mitigation outlined in the following documents will be followed:

- Appendix 7.2 (Traffic Management Plan)
- Appendix 12.1 (Dust Mitigation Measures)
- Appendix A5.1 (CEMP).

21.3.7.4 Residual Effects

123. There are no Significant residual cumulative effects for air quality during the construction or operational phases following mitigation.

21.3.8 Population

124. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative impacts relevant to population. One hundred and sixty four other projects were screened in for the cumulative impact assessment for population as they fall within the study area for the population assessment.
125. The study area for population is outlined in Section 14.2.2 of Chapter 14 (Population). Population assessments contain several assessment topics: Employment, Economy, Community Amenity, Community Accessibility and Severance, Tourism, and Land Use and Land-take. The study area for each assessment topic differs due to the nature of likely effects under consideration (i.e. likely effects on land use and land-take are limited to the footprint of the Proposed Project, while likely effects on employment could be experienced locally or nationally).
126. Thirty-two other projects were identified as having potential negative cumulative effects (effects are Not Significant) for the assessment topics of Community Amenity, Accessibility and Severance and Tourism. All 164 other projects were identified as having potential positive cumulative effects on Employment and Economy. The other projects are listed in Table A21.2.8 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.8.1 Construction Phase Effects Pre-Mitigation

127. **Employment:** Due to employment of the construction workforce, all 164 other projects were identified as having positive, Significant, short-term cumulative effects during the construction phase for the assessment topic of 'Employment'.
128. **Economy:** One hundred and sixty four other projects were identified as having positive, Very Significant, short-term cumulative effects on 'Economy' during the construction phase, should temporal overlap of the construction phases occur.
129. **Community Amenity:** Thirty-two other projects were identified as having a potential for negative, Slight and temporary effects (effect is Not Significant) on residential, commercial and community receptors within 500m of the Proposed Project during the construction phase before mitigation. The remaining 132 other projects do not have potential for cumulative effects on community amenity as there is no overlap in site / study areas or land-take required for the Proposed Project and the other projects.
130. **Community Accessibility and Severance:** Thirty-two other projects were identified as having a potential negative, Not Significant/Slight and temporary (effect is Not Significant) effect on residential, commercial and community receptors situated within 500m of a proposed road crossing for the construction of the Proposed Project. The remaining 132 other projects do not have potential for cumulative effects on community accessibility and severance as there is no overlap in site / study areas or land-take required for the Proposed Project and the other projects.
131. **Tourism:** Thirty-two other projects were identified as having a potential:
- Negative, Slight, and temporary cumulative effect (effect is Not Significant) on the community amenity of tourism receptors within 500m of the Proposed Project during the construction phase before mitigation
 - Neutral and temporary cumulative effect (effect is Not Significant) on the community accessibility and severance of tourism receptors within 500m of the Proposed Project during the construction phase before mitigation
 - Neutral and temporary cumulative effect (effect is Not Significant) on visitor perception during the construction phase before mitigation.

132. The remaining 132 other projects do not have potential for cumulative effects on tourism as there is no overlap in site / study areas or land-take required for the Proposed Project and other projects.
133. **Land Use and Land-take:** Thirty-two other projects were identified as having a potential for negative cumulative effects for land use and land-take during the construction phase before mitigation. This has been mitigated at the detailed design stage of the Proposed Project and could also be mitigated at the detailed design stage of the other projects which overlap geographically. The remaining 132 other projects do not have potential for cumulative effects on land use and land-take as there is no overlap in site / study areas or land-take required for the Proposed Project and other projects.

