

Sure Partners Limited

ARKLOW BANK WIND PARK  
PHASE 2

**ONSHORE GRID  
INFRASTRUCTURE**

**VOLUME III**

**Chapter 21 APPENDICES**

**Appendix 21.1** Planning History

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Renewables

## Appendix 21.1

### Planning History



## Appendix 21.1 Planning History

The table below presents the historical and current planning applications that were made within and in the vicinity of the redline boundary. The Planning Register Reference Number refers the Wicklow County Council planning register, unless noted otherwise.

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
126265	Demolition of existing single storey store, construction of new first floor extension to existing single storey house, alterations to elevations of existing house to include additional windows, doors & bay window & all associated site works in Shelton, Arklow.	Conditional
126795	The development at Templerainy Road, Arklow, Co Wicklow consists of 75 space car park with drop off area for mini-buses and with access road, footpaths, fencing, landscaping, public lighting, drainage and ancillary works.	Conditional
126869	Demolition of existing link corridor and boiler room in Kilbride Industrial Estate, construction of new production area and extension to existing amenity area on the ground floor, construction of new mezzanine office on the first floor, construction of new stairwell and associated site works, in Seabank, Arklow.	Conditional
126905	Single storey extension to rear of existing detached single storey bungalow, connecting into existing services	Conditional
138823	Construction of a single storey industrial unit with ancillary office accommodation at ground and mezzanine floor level at the Avoca River Business Park (floor area 1611sqm), wastewater treatment plant and associated site works and drainage (Extension of duration granted – Planning Reference: 19332)	Conditional
138196	Changes to house design, Ballinaskea Arklow.	Conditional
141234	The development consists of a Park and Ride Facility, construction of 170 space car park with turning access lane, internal bus pickup area, bicycle storage, revised road markings including extension of existing bicycle lane to site, footpaths, fencing, landscaping including screening and fencing, public lighting, drainage and ancillary works at Templerainy Northern Access Road Arklow. (Extension of duration 20946)	Conditional

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
141525	The partial demolition of an existing 83sqm single storey dwelling and ancillary buildings and the construction of a 107sqm single storey extension to the side and rear of the existing dwelling and the provision of a new domestic wastewater treatment and soakaway system in Kilbride, Arklow.	Conditional
141665	A residential granny flat, with attached storage building and conversion of barn to commercial holiday home and permission to decommission existing septic tank and replace with a new effluent treatment system and percolation area to current EPA standards to facilitate the existing dwelling and residential granny flat and conversion of barn to commercial holiday home, with all associated works in Shelton Abbey, Arklow.	Conditional
1546	Construction of a new stand alone, two story building to the south west side of the existing school building, comprising of 10 no. classroom and associated ancillary educational spaces. Removal of 7 no. temporary structures. Alterations and refurbishment to parts of the existing school and all ancillary site works at St Joseph's National School Templerainy, Arklow.	Conditional
15465	Change of use of existing industrial unit to plastic waste recycling facility in the Avoca River Business Park.	Conditional
15565	Demolition of an existing single storey semi-detached dwelling, replacement of same with new two storey detached dwelling, new on-site wastewater treatment facility, new vehicular site entrance, and all ancillary works in Johnstown South.	Conditional
161285	The development at Coolboy, Kilbride, Co Wicklow consists of a solar PV Energy development within a total site area of up to 21.5 ha, to include one single storey electrical substation building, electrical transformer / inverter station modules, solar PV panels ground mounted on steel support structures, access roads, fencing and associated electrical cabling, ducting and ancillary infrastructure	Refused
16466	Phase 1: includes proposed external & internal changes to the existing manufacturing facility known as Kilbride House. Phase 2: Includes internal modifications to Glenhaven Foods existing manufacturing facility accommodating minor internal changes to the existing	Conditional

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
	warehouse & production are. Phase 3: A 2-Storey extension to the front of the existing coldstore. This will include the addition of new docklevellers & loading bay area all together with associated site works	
161384	Steel framed weatherproof structure to enclose existing air handling units, a cold-water storage tank and ancillary equipment including utilities pipework, electrical cabling and ducting located on the roof of the existing laboratory building in pharmaceutical complex, Vale Road, Arklow.	Conditional
161418	Laying of 570m(approx.) of 100mm diameter uPVC watermain through greenfield lands and laying of 340m (approx.) of 100mmdiameter uPVC watermain along Glenart Drive including all associated valves, chambers and meters and associated site works	Conditional
16345	Proposed change of use from industrial use to plastics recycling facility unit in the Avoca River Business Park.	Conditional
16576	Demolish single storey utility, study room and garage and construct two storey extension in lieu including new bay window and entrance porch, Searoad, Arklow.	Invalid
16895	Extend nursing home to provide additional accommodation and associated facilities in Seabank, Arklow. Permission is sought for the following upgrade present effluent treatment system, align entrance to nursing home from private access road, upgrade existing car parking arrangement. Permission is also sought to remove the existing dwelling to facilitate the new works.	Conditional
16956	Existing 36m high, free standing lattice type communications structure carrying antennae and communication dishes within an existing 2.4m high palisade fence compound	Conditional
171073	Garden room to side of house, Dublin Road, Arklow.	Granted with conditions
171143	One and two storey extension to the side, internal and external alterations including new windows and roof adjustment to existing house, upgrade to existing wastewater treatment system and associated site works in Killinskyduff, Arklow.	Conditional

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
171497	The development at Johnstown North Co. Wicklow will consist of a solar wind farm on a site area of approximately 39 hectares consisting of solar photovoltaic panels covering an area of up to 27.2ha on ground mounted steel frames, 1 no on site substation, 8 no inverter / transformer stations, underground cables and ducts, boundary security fence, new internal tracks, CCTV cameras and all associated site services	Conditional
17259	Demolition of existing conservatory to the rear and the construction of an extension on its footprint in Killinskyduff, conversion of the existing garage to the front of the existing house, change of roof type from flat to pitch slate roof, alterations to all elevations and all ancillary site works	Conditional
171440	The development at Ballinaclea, Ballyrichard and Templerainey Arklow Co. Wicklow is a Solar PV Energy development within a total site area of up to 58.9ha to include one single storey electrical substation building, electrical transformer / inverter station modules, battery storage modules, solar PV panels ground mounted on steel support structures, access roads, fencing and associated electrical cabling, ducting and ancillary infrastructure.	Conditional
17444	Reinstatement of petrol station in Killinskyduff, replacement of underground fuel tanks, conversion of offices and lobby areas of car garage and showroom to ancillary shop, signage and associated site works.	Granted with conditions
171502	Demolition of existing front entrance porch and single storey conservatory structure to the side and rear of the existing dwelling in Seabank, the demolition of an existing detached single storey garage structure to rear, the construction of a new single storey master bedroom extension to gable end, the construction of a new single storey kitchen / utility, dining and living room extension to rear, the relocation of main entrance door from the front to the side of the dwelling, alterations to existing window openings, and all associated site works.	Conditional
181007	Detached single storey art / hobby room (22.56 sqm) for ancillary use to main house to rear of existing dwelling in Ballymoney, Arklow, timber garden shed	Conditional

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
	(16.16 sqm) to rear of existing dwelling, permission is sought for the following: demolish existing extension (13.72 sqm) to rear of existing dwelling, new single storey extensions with total floor area of 45.47 sqm to rear of existing dwelling, provide new rooflight to existing bathroom to rear, all above with associated site works	
181404	Portal frame structure 69m long by 15.4 m wide by 6.5m high (floor area 1063 sqm) to enclose existing drum storage bund in pharmaceutical complex, Vale Road, Arklow.	Granted
1831	Erection of 3 illuminated signs at pharmaceutical complex to reflect a rebranding of the company as a subsidiary of Merck KGaA. Two signs are to be located at the entrance to the site and will replace two existing signs at the site entrance. The third sign will be located on the south west gable of the existing distribution warehouse building	Granted with conditions
18772	Change of use of part of an existing commercial mushroom farm to a steel container self-storage facility along with all associated site development works to include security fencing to all boundaries and upgrading of the existing site entrance, Kilbride, Arklow.	Conditional
18892	Partial demolition of existing house 93.83 sqm consisting of removing existing pitched roof and flat roof, with alterations and blocking up of existing window / door openings, construct new extension (86.55 sqm) with new pitched roof and rooflights, partial demolition of existing shed to rear of dwelling, new garage / store (80.93 sqm) to rear of site for ancillary use of the home, new septic tank to replace existing, all above with associated site works, Beech Road, Arklow.	Conditional
18940	Demolition of buildings and structures on site and construction of Data Storage Facility comprising 3 data storage buildings and all associated site infrastructure in the Avoca River Business Park. The development will consist of upgrade of existing 110 kV substation.	Conditional
19627	The solar farm development in the townland of Ballymoney Co. Wicklow will consist of solar photovoltaic panels covering an area of up to 9.8ha within a 19ha site, on-site substation, 3 no. inverter/transformer stations; underground cables and ducts; boundary security	Conditional



Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
	fencing; new internal tracks; CCTV cameras and all associated site services.	
1954	Detached two storey office building (249 sqm) detached timber factory building with canteen, wcs and 1st floor office (1432 sqm) and detached timber factory building with mezzanine office / wcs / canteen (1476 sqm), site layout to include 3 no yard areas, 30 no car parking spaces, 20 no cycle spaces, 2 no bin storage area, 3 no vehicular entrance gates, boundary fence, wastewater treatment system and associated site works	Conditional
191171	Housing estate on a 1.6744HA site, on the north side of Coolgreaney Road, Arklow, comprising of 33 units in total: the construction of six no. 4 bedroom, semi-detached 2 storey houses, 26 no. 3 bedroom semi-detached 2 storey houses and one no. 4 bedroom, detached 2 storey house; the construction of a new access road and footpaths (cul-de-sac) and pedestrian access off Coolgreaney road and all associated boundary treatment works; provision of a 5,897sqm open space are comprising of 4,097sqm of usable public open space suitable for recreational use; all associated ancillary site development works	Conditional
19373	Residential development comprising a creche; 185 houses with 4 house types; 8 duplex units over 8 apartments; new access/relief road and infrastructure linking Vale Road to Lamberton Avenue; all services and ancillary site development works; relocation of part of existing overhead ESB lines; with temporary effluent treatment plant and sewerage pumping station at Yardland Td	Conditional
19907	Importation of greenfield soil and stone for the improvement of land for agriculture in Carrycole in Arklow, requiring the importation of 34654 cubic metres of inert greenfield soil and stone over a period of up to 3 years. The development will include resurfacing of the existing private access roadway, temporary wheel wash, temporary welfare cabin and all ancillary site works. The development will be subject to a waste management permit from Wicklow County Council	Conditional

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
19668	Solar farm, comprising groups of solar photovoltaic panels erected on steel frames in Killiniskyduff, Arklow, an inverter and transformer housing unit, a substation building and ancillary site services and works, including underground ducts and cables, fencing, entrance gateway and site access roadway, on a site having an area of 0.86 hectares. Permission is sought for a period of ten years.	Refused
201285	Demolition of buildings and structures on site and construction of Data Storage Facility comprising data storage buildings and all associated site infrastructure in the Avoca River Business Park. The development will consist of upgrade of existing 100kV substation.	Received notification of grant subject to appeal
20156	Demolition of existing storage shed, a new shed to serve as house ancillary storage and hobby shed to store vintage cars and associated site development works in Johnstown North.	Conditional
20235	Revisions to development permitted under Registry Reference 8/610066 (as extended by Reg Refs 13/610035 and 19/373 and revised by Reg Refs 16/1418, 18/1033 and 19/266 and concurrent revisions applications Reg Ref 20/187 and shall provide for the replacement of 55 no. previously permitted units located in 'Phase 3' with 84 no. residential units (comprising 68 no 2 storey houses and 16 no. apartment / duplex units arranged across 3 storeys) in Vale Road Yardland Td Arklow. Permission is also being sought for the omission of 22 no. previously permitted units and in their place the provision of an enlarged area of public open space.	Received notification of grant subject to appeal
20383	154 sqm rear and side dormer style extension to 48 sqm dwelling on Kilbride Road, Arklow. Front dormer window to roof, proposed front porch, replacement wastewater treatment system to EPA standards in lieu of existing septic tank and associated works.	Conditional
20662	A portal frame structure 20 m long by 14 m wide by 7.5 m high, at the Sigma Aldrich Ireland Ltd facility in North Quay. The building will be used as a store to house spare parts and maintenance equipment. A single-storey office 5.0 m by 3.5 m within the proposed store to keep records and specification details of the spare parts and equipment stored. Associated site works.	Conditional