21.3.8.2 Operational Phase Effects Pre-Mitigation

134. **Employment:** Due to employment of construction workforce, all 164 other projects were identified as having a positive, Not Significant/Slight and long-term cumulative effects on the combined construction labour market within the counties in which the Proposed Project is situated, and a positive, Not Significant and long-term effect on the national labour market during the operational phase.
135. **Economy:** One hundred and sixty four other projects were identified as having a positive, Significant, short-term cumulative effect on the national economy during the operational phase.
136. **Community Amenity:** Thirty-two other projects were identified as having a potential cumulative effect of neutral, Imperceptible to negative, Not Significant, and long-term effect on residential, commercial and community receptors within 500m of the Proposed Project during the operational phase before mitigation. The remaining 132 other projects do not have potential for cumulative effects on community amenity as there is no overlap in site / study areas or land-take required for the Proposed Project and other projects.
137. **Community Accessibility and Severance:** Thirty-two other projects were identified as having a potential cumulative effect of neutral and permanent effect (effect is Not Significant) on residential, commercial and community receptors within 500m of the Proposed Project during the operational phase before mitigation. The remaining 132 other projects do not have potential for cumulative effects on community accessibility and severance as there is no overlap in site / study areas or land-take required for the Proposed Project and other projects.
138. **Tourism:** Thirty-two other projects were identified as having a potential cumulative effect (effect is Not Significant) of:
- Neutral, Imperceptible to negative, Not Significant, and long-term effect on the community amenity of tourism receptors within 500m of the Proposed Project during the operational phase before mitigation
 - Neutral and permanent effect (effect is Not Significant) on the community accessibility and severance of tourism receptors within 500m of the Proposed Project during the operational phase before mitigation
 - Neutral and permanent effect (effect is Not Significant) on visitor perception during the operational phase before mitigation.
139. The remaining 132 other projects do not have potential for cumulative effects on tourism as there is no overlap in site / study areas or land-take required for the Proposed Project and other projects.
140. **Land Use and Land-take:** No cumulative effects for land use and land-take are anticipated during the operational phase.

21.3.8.3 Proposed Mitigation

141. Negative cumulative effects will be mitigated by avoiding construction overlap by the two projects (either wholly or in part). This can be achieved through liaison between Uisce Éireann and the third-party developer to understand whether any overlap exists in regard to the construction activities of either project. Where an overlap exists, Uisce Éireann will take appropriate measures during the Construction Phase of the Proposed Project to reduce the potential for negative significant cumulative impacts where necessary.

21.3.8.4 Residual Effects

142. Positive, Significant residual cumulative effects are anticipated during the construction phase between all 164 other projects and the Proposed Project in respect to Employment and Economy, given the expected benefits brought on by construction of the Proposed Project and any of the other projects.

143. Positive, Significant residual cumulative effects are anticipated during the operational phase between all 164 other projects and the Proposed Project in respect to economy, given the expected benefits brought on by operating the Proposed Project and other projects.

21.3.9 Human Health

144. The list of 164 other projects identified at Stage 3 has been reviewed and assessed for cumulative effects relevant to human health. Of those 164 other projects, 138 were screened in for the cumulative impact assessment for human health.

145. The study areas for the human health assessment are site-specific, local and regional. These are outlined in further detail Section 15.2.3 of Chapter 15 (Human Health). The study areas differ due to the nature of potential effects under consideration, e.g. potential impacts on construction workers are limited to within the Planning Application Boundary, while potential impacts on the local population aligns with the study area set for community amenity in Chapter 14 (Population), which is 500m from the Proposed Project. Potential impacts on human health could also occur at a wider scale such as regionally or by wider society.

146. One hundred and thirty-eight other projects were identified as having potential cumulative effects (Significant and Not Significant depending on the assessment topic for human health and are listed in Table A21.2.9 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.9.1 Construction Phase Effects Pre-Mitigation

147. One hundred and thirty-eight other projects are likely to have a negative, Significant and short-term cumulative effect on the health and well-being of the nearby farming community during the construction phase before mitigation. These are listed in Table A21.2.9 of Appendix A21.2 (Stage 4 Assessments). The farming community lives and works in close proximity to the Proposed Project and is the population group most likely to be directly affected during the Construction Phase of the Proposed Project. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate this Significant cumulative effect.

148. One hundred and thirty-eight other projects are likely to have a positive, Slight, short-term cumulative effect (effect is Not Significant) on human health during the construction phase, specifically employment and economy. This is as a result of the health benefits associated with new employment opportunities within the regional study area as well as the procurement, investment and other economic contribution to the national economy during the Construction Phase of the Proposed Project.