Planning Register Reference No	Nature of Proposed Development	Nature of Decision by Planning Authority / An Bord Pleanála
21110	Single storey extension to the side of existing two storey house and to erect a slated hood over the existing front door, to demolish existing 9.87sqm shed to rear of site, to erect a new 21.26sqm shed to the rear of the site and all ancillary site work, Seabank Arklow.	New Application
21156	Amendment to Block I permitted under PPR 19154 consisting of a single storey extension (281sqm) and all associated site works at Avoca River Business Park Arklow.	New Application
An Bord Pleanála PL27.302556	Arklow Waste-water Treatment Plant Project which will comprise infrastructure for the WwTP including an inlet pumping station, a storm water storage tank, treatment, sludge thickening and dewatering facilities, a pump sump and tank, admin facilities. This will also include interceptor sewers, stormwater overflows and stormwater storage tank; a long sea outfall pipe; an upgrade to the existing revetment at the Old Wallboard site at Ferrybank and all associated and ancillary development works.	Granted
An Bord Pleanála PL27.307256	Provision of a 110kV gas insulated switchgear (GIS) substation, double circuit 110kV underground transmission line and associated site works within the Avoca River Park	Pending approval
An Bord Pleanála PL27.300304	Arklow Flood Relief Scheme in Arklow town, which would comprise of flood defence walls along the River Walk and South Quay, widening of the river channel downstream of Arklow Bridge, including works to the quays and slipway, dredging of the river channel upstream and downstream, provision of debris trap and gravel trap upstream of Arklow Bridge, lowering of floor of Arklow Bridge, underpinning of bridge piers and abutments and scour protection, provision of flood embankment on the north side of the river channel.	Pre-application

## Appendix 21.2

Cumulative Impact

Assessment



## Appendix 21.2 Cumulative Impact Assessment

A wide range of existing, under construction and permitted projects in the general vicinity of the proposed development were screened to determine if there was a potential for cumulative effects. The projects which were screened in are addressed below. The assessment of all environmental pathways for each screened-in project, is presented below. It is noted that in the text below “proposed development” refers to the Arklow Bank Wind Park Phase 2 Onshore Grid Infrastructure.