149. Twenty-eight other projects are likely to have a negative, Slight, and temporary cumulative effect (effect is Not Significant) due to health and wellbeing effects on people from dust and vehicle emissions during the construction phase before mitigation.
150. Ten other projects are likely to have a negative, Slight, and short-term cumulative effect (effect is Not Significant) during the construction phase before mitigation due to potential effects on agricultural land from dust deposition caused by earthworks. Dust deposition from earthworks and trackout can impact agricultural land which may limit the areas on which farmers can grow certain crops.
151. Ten other projects are likely to have a negative, Moderate and short-term cumulative effect (effect is Not Significant) on community safety within the Planning Application Boundary of the Proposed Project.
152. Three other projects are likely to have a negative, Slight and temporary (effect is Not Significant) effect on Water during the construction phase before mitigation. In the context of human health, the assessment topic of Water considers well-being effects arising from potential construction impacts on waterbodies used for drinking water and amenity. The likely negative cumulative effect relates to the Grand Canal which is used for boating or angling activities and potential exposure to water pollution from unmitigated construction activities.
153. Ten other projects are likely to have a negative, Moderate and temporary effect (effect is Not Significant) on human health relating to noise, within 500m of trenchless crossing locations (45 no.) associated with noise during night-time hours during the construction phase, before mitigation.

21.3.9.2 Operational Phase Effects Pre-Mitigation

154. In the Operational Phase, no cumulative effects are anticipated for human health.

21.3.9.3 Proposed Mitigation

155. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate cumulative effects. These include the following:
- Mitigation measures for noise which are outlined in Section 6.5 of Chapter 6 (Noise & Vibration). The cumulative assessment for noise (Section 2.3.1) states no likely significant cumulative impacts are anticipated following mitigation
 - Mitigation measures for potential significant effects on the farming community during the Construction Phase are outlined in Section 11.5 of Chapter 11 (Agriculture). These include ongoing consultation and liaison with landowners to minimise disruption; discussions over potential compensation; and pre-construction meetings to understand drainage systems and farm assets to be avoided during, or reinstated post, construction works.

21.3.9.4 Residual Effects

156. All 138 other projects have positive, long-term, Not Significant residual cumulative effects on human health during the construction or operational phases, when assessed individually in conjunction with the Proposed Project and following the implementation of mitigation measures outlined in the EIAR.

21.3.10 Landscape and Visual

157. A list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative effects relevant to landscape and visual. Of those 164 other projects, 40 were screened in for the cumulative impact assessment for landscape and visual during the construction and operational phases. Six other projects screened in to the assessment have been assessed as having no potential for cumulative impacts.

158. The study areas for each assessment theme for the landscape and visual assessment are outlined in Section 16.2.2 of Chapter 16 (Landscape & Visual). The study area used for the assessment of landscape and visual effects varied along the length of the Proposed Project and was dependent on the location being considered and the works proposed in that location. This is because the visual context and extent of potential intrusion would differ for different elements of the Proposed Project and is influenced by the existing baseline features such as topography and vegetation.
159. The 34 projects identified as having potential cumulative effects (effects are Not Significant) are listed in Table A21.2.10 of Appendix A21.2 (Stage 4 Assessment) and shown in Figure 21.1.

21.3.10.1 Construction Phase Effects Pre-Mitigation

160. Twenty-nine other projects are likely to have negative, Slight and short-term (effect is Not Significant) effects on landscape during the construction phase before mitigation.
161. Five other projects are likely to have negative, Slight-Imperceptible and short-term (effect is Not Significant) effects on landscape during the construction phase before mitigation.
162. Twelve other projects are likely to have negative, Slight and short-term (effect is Not Significant) visual effects during the construction phase before mitigation.
163. Seventeen other projects are likely to have negative, Moderate-Slight and short-term (effect is Not Significant) visual effects during the construction phase before mitigation.
164. Five other projects are likely to have negative, Slight-Imperceptible and short-term (effect is Not Significant) visual effects during the construction phase before mitigation.
165. Potential cumulative Construction Phase effects could arise due to increased construction activity within the Planning Application Boundary and increased vehicle movement on the nearby road network and in fields. Although the construction works would represent an increased intensity, it is not uncommon to see tractors and plant machines operating within agricultural fields, and an increase in vehicle movement on roads in this area would have a limited effect on landscape character. A high degree of vegetative screening within the landscape would mean that visual receptors would have minimal potential to see any construction at ground level. Glimpses of cranes rising above the treelines and hedgerows from both the Proposed Project and any of the other projects could be possible.