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
<p><b>Project 1:</b>            ABWP Phase 2            Offshore            Infrastructure</p> <p><i>EIAR in relation to longstop date extension has been submitted</i></p>	<p><b>Air Quality:</b> Considering the distance from the Arklow Bank Wind Park Phase 2 Offshore Infrastructure works to the proposed development, no significant cumulative effects are predicted during the construction phase.</p> <p>There will be maintenance trips carried out for the offshore infrastructure which may have potential for operational emissions offshore (as outlined in the Arklow Bank Wind Park Phase 2 Offshore Infrastructure EIAR), however, considering there are no significant operational emissions associated with the proposed development and given the distance to the offshore infrastructure, there are no significant cumulative air quality effects predicted during the operational phase.</p> <p><b>Climate:</b> The construction of the Tier 1 elements of the Project have the potential to have a negative cumulative effect on climate in combination with the proposed development during the construction phase due to the additional embodied carbon associated with the materials and construction traffic.</p> <p>When operational, the Tier 1 elements of the overall Arklow Bank Wind Park Phase 2 Project in combination with the proposed development will facilitate the generation of 520MW of renewable energy. This will offset 530,225 tonnes of annual carbon emissions, reduce the reliance on fossil fuels, and help to meet national and international renewable energy targets including EU ETS obligations. It will offset the potential negative cumulative effect during the construction phase and the operational emissions associated with the maintenance of the offshore infrastructure (outlined in the Arklow Bank Wind Park Phase 2 Offshore Infrastructure EIAR). Therefore, there will be a significant positive cumulative effect on climate.</p> <p><b>Land and Soils:</b> As outlined in the EIAR for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure, the development is the subject of an existing foreshore lease, which does not overlap (in terms of area) with either the proposed development or the proposed Operations and Maintenance Facility. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works.</p> <p>Considering the distance between each of these developments it is not expected there will be a cumulative demand on land and soils with the proposed development. Therefore, it is not expected that there will be cumulative effects on land and soils for the Tier 1 projects.</p> <p><b>Water:</b> As outlined in the EIAR for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure, the development is the subject of an existing Foreshore Lease, which does not overlap (in terms of area) with either the proposed development or the proposed Operations and Maintenance Facility. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>Considering the EIAR for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure concludes that there will be imperceptible impact on water and given the distance between each of these developments, it is not expected there will be any cumulative effect on water with the proposed development.</p> <p><b>Noise and Vibration:</b> The ABWP Phase 2 Offshore Infrastructure will be located approximately 6 to 13 km from the shore. There is likely to be overlap with the construction programmes for this scheme and the proposed development such that there will be interactive construction noise effects at common receptors, in particular during night-time offshore piling and onshore HDD activities affecting residential properties near to the landfill site at Johnstown. Daytime construction noise levels for the ABWP Phase 2 Offshore Infrastructure are constrained to a limit of 65 dB LAeq, 8 hour. Daytime construction noise levels at nearby receptors from onshore works are predicted to be lower than this at the nearest receptor (48dB LAeq). Should offshore piling noise levels of up to 65 dB LAeq be experienced at the nearest onshore receptor, the addition of onshore piling noise would not result in any additive effect to this limit. There will be no negative cumulative effect from these activities.</p> <p><b>Biodiversity:</b> Potential effects relate primarily to marine habitats and species. The proposed development will not impact on marine habitats or species. However, if construction activities associated with the proposed development occur at the same time as construction activities associated with the ABWP Phase 2 Offshore Infrastructure in proximity to the landfill location, and accidental pollution events were to occur at the same time and in proximity to each other, there is a risk of cumulative accidental pollution effects. With the application of the mitigation measures set out in the CEMP (<b>Appendix 6.1</b>), significant cumulative effects will not occur. Therefore, there is no pathway for cumulative impacts on biodiversity.</p> <p><b>Traffic and Transport:</b> The construction port for the storage, fabrication and delivery of offshore infrastructure has not yet been confirmed. Therefore, no detail relating to anticipated traffic movements or the port is available for this project. However, for the purpose of this report it is assumed that Arklow Port will be used as port for storage. It is likely that the majority of traffic generated from this project will access the port through Junction 21 on the M11 and will not be permitted to travel through the town centre but directed along the R772. Given the distance between this ABWP Phase 2 Offshore Infrastructure project and the proposed development, it is not likely for this project to fall within the zone of influence of the proposed development. No significant cumulative traffic impact effect is expected.</p> <p><b>Landscape and Visual:</b> The proposed ABWP Phase 2 Offshore Infrastructure will have a negligible or minor cumulative effect to landscape and visual amenity by virtue of distance between sites during the construction phase. Where views may encompass both landscape and seascape, any visible elements of the onshore development will be substantially absorbed within the more complex visual context of the rural landscape and will be substantially less noticeable than the more distinctive offshore development. The proposed development will have a negligible or minor cumulative effect by virtue of distance between sites and the offshore and onshore nature of the developments during the operational phase.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed ABWP Phase 2 Offshore Infrastructure in combination with the proposed development. This is due to the distance of the development from this project and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the likely overlap between the construction phases of the proposed development, the Arklow Bank Wind Park Phase 2 Offshore Infrastructure and the OMF there is potential for a cumulative resource and waste management effect during the construction of the proposed development. This could give rise to short term, slight resource and waste management effects due to an increased demand on waste recovery and/or</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>disposal sites. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments with regards to selecting a suitable waste recovery and/or disposal site.</p> <p>As minimal operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p>
	<p><b>Material Assets:</b> As outlined in the EIA for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure, the development is the subject of an existing foreshore lease, which does not overlap (in terms of area) with either the proposed development or the proposed Operations and Maintenance Facility. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works. Considering the distance between each of these developments it is not expected there will be a cumulative demand on services and utilities with the proposed development. Therefore, it is not expected that there will be significant cumulative effects on material assets during the construction phase for the above Tier 1 projects.</p> <p>The overall Project will have a significant long-term positive cumulative effect on renewable energy generation, during the operational phase, by providing an additional supply and reducing reliance on fossil fuels.</p>
	<p><b>Population and Human Health:</b> Given the major scale of the proposed ABWP Phase 2 Offshore Infrastructure, there is potential for cumulative effects on population and human health. However, considering there will not be significant effects from construction traffic generated from either development and the distance between the onshore and offshore works, there is no significant negative cumulative effects to population and human health predicted during the construction phase. The cumulative noise effects at the landfill from the combination of onshore HDD works and offshore piling works will not exceed noise thresholds for construction works during daytime or night-time. Therefore, there will be no significant cumulative effects in terms of noise and vibration and population and human health.</p> <p>The construction and operational phases of both developments will create employment opportunities and the associated economic and social benefits, which will have a positive cumulative effect on population and human health in the local area.</p> <p>When operational, the Tier 1 elements of the Project in combination with the proposed development will facilitate the generation of 520MW of renewable energy. This will increase supply, while reducing the reliance on fossil fuels and help to meet national and international renewable energy targets. This will have a significant positive cumulative effect on population and human health.</p>
	<p><b>Major Accidents and Disasters:</b> The EIA for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure describes the major accident and disaster risks from the offshore infrastructure works and the vulnerability of it to major accident and disaster risks. The EIA also describes the measures in place to minimise these risks and mitigate their consequences. Considering the distance between the proposed development, the Arklow Bank Wind Park Phase 2 Offshore Infrastructure and the Operations and Maintenance Facility, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development and the offshore infrastructure works, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the offshore infrastructure works and the Operations and Maintenance Facility will be vulnerable. The interface between the offshore and onshore infrastructure is the HDD at the landfill. There could be potential for cumulative effects in the vicinity of the High-Water Mark. However, the offshore works to seaward of the HDD will not increase the risks due to cliff collapse or bentonite spillage.</p>



Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
<p><b>Project 2:</b>  <i>ABWP Phase 2 Operations and Maintenance Facility (OMF)</i></p>	<p><b>Air Quality:</b> Considering the distance from the Arklow Bank Wind Park Phase 2 Operations and Maintenance Facility (OMF) to the proposed development, no significant cumulative effects are predicted during the construction phase.</p> <p>There will be maintenance trips carried out for the offshore infrastructure from the OMF which may have potential for operational emissions offshore (as outlined in the Arklow Bank Wind Park Phase 2 Offshore Infrastructure EIAR), however, considering there are no significant operational emissions associated with the proposed development and given the distance to the offshore infrastructure and OMF, there are no significant cumulative air quality effects predicted during the operational phase.</p>
<p><i>Pending Submission</i></p>	<p><b>Climate:</b> The construction of the Tier 1 elements of the Project have the potential to have a negative cumulative effect on climate in combination with the proposed development during the construction phase due to the additional embodied carbon associated with the materials and construction traffic.</p> <p>When operational, the Tier 1 elements of the overall Arklow Bank Wind Park Phase 2 Project in combination with the proposed development will facilitate the generation of 520MW of renewable energy. This will offset 530,225 tonnes of annual carbon emissions, reduce the reliance on fossil fuels, and help to meet national and international renewable energy targets including EU ETS obligations. It will offset the potential negative cumulative effect during the construction phase and the operational emissions associated with the maintenance of the offshore infrastructure (outlined in the Arklow Bank Wind Park Phase 2 Offshore Infrastructure EIAR). Therefore, there will be a significant positive cumulative effect on climate.</p>
	<p><b>Land and Soils:</b> The Operations and Maintenance Facility does not overlap with the existing foreshore lease for the offshore infrastructure or the proposed development (in terms of area). The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works.</p> <p>Considering the distance between each of these developments it is not expected there will be a cumulative demand on land and soils with the proposed development. Therefore, it is not expected that there will be cumulative effects on land and soils for the Tier 1 projects.</p>
	<p><b>Water:</b> The Operations and Maintenance Facility does not overlap with the existing foreshore lease for the offshore infrastructure or the proposed development (in terms of area). The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works.</p> <p>Considering the distance between the developments, it is not expected there will be any cumulative effect on water with the proposed development.</p>
	<p><b>Noise and Vibration:</b> The ABWP Phase 2 Operations and Maintenance Facility (OMF) is approximately 2.5 km from the nearest receptor considered in the assessment of the proposed development. Noise and vibration emissions from the OMF are unlikely to result in a negative effect at receptors near to the proposed development. Consequently, the ABWP Phase 2 OMF is not considered to cause any cumulative construction noise or vibration effects greater than the residual construction noise and vibration effects identified for the proposed development.</p>
	<p><b>Biodiversity:</b> Potential effects relate primarily to marine habitats and terrestrial ecology. However, given the nature and location of this project, no significant cumulative effects are expected to occur during both the construction and operational phases in combination with the proposed development.</p>
	<p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this ABWP Phase 2 OMF project to be located at Arklow Port. It is likely that the majority of traffic generated from this project will access the port through Junction 21 on the M11 and will not be permitted to travel through</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>the town centre but directed along the R772. Given the distance between this ABWP Phase 2 OMF project and the proposed development, it is not likely for this project to fall within the zone of influence of the proposed development. No significant cumulative traffic impact effect is expected.</p> <p><b>Landscapes and Visual:</b> The proposed OMF will be located within the harbour area of Arklow town at a distance of c. 3.0km east of the M11 motorway. It is considered that potential cumulative landscape or visual effects will be negligible by virtue of the relative locations of both development sites during both construction and operational phases.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed ABWP Phase 2 Operations and Maintenance Facility (OMF) in combination with the Arklow Bank Wind Park offshore and onshore infrastructure project. This is due to the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the likely overlap between the construction phases of the proposed development, the Arklow Bank Wind Park Phase 2 Offshore Infrastructure and the OMF there is potential for a cumulative resource and waste management effect during the construction of the proposed development. This could give rise to short term, slight resource and waste management effects due to an increased demand on waste recovery and/or disposal sites. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments with regards to selecting a suitable waste recovery and/or disposal site.</p> <p>As no operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> As outlined in the EIAR for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure, the development is the subject of an existing foreshore lease, which does not overlap (in terms of area) with either the proposed development or the proposed Operations and Maintenance Facility. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works. Considering the distance between each of these developments it is not expected there will be a cumulative demand on services and utilities with the proposed development. Therefore, it is not expected that there will be significant cumulative effects on material assets during the construction phase for the above Tier 1 projects.</p> <p>The overall Project will have a significant long-term positive cumulative effect on renewable energy generation, during the operational phase, by providing an additional supply and reducing reliance on fossil fuels.</p> <p><b>Population and Human Health:</b> Given the scale of the proposed ABWP Phase 2 OMF, there is potential for cumulative effects on population and human health. However, considering there will not be significant effects from construction traffic generated from either development and the distance between the proposed works, there is no cumulative effects to population and human health predicted during the construction phase.</p> <p>The construction and operational phases of both developments will create employment opportunities and the associated economic and social benefits, which will have a positive cumulative effect on population and human health in the local area.</p> <p>When operational, the Tier 1 elements of the Project in combination with the proposed development will facilitate the generation of 520MW of renewable energy. This will increase supply, while reducing the reliance on fossil fuels and help to meet national and international renewable energy targets. This will have a significant positive cumulative effect on population and human health.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Major Accidents and Disasters:</b> Considering the distance between the proposed development, the Arklow Bank Wind Park Phase 2 Offshore Infrastructure and the Operations and Maintenance Facility, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development and the offshore infrastructure works, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the offshore infrastructure works and the Operations and Maintenance Facility will be vulnerable.</p>
<p><b>Project 3:</b> <i>EirGrid Grid Upgrade Works</i></p>	<p><b>Air Quality:</b> Given the nature and scale of the construction activities and construction traffic associated with the EirGrid Grid upgrade works, no significant cumulative air quality effects are predicted during the construction phase.</p> <p>There are no air emission sources or operational traffic associated with the upgrade works or the proposed development, therefore no significant cumulative air quality effects are predicted during the operational phase.</p>
<p><i>Pending Submission</i></p>	<p><b>Climate:</b> The construction of the Tier 1 elements of the Project have the potential to have a negative cumulative effect on climate in combination with the proposed development during the construction phase due to the additional embodied carbon associated with the materials and construction traffic.</p> <p>When operational, the Tier 1 elements of the overall Arklow Bank Wind Park Phase 2 Project in combination with the proposed development will facilitate the generation of 520MW of renewable energy. This will offset 530,225 tonnes of annual carbon emissions, reduce the reliance on fossil fuels, and help to meet national and international renewable energy targets including EU ETS obligations. It will offset the potential negative cumulative effect during the construction phase and the operational emissions associated with the maintenance of the offshore infrastructure (outlined in the Arklow Bank Wind Park Phase 2 Offshore Infrastructure EIAR). Therefore, there will be a significant positive cumulative effect on climate.</p>
	<p><b>Land and Soils:</b> The proposed EirGrid Grid upgrade works will result in the loss of a small quantity of soil and geology. However, the cumulative loss is still considered small on a local scale. Thus, there are no likely significant direct, indirect cumulative impacts of the Eirgrid Upgrade Works in combination with the proposed development on land and soils.</p> <p>The development is located within the sand and gravel aquifer, excavations and some dewatering may be required at the site these will not interact with the impacts identified for the proposed development. Thus, there are no likely significant direct, indirect cumulative impacts of the Eirgrid Grid Upgrade Works in combination with the proposed development on hydrogeology.</p> <p>There are no likely significant direct or indirect cumulative impacts of the proposed development in combination with the Eirgrid Grid upgrade works on land, soils, geology &amp; hydrogeology during the operational phase. From a hydrogeological perspective it is also due to the location of this development from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development.</p>
	<p><b>Water:</b> It is expected that the EirGrid grid upgrade works, and the Irish Water upgrade works have the potential to impact water quality in surface waters as a result of surface water runoff washing contaminants and silt into surface water bodies. However, the CEMP for the proposed development includes surface water management measures, which outlines how surface water will be managed during construction and the measures to be taken to prevent any potentially polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development, in combination with the EirGrid upgrade works and Irish Water upgrade works. This will ensure there are no cumulative effects on water associated with Tier 1 projects during the construction phase.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in combination with the EirGrid upgrade works and Irish Water connection are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Construction works required for the EirGrid Grid Upgrade Works that will occur in proximity to the proposed development will not involve significant noise sources due to the nature of the work (stringing of overhead lines). Consequently, EirGrid Upgrade works are not considered to cause any cumulative construction noise or vibration effects greater than the residual construction noise and vibration effects identified for the proposed development.</p> <p>Given that the only operational noise from the EirGrid Grid Upgrade Works will be an intensification of noise from overhead lines, and this is unlikely to change the character or magnitude of noise in the area, these works are unlikely to result in any cumulative effect to the operational noise at selected receptors of the proposed development.</p> <p><b>Biodiversity:</b> If works are concurrent with the bulk excavation works on the site of the substation, there is potential for cumulative effects, as parts of each project are located close to each other. Should this situation arise, construction activities will be planned and phased, in consultation with the construction management team for the EirGrid Grid Upgrade Works.</p> <p>Given the location of these projects (in areas of relatively low habitat and species value), together with the implementation of best practice standard construction environmental measures, the CEMP for the proposed development as detailed, no significant cumulative effects on biodiversity will result.</p> <p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for the works associated with the EirGrid Grid Upgrade Works project. It is anticipated that there will only be minor works associated with overhead lines in the vicinity of the proposed development, with more significant substation works required at existing substations within the network (likely Ballybeg substation at a distance of 20km). The cumulative effects are therefore considered imperceptible.</p> <p><b>Landscape and Visual:</b> The proposed development will have a negligible or minor cumulative effect to landscape and visual amenity during the construction and operational phases as the EirGrid grid upgrade works will upgrade existing or similar infrastructure in the area.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed EirGrid Grid Upgrade Works in combination with the proposed development. This is due to the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> It is assumed for the purposes of this assessment that the EirGrid grid upgrade works will be undertaken in parallel with the proposed development works which would have the potential for cumulative effects to resource and waste management. However, considering the nature and scale of the construction works involved, the cumulative effects to resource and waste management are expected to be not significant during the construction phase. Having regard to the imperceptible resource and waste management effect of the proposed development during the operational phase, no likely negative significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p> <p><b>Material Assets:</b> It is assumed for the purposes of this assessment that the EirGrid grid upgrade works will be undertaken in parallel with the proposed development works. The EirGrid grid upgrade works will ensure there is enough capacity to meet the demands of the proposed development. This will ensure there are no cumulative effects on material assets associated with Tier 1 projects during operation.</p>