21.3.10.2 Operational Phase Effects Pre-Mitigation

166. During the Operational Phase, 26 other projects are likely to have a negative, Imperceptible and permanent (effect is Not Significant) cumulative effect on landscape before mitigation. Seven other projects are likely to have a neutral, Imperceptible and permanent (effect is Not Significant) cumulative effect on landscape during the Operational Phase before mitigation. One other project is likely to have a negative, Slight-Imperceptible and permanent (effect is Not Significant) cumulative effect on landscape during the Operational Phase of the Proposed Project before mitigation.
167. During the Operational Phase, 26 other projects are likely to have negative, Imperceptible and permanent (effect is Not Significant) cumulative visual effect. Seven other projects are likely to have neutral, Imperceptible and permanent (effect is Not Significant) cumulative visual effect during the Operational Phase. One development is likely to have a negative, Slight-Imperceptible and permanent (effect is Not Significant) cumulative visual effect during the Operational Phase. These are listed in Table A21.2.10 of Appendix A21.2 (Stage 4 Assessment).

168. All permanent above-ground structures as part of the Proposed Project will be small scale. Provision of vegetative screening within a relatively flat landform means there would be minimal potential for negative visual effects of other projects cumulatively with the Proposed Project during the Operational Phase.

21.3.10.3 Proposed Mitigation

169. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate cumulative effects:

- Adherence to CEMP and implementation of effective screen planting, landscape mitigation plans and design as outlined in the Landscape Mitigation Plans
- Replanting and reinstatement of hedgerows, grassland, scrubland and wooded areas on a like-for-like basis will be undertaken in compliance with Uisce Éireann's tree protection policy
- Visual screening (screen planting) around the perimeter of infrastructure sites will be planted where deemed necessary
- Internal integration planting will be undertaken to soften visible façades of buildings where deemed necessary.

21.3.10.4 Residual Effects

170. No Significant residual cumulative landscape and visual effects were identified in the construction or operational phases that require specific mitigation; however, there would be benefits from the proposed screen planting which will be present at the key infrastructure sites, which relate to non-significant landscape and visual effects.

21.3.11 Cultural Heritage

171. The list of 164 other projects identified at Stage 3 has been reviewed and assessed for potential cumulative effects individually and in combination with the Proposed Project. Of those 164 other projects, 27 were screened in for potential cumulative effects for cultural heritage as they fall within the study area for the cultural heritage assessment. A total of 137 other projects were screened out for potential cumulative effects during the Construction and Operational Phases, due to their scale, nature and/or distance from the Proposed Project.

172. The study area for cultural heritage is an area measuring 250m from the Planning Application Boundary of the Proposed Project to the upstanding remains of a cultural heritage site or structure. Where there are no upstanding remains, the measurement is taken to the centre of the site.

173. The 27 other projects identified as having potential cumulative effects (effects are Not Significant) are listed in Table A21.2.11 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.11.1 Construction Phase Effects Pre-Mitigation

174. All construction activities associated with the Proposed Project and other projects would be subject to a programme of archaeological investigation and any archaeological remains would be preserved *in situ* or by record. Therefore, no likely Significant cumulative effects are predicted upon archaeological, architectural or cultural heritage during the Construction Phase of the Proposed Project before mitigation.

21.3.11.2 Operational Phase Effects Pre-Mitigation

175. No likely cumulative effects are predicted upon archaeological, architectural or cultural heritage during the Operational Phase of the Proposed Project before mitigation.

21.3.11.3 Proposed Mitigation

176. Mitigation measures already included in Chapter 17 (Cultural Heritage) of this EIAR have ensured that the Proposed Project has no significant effects following mitigation on sensitive archaeological, architectural and cultural heritage receptors. The mitigation measures included in Chapter 17 (Cultural Heritage) are also considered appropriate and sufficient to avoid, reduce or mitigate cumulative effects, and include the following:

- All archaeological underwater/wade assessments and archaeological testing programmes will be carried out in advance of construction and under licence from the DoHLGH. The results of the assessments may lead to additional mitigation, such as archaeological excavation (preservation by record) and/or monitoring. Any further mitigation will require the agreement of the National Monuments Service of the DoHLGH
- Any required written and photographic records will be carried out prior to the construction of the Proposed Project, by a suitably qualified heritage specialist
- Archaeological monitoring will be carried out during the Construction Phase of the Proposed Project at locations specified within Chapter 17 (Cultural Heritage) Sections 17.5.2.1 to 17.5.2.9 and associated tables (Tables 17.150 to 17.182); and across all greenfield areas of the Proposed Project (that are not first assessed by archaeological testing). Monitoring may lead to additional mitigation, such as archaeological excavation (preservation by record). Any further mitigation will require the agreement of the National Monuments Service of the DoHLGH.

21.3.11.4 Residual Effects

177. No Significant residual cumulative effects are anticipated for cultural heritage during the Construction or Operational Phases following mitigation.

21.3.12 Material Assets

178. The list of 164 other projects identified at Stage 3 has been reviewed and assessed in relation to cumulative effects relevant to material assets. Of those 164 other projects, 17 were screened in for the cumulative impact assessment for material assets based on the study area for the assessment of material assets. A total of 147 other projects were screened out for potential cumulative effects during the construction and operational phases.

179. The study area for material assets is outlined in Section 18.2.2 of Chapter 18 (Material Assets). The study area is the Planning Application Boundary encompassing all areas where works would be required to construct the Proposed Project.

180. The 17 other projects identified as having potential cumulative effects (effects are Not Significant) are listed in Table A21.2.12 of Appendix A21.2 (Stage 4 Assessments) and shown in Figure 21.1.

21.3.12.1 Construction Phase Effects Pre-Mitigation

181. Thirteen other projects are likely to have negative, Slight, temporary (effect is Not Significant) construction phase cumulative effects on low/medium voltage overhead lines due to overlap with the Proposed Project before mitigation. Seven projects are likely to have negative, Slight, temporary (effect is Not Significant) construction phase cumulative effects on high voltage overhead lines due to overlap with the Proposed Project before mitigation.

182. One other project is likely to have negative, Slight, temporary (effect is Not Significant) construction phase cumulative effects on medium pressure gas pipelines before mitigation. Two other projects are likely to have negative, Slight, temporary (effect is Not Significant) construction phase cumulative effects on water supply mains (Uisce Éireann) before mitigation.

21.3.12.2 Operational Phase Effects Pre-Mitigation

183. No Operational Phase cumulative effects are anticipated. During the Operational Phase of the Proposed Project, no proposed activities would adversely impact electricity or gas transmission infrastructure. Therefore, there would be no cumulative effects on these services during the Operational Phase.

21.3.12.3 Proposed Mitigation

184. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate cumulative effects. These include the following:

- Adherence to CEMP and implementation of practices and procedures outlined in relation to crossings of material assets such as electricity and gas infrastructure
- There will be ongoing engagement with service providers to confirm the current locations of services and to ensure end users will not be disrupted, where reasonably practicable.

21.3.12.4 Residual Effects

185. No Significant residual cumulative effects are anticipated for material assets during the Construction or Operational Phases following mitigation.

21.4 Assessment of Environmental Interactions

186. The potential interactions between environmental aspects arising from the Proposed Project were considered and are addressed in more detail within the applicable chapters of the EIAR.

187. A matrix of the environmental interactions is presented in Table 21.8 and a summary of the interactions between environmental aspects prior to mitigation is included in Sections 21.4.1.1 - 21.4.1.10.