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	<p><b>Population and Human Health:</b> Given the nature and scale of the proposed EirGrid Grid Upgrade Works in the vicinity of the proposed development, in terms of both construction activities and duration, there is minimal potential for cumulative effects on population and human health. No significant cumulative effects are predicted during the construction phase. The elements of the EirGrid Grid Upgrade Works at a distance from the proposed development are considered not likely to have an effect on population and human health. In terms of electromagnetic fields, the additional contribution from the proposed development to the EirGrid grid upgrade works, can be regarded as having a negligible effect on the cumulative levels.</p> <p>When operational, the Tier 1 elements of the Project in combination with the proposed development will facilitate the generation of 520MW of renewable energy. This will increase supply, while reducing the reliance on fossil fuels and help to meet national and international renewable energy targets. This will have a significant positive cumulative effect on population and human health. With respect to electromagnetic fields, the additional contribution from the proposed development to the EirGrid grid upgrade works, when both are operational, can be regarded as having a negligible effect on the cumulative levels.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature of the works required for the EirGrid grid upgrade works and the potential low risk scenarios associated with the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the EirGrid upgrade works will be vulnerable. The proposed development together with the EirGrid grid upgrade works is not expected to increase the risk of a major accident or disasters</p>
<p><b>Project 4:</b> <i>Irish Water Upgrade Works</i></p> <p><i>Pending Submission</i></p>	<p><b>Air Quality:</b> Given the nature and scale of the construction activities and construction traffic associated with the Irish Water watermain upgrade works, no significant cumulative air quality effects are predicted during the construction phase.</p> <p>There are no air emission sources or operational traffic associated with the watermain upgrade works or the proposed development, therefore no significant cumulative air quality effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Irish Water watermain upgrade works there are negligible carbon emissions associated with its development in terms of macro-scale carbon contribution. Therefore, the Irish Water watermain upgrade works are not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The proposed Irish Water upgrade works will result in the loss of a small quantity of soil and geology. However, the cumulative loss is still considered small on a local scale. Thus, there are no likely significant cumulative effects from the Irish Water upgrade works in combination with the proposed development on land and soils. From a hydrogeological perspective it is also due to the location of this development from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development.</p> <p>There are no likely significant cumulative effects from the proposed development in combination with the Irish Water upgrade works on land and soils during the operational phase.</p> <p><b>Water:</b> It is expected that the EirGrid grid upgrade works, and the Irish Water upgrade works have the potential to impact water quality in surface waters as a result of surface water runoff washing contaminants and silt into surface water bodies. However, the CEMP for the proposed development includes surface water management measures, which outlines how surface water will be managed during construction and the measures to be taken to prevent any potentially</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development, in combination with the EirGrid upgrade works and Irish Water upgrade works. This will ensure there are no cumulative effects on water associated with Tier 1 projects during the construction phase.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in combination with the EirGrid upgrade works and Irish Water upgrade works are not expected to be significant.</p> <p><b>Noise and Vibration:</b> The small-scale construction works required for the Irish Water watermain upgrade will not involve significant noise and vibration effects due to the nature of the work. Therefore, it is not expected that the Irish Water upgrade works will cause any significant cumulative noise or vibration effects in combination with the proposed development during the construction phase.</p> <p>There will be no operational noise associated with the Irish Water upgrade works, therefore there is no cumulative operational noise and vibration effects expected in combination with the proposed development.</p> <p><b>Biodiversity:</b> If the Irish Water upgrade works are concurrent with the bulk excavation works on the site of the substation, there is potential for cumulative effects, as the sites are located close to each other. Should this situation arise, construction activities will be planned and phased, in consultation with the construction management team for the scheme.</p> <p>Given the location of these projects (in areas of relatively low habitat and species value), together with the implementation of best practice standard construction environmental measures, the CEMP for the proposed development as detailed, no significant cumulative effects on biodiversity will result.</p> <p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available. The water main runs from Arklow Town in a north-westerly direction towards Shelton Abbey. The upgrade is approx. 2.3km from R772 to Shelton Abbey. It is likely that the majority of traffic generated from this project will access the construction area through Junction 21 on the M11 and will not be permitted to travel through the town centre but directed along the R772. No significant cumulative traffic impact effect is expected.</p> <p><b>Landscape and Visual:</b> The proposed development will have a negligible or minor cumulative effect to landscape or visual amenity as the ABWP Phase 2 Upgrade Work will upgrade existing and similar infrastructure in the area.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Irish Water upgrade works in combination with the proposed development. This is due to the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> It is assumed for the purposes of this assessment that the Irish Water upgrade works will be undertaken in parallel with the proposed development works which would have the potential for cumulative effects to resource and waste management. However, considering the nature and scale of the construction works involved, the cumulative effects to resource and waste management are expected to be not significant during the construction phase. Having regard to the imperceptible resource and waste management effect of the proposed development during the operational phase, no likely negative significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p>