Table 21.8: Environmental Interactions Matrix

Typical Inter-Relationship Matrix – Environmental Elements	Population		Human Health		Biodiversity		Water		Soils, Geology & Hydrogeology		Agriculture		Air Quality		Climate		Noise & Vibration		Traffic & Transport		Landscape & Visual		Cultural Heritage		Material Assets		Resource & Waste Management	
	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
Population																												
Human Health	✓	✓																										
Biodiversity																												
Water		✓		✓	✓	✓																						
Soils, Geology & Hydrogeology			✓		✓		✓	✓																				
Agriculture	✓	✓	✓		✓		✓		✓	✓																		
Air Quality	✓		✓		✓						✓																	
Climate							✓		✓																			
Noise & Vibration	✓		✓		✓						✓																	
Traffic & Transport	✓	✓	✓	✓			✓	✓			✓		✓	✓	✓		✓											
Landscape & Visual	✓	✓			✓	✓	✓		✓																			
Cultural Heritage	✓								✓												✓							
Material Assets	✓						✓				✓				✓	✓												
Resource & Waste Management	✓	✓			✓		✓		✓										✓	✓								

21.4.1.1 Interactions Between Population and Human Health

188. Construction: Inherent relationship between population and health. Certain factors that have the potential to impact on population can also impact health (i.e. nuisance of dust on population may impact on the health of sensitive receptors within that population).
189. Operation: Improved provision of potable water will be beneficial to the health of the receiving population and deliver a sustainable source of water necessary to support Ireland's growing population, including the demand for housing.

21.4.1.2 Interactions Between Population, Air Quality and Noise & Vibration

190. Construction: Construction activities have the potential to impact the local populations due to noise and vibration and air quality impacts, specifically at sensitive locations. There is also a potential visual impact on the landscape and local amenities which could have a socioeconomic impact on tourism and leisure in the area.

21.4.1.3 Interactions Between Human Health, Soils, Geology & Hydrogeology, Water, Air Quality, Biodiversity and Noise & Vibration

191. Construction: There is a potential health impact on nearby sensitive receptors due to construction dust and noise which can lead to stress. Construction dust is particularly impactful at sensitive receptors such as Peamount Hospital which has patients with respiratory illnesses. There is also a potential health impact due to potential spread of noxious weeds such as Japanese Knotweed, Himalayan balsam and giant hogweed etc, animal-borne diseases such as tuberculosis and brucellosis where cattle come into contact with infected wildlife, and soil-borne diseases such as potato eelworm, through exposed soil.
192. Operation: Human Health could potentially be impacted due to the mobilisation of contaminated ground during excavation for construction activities. This could lead to cryptosporidium spreading into the drinking water supply. However, the Proposed Project would have a positive, Very Significant, long-term effect on human health as it would result in an adequate supply of clean potable water and would allow for various wider societal benefits such as economic and social development and climate change resilience which cannot occur without an adequate supply of water.

21.4.1.4 Interactions Between Population, Material Assets, Cultural Heritage, Agriculture, Water and Landscape & Visual

193. Construction: There is a temporary potential impact on population due to road closures and infrastructure interruptions and a reduction in the availability of raw materials that are used for construction. The landscape value of the area has the potential to be impacted by any impact on cultural heritage features during excavation activities. There is potential for construction activities to disrupt water supplies (particularly livestock surface water drinking supplies) and power supplies to farming infrastructure. Disruption to local farmers and the agricultural industry and the mostly temporary loss of agricultural land in the area would have a socioeconomic impact.
194. Operation: Visual impacts in the Operational Phase have the potential to impact important walking routes in the vicinity of the Proposed Project (e.g. Scohaboy Bog Natural Heritage Area and walks linked to the Beara-Breifne Way) as well as cultural heritage sites. This has potential to directly impact the local population and also the tourism industry. There is also a potential socioeconomic impact due to potential damage to soil structure and drainage systems, and the potential for restrictions on land use within the 20m Permanent Wayleave and at valve locations, and the knock-on impact to farming practices.

21.4.1.5 Interactions Between Population, Human Health, Air Quality, Noise & Vibration, Climate and Traffic & Transport

195. Construction: Increased construction traffic could cause nuisance, stress and delays, particularly in the vicinity of key infrastructure sites. There is also the potential that construction traffic will increase impacts associated with creation of dust and generation of vehicle and plant emissions, impacting local air quality, human health and increasing carbon emissions. Noise and vibration levels may increase due to the presence of heavy goods vehicles (HGVs) and other ancillary vehicles on the roads. The increased presence of HGVs may also negatively impact local roads and pose hazards to local road users.
196. Operation: HGVs will be used to remove sludge waste from the water treatment plant. This has potential to cause a nuisance to the local community as well as the air quality, carbon, noise and vibration and human health impacts discussed for construction.

21.4.1.6 Interactions Between Climate, Air Quality, Material Assets, Resource & Waste Management and Traffic & Transport

197. Construction: Creation of dust and general vehicle and plant emissions during the Construction Phase have the potential to impact local air quality. There will be climate impacts associated with construction materials and methodologies.
198. Operation: There is potential for climate impacts associated with the provision of electricity to the infrastructure sites; however, mitigation identified in Chapter 13 (Climate) includes use of Corporate Power Purchase Agreements (CPPA) to supply 100% renewable energy to the Infrastructure Sites.

21.4.1.7 Interactions Between Biodiversity, Traffic & Transport, Soils, Geology & Hydrogeology, Agriculture, Water, Air Quality, Noise & Vibration and Landscape & Visual

199. Construction: Potential impact to aquatic species resulting from a deterioration in water quality due to sediment or chemical releases or runoff (from waste storage areas) particularly into watercourses considered as being of 'high ecological value'. Potential impact from dust within and adjacent to the Lower River Shannon Special Area of Conservation and on habitats in close proximity to all construction works. There is also potential for noise and vibration impacts on sensitive ecological receptors such as feeding or roosting wintering birds or bats, burrowing species and on aquatic species where piling or pipe-jacking is undertaken. Noise and vibration from construction can also cause distress to livestock and farm animals. Increased traffic volumes and the use of temporary access points will also potentially increase nuisance to farm operators and animals.
200. Potential impact from the removal of riparian vegetation at watercourse crossings and the removal of trees and hedgerows affecting habitats of bats and birds (e.g. the removal of hedgerows and treelines during the Construction Phase has the potential to cause habitat fragmentation). Agriculture impacts include potential spread of noxious weeds such as Japanese Knotweed, Himalayan balsam and giant hogweed, etc., animal-borne diseases such as tuberculosis and brucellosis where cattle come into contact with other livestock, and soil-borne diseases such as potato eelworm through exposed soil.
201. Operation: There is a potential impact to aquatic species in watercourses to which washout valves will discharge during draindown. However, planting has been proposed to screen the Proposed Project, which has the potential to positively enhance habitats.

21.4.1.8 Interactions Between Water and Traffic & Transport

202. Construction and Operation: Potential for runoff from road surfaces to surface waters due to increased traffic associated with the Proposed Project on roads.

21.4.1.9 Interactions Between Climate and Water

203. Operation: Positive impact due to delivery of increased water supply to the Eastern and Midlands Region reducing potential for future water shortages during escalated dry spells as a result of climate change.

21.4.1.10 Interactions Between Soils, Geology & Hydrogeology, Climate, Agriculture, Landscape & Visual, Cultural Heritage, Resource & Waste Management and Water

204. Construction: Excavation of soil during the Construction Phase has the potential to impact soil quality, farming operations and the baseline landscape. There is also the potential for archaeological finds and that contaminated grounds will be encountered. If peat is disturbed/excavated then there will be an increase in CO₂ release. If excavated soils and rock cannot be re-used then there will be a knock-on impact on capacity at licensed waste facilities. There is potential for sediment-laden runoff from construction areas and trenches near watercourses to introduce fine sediments into surface waters. When soil is exposed, there is potential for noxious weeds, invasive species and soil-borne diseases to spread.

205. Operation: Loss of soil and potential for improper mixing of topsoil and subsoil during reinstatement could impact the soil quality. Any changes to water flow paths could potentially impact on aquifers in the vicinity of the Proposed Project.

21.5 Mitigation Measures

206. Mitigation measures already included in this EIAR are considered appropriate and sufficient to avoid, reduce or mitigate negative Significant cumulative effects to a Not Significant level for the following assessment topics within this chapter:

- Noise and Vibration
- Traffic and Transport
- Water
- Soils, Geology and Hydrogeology
- Agriculture
- Air Quality
- Population
- Human Health
- Landscape and Visual
- Cultural Heritage
- Material Assets.

207. The identified Significant residual cumulative biodiversity effects associated with the six other projects in cumulation with the Proposed Project during the Construction Phase take account of all relevant biodiversity-related mitigation measures included in this EIAR, as included in Chapter 8 (Biodiversity) and summarised in Section 21.3.3.3 of this chapter. Habitats will primarily be reinstated like-for-like post construction, along with landscape planting measures at the key infrastructure sites to mitigate for the permanent loss of habitats. The Proposed Project will also provide bat boxes and artificial badger setts. Therefore, no additional mitigation measures are proposed.

208. In summary, with the implementation of the specified mitigation measures, the majority of identified potential cumulative effects will be avoided during the Construction and Operational Phases. However, a small number of short-term cumulative residual effects have been identified from the biodiversity assessment relating to six other projects during the Construction Phase.

21.6 Residual Effects

209. With the implementation of the specified mitigation measures, the majority of the identified cumulative effects will be avoided or reduced to a Not Significant level. The exceptions to this are the negative Significant residual cumulative effects during the Construction Phase identified in the biodiversity assessment, and the positive Significant residual cumulative effects during the Construction Phase identified in the population assessment.

210. For biodiversity, six other projects have been identified as having negative short-term Significant residual cumulative effects relating to badger, bats and habitats at a local / local to county geographical scale³ in cumulation with the Proposed Project during the Construction Phase (Table 21.9).

Table 21.9: Other Projects Identified as Having Likely Significant Residual Cumulative Effects for Biodiversity

Authority	Application Reference	Other Project
An Coimisiún Pleanála	316372	Electricity Transmission Network: Capital Project 966 Proposed electricity infrastructure project to strengthen the electricity network between the Dunstown substation in Kildare and the Woodland station in Meath. Capital Project 966 is a proposed development that will help transfer electricity to the east of the country and distribute it within the network in Meath, Kildare and Dublin. The project will help to meet growing demand for electricity in the east of the country (Meath, Kildare, Dublin) and integrate generation in the West and South West.
An Coimisiún Pleanála	JH06S.322638	South Dublin County Council The development of 1,252no. residential units in a mix of houses, duplexes, triplexes and apartments; 2no. childcare facilities; 1no. community building; retail uses; refurbishment works to Grange House for future reuse.
Kildare County Council	2560302	Eirgrid Plc. Works associated with the proposed uprate of the existing 110 kV Overhead Line (OHL) between the existing Cushaling 110 kV substation in the townland of Ballykilleen, Co. Offaly and the existing Portlaoise 110 kV substation in the townlands of Clonminam and Kylekiproe, Co. Laois.
Offaly County Council	2560087	Eirgrid Uprate of the existing 110 kV Overhead Line (OHL) between the existing Cushaling 110 kV substation in the townland of Ballykilleen, Co. Offaly and the existing Portlaoise 110 kV substation in the townlands of Clonminam and Kylekiproe, Co. Laois.
Offaly County Council	20218	Moanvane Wind Farm Limited Laying an underground electricity cable of up to 110kV and associated ducting and ancillary development, primarily within the public road in the townlands of Rathfleston, Ballykean, Ballyduff, Raheenbeg, Kilcooney, Ballintogher, Gorteenkeel and Balltnakill, Co. Offaly.
N/A	N/A	National Transport Authority Cycle Connects. Improving the cycle network within towns across Ireland.

211. For population, positive Significant residual cumulative effects are anticipated during the Construction Phase between all 164 other projects and the Proposed Project in respect to 'Employment' and 'Economy' given the expected benefits brought on by construction of the Proposed Project and any of the other projects. In addition, positive Significant residual cumulative effects are anticipated during the operational phase between all 164 other projects and the Proposed Project in respect to economy, given the expected benefits brought on by operating the Proposed Project and any of the other projects.

³ 'Local geographical scale' is defined in Chapter 8 Biodiversity, Section 8.2.7.1, Table 8.17 entitled 'Ecological Valuation Criteria at Different Geographical Scales Used in Assessing the Ecological Importance of Sites'.

21.7 Difficulties Encountered in Compiling Required Information

212. The cumulative effects of the Proposed Project with each of the other projects were identified and assessed at a point in time. These projects were assessed to a level of detail commensurate with the information that was available at the time of assessment. Where information regarding proposed other projects was limited, these gaps were acknowledged within the assessment and the associated uncertainty in these cases is documented.

21.8 References

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