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	<p><b>Material Assets:</b> It is assumed for the purposes of this assessment that the Irish Water watermain upgrade works will be undertaken in parallel with the proposed development works. The Irish Water watermain upgrade works will provide the potable water connection to the proposed development which will ensure there is enough capacity to meet the demands of the proposed development. This will ensure there are no cumulative effects on material assets associated with Tier 1 projects during operation.</p> <p><b>Population and Human Health:</b> Given the nature and scale of the proposed Irish Water Upgrade Works, in terms of both construction activities and duration, there is minimal potential for cumulative effects on population and human health. No significant negative cumulative effects are predicted during the construction phase. The construction phase of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction phase.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature of the works required for the Irish Water watermain upgrade works and the potential low risk scenarios associated with the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the Irish Water watermain upgrade works will be vulnerable. The proposed development together with the Irish Water upgrade works is not expected to increase the risk of a major accident or disasters.</p>
<p><b>Project 5:</b> <i>Arklow Wastewater Treatment Plant Permitted</i></p>	<p><b>Air Quality:</b> Given the distance from the Arklow WwTP to the proposed development, there are no significant cumulative air quality effects predicted during the construction phase. As there are no air emission sources or operational traffic associated with the proposed development, and the distance from the Arklow WwTP to the proposed development, there are no significant cumulative air quality effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Arklow WwTP there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Arklow WwTP is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The proposed Arklow WwTP will result in the loss of a small quantity of soil and geology and will also require limited excavation of soft soils involving excavation and replacement. The development is proposed in an area of made ground. As outlined in the EIAR, there will be mitigation measures in place to capture and safely dispose of any contaminated material due to previous site use and any contaminated material will be recycled or disposed of at a suitably licensed facility. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils from the Arklow WwTP in combination with the proposed development. There are no likely significant cumulative effects to land and soils from the proposed development in combination with the Arklow WwTP during the operational phase, given the distance between the developments.</p> <p><b>Water:</b> The Arklow Wastewater Treatment Plant (WwTP) Project and the proposed development will both maintain and implement a site-specific Construction Environmental Management Plan (CEMP) during the construction phase. The CEMPs outline how surface water will be managed during construction and the measures to be taken to prevent any potentially polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development, in combination with the Arklow WwTP project.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>The proposed Arklow WwTP would significantly improve the Avoca River water quality during operation and is therefore considered to have a long term significant positive effect on surface water quality. The substation site of the proposed development will be capped with hard standing and site buildings and as part of the remedial strategy a Geosynthetic Clay Liner (GCL) will be installed across the site associated with contaminated made ground. This will prevent rainwater from infiltrating into the contaminated material located beneath the footprint of the site and therefore limit the mobilisation of any contamination from the substation site to adjacent surface waterbodies, namely the Avoca River and Shelton Abbey watercourse. As a result, the operational phase is considered to have a long term slight positive effect on water quality.</p> <p>Therefore, the cumulative effects arising from the operation phases of the Arklow Wastewater Treatment Plant and the proposed development on water quality will be positive.</p>
	<p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p>
	<p><b>Biodiversity:</b> The proposed new Arklow WwTP will discharge the treated effluent to sea, via a 900m long sea outfall. Given that no significant effect on water quality is predicted from the proposed project, no significant cumulative effects on water quality, habitats and species are expected to occur. Therefore, there is no significant cumulative effect to biodiversity predicted in combination with the proposed development.</p>
	<p><b>Traffic and Transport:</b> The construction of Arklow WwTP is expected to increase traffic flows on the Ferrybank Road in Arklow town (R772 Dublin Road river crossing connecting Arklow to Junction 20 on the M11) by less than 5% during the peak hour periods, and by less than 3% on an all-day basis. The temporary increase in traffic volumes from this project will have limited impact on the performance of roads located within the zone of influence of the proposed development and will be not significant. There is no operational cumulative effect expected as there will be no significant operational traffic from the proposed development.</p>
	<p><b>Landscape and Visual:</b> The permitted Arklow WwTP project is located within the urban area of Arklow town at a distance of c. 1.5km to 3.0km east of the M11 motorway. It is considered that potential cumulative landscape or visual effects will be negligible by virtue of relative locations of both development sites.</p>
	<p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Arklow WwTP in combination with the proposed development. This is due to the distance of the development from this project and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p>
	<p><b>Resource and Waste Management:</b> Given the likely overlap between the construction phases of the Arklow WwTP and the proposed development there is potential for a cumulative resource and waste management effect during the construction of the proposed development. This could give rise to short term, slight resource and waste management effects due to an increased demand on waste recovery and/or disposal sites.</p> <p>Considering the imperceptible resource and waste management effect of the proposed development during the operational phase, no negative likely significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p>



Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Material Assets:</b> Considering the distance between the developments there is no cumulative effects predicted in terms of material assets during the construction phase. The operation of the proposed development is expected to have a positive effect on material assets in terms of increasing energy supply in the local area. The operation of the Arklow WwTP will increase the capacity for foul sewerage in the area. Both developments will allow for further expansion and growth in the area by having a positive cumulative effect on material assets. Given the location of the Arklow WwTP vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the scale of this project, in terms of construction activities, there is potential for cumulative effects on population and human health. However, given the distance from the proposed development, no significant negative cumulative effects are predicted. The construction phase of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health.</p> <p>The operation of the proposed development is expected to have a positive effect on population and human health in terms of increasing energy supply in the local area. The operation of Arklow Wastewater Treatment Plant will increase the capacity for foul wastewater treatment in the area, to 36,000 population equivalent (PE). Both developments will allow for further expansion and growth in the area, which will help to meet the objectives of the Arklow Local Area Plan (LAP) 2018-2024. Therefore, there is potential for a significant positive cumulative effect on population and human health in combination with the proposed development.</p> <p><b>Major Accidents and Disasters:</b> Considering the distance and well developed existing environment between the Arklow WwTP and the proposed development, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for both projects (as outline in the Arklow WwTP EIAR), no plausible potential major accidents and disasters have been identified, to which the proposed development together with the Arklow WwTP project will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the Arklow WwTP, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 6:</b>  <i>BNRG Neon Holdings Limited Solar Farm Johnstown North Permitted</i></p>	<p><b>Air Quality:</b> Given the nature and scale of the construction activities associated with the solar farm development, there are no significant cumulative air quality effects predicted during the construction phase.</p> <p>There are no air emission sources or operational traffic associated with the proposed development, therefore there are no significant cumulative air quality effects predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the solar farm development there are negligible carbon emissions associated with its development in terms of macro-scale carbon contribution.</p> <p>When operational, the solar farm in combination with the proposed development, as well as a number of new solar farms that are in development in the area, will facilitate additional renewable energy sources which will reduce the reliance on fossil fuels, and help to meet national and international renewable energy targets. It will offset the potential negative cumulative effect during the construction phase and will therefore have a significant positive cumulative effect on climate.</p> <p><b>Land and Soils:</b> The BNRG Neon Holdings Limited Solar Farm at Johnstown North will result in the loss of a small quantity of soil. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase. There are no likely significant cumulative effects to land and soils from the proposed development in combination with the BNRG Neon Holdings Limited Solar Farm Johnstown North during the operational phase.</p>
	<p><b>Water:</b> The proposed development BNRG Neon Holdings Limited Solar Farm Johnstown North borders the landfill site of the proposed development. The solar farm is located to the north west of the watercourse which flows through the landfill site. Therefore, it has been noted that the Solar farm at Johnstown North and the proposed development sites are hydrologically linked. Considering the mitigation measures to be applied during the construction phase of the proposed development, no significant cumulative effects in relation to water and hydrology have been identified during the construction phase of the solar farm in combination with the proposed development.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the BNRG Neon Holdings Limited Solar Farm at Johnstown North, are not expected to be significant.</p>
	<p><b>Noise and Vibration:</b> The BNRG Solar Farm Johnstown development is due to be constructed between 2021 and 2024. The development is closest to receptor R12. Construction works for the BNRG Solar Farm Johnstown development close to residential dwellings are predicted to have a negative effect but will only occur at close distances for a short duration (up to a week) and therefore will not have a significant effect. Consequently, it is considered that cumulative effects due to construction noise and vibration are unlikely to be greater than the residual construction noise and vibration effects identified for the proposed development.</p>
	<p><b>Biodiversity:</b> Considering the nature of the works and the distance involved, a temporary, not significant effect due to noise and disturbance could potentially arise in combination with the proposed development. Therefore, there is no significant cumulative effect to biodiversity predicted during the construction phase. Following completion of construction works no cumulative effect will occur.</p>
	<p><b>Traffic and Transport:</b> The construction of both BNRG Neon Holdings Ltd solar farms are expected to result in 48 LV trips/day (96 LV trips during peak construction) and 31 HGV trips/day. These trips will be divided almost evenly between the existing cul-de-sac on Junction 20 on the M11 (Location 3, refer to Figure 13.3) and R772 Dublin Road connecting junction 20 and the L95115 Road (north of Location 4 on Figure 13.3). Considering the traffic volumes on these links, the temporary increase in traffic from these projects will be not significant. There is no operational cumulative effects predicted as there will be no significant operational traffic from the proposed development.</p>
	<p><b>Landscape and Visual:</b> The proposed development will have a negligible or minor, localised cumulative effects to landscape and visual amenity with the proposed solar farm developments as the solar farms lie adjacent to the cable route which is underground, and are separated from the above ground structures at the substation site and NETN connection by some distance.</p>
	<p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed BNRG Neon Holdings Limited Solar Farm Johnstown North in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the solar farm and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> In the event construction of the solar farm development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from both projects, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase and the nature of the operations associated with the solar farm development no significant cumulative effects on services and utilities are predicted.</p> <p>Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of the BNRG Neon Holdings Ltd Solar Farm in Johnstown North, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health in the local area.</p> <p>When operational, the solar farm in combination with the proposed development, as well as a number of new solar farms that are in development in the area, will facilitate renewable energy generation which will reduce the reliance on fossil fuels, helping to meet national and international targets in line with Arklow LAP and Wicklow County Development Plan 2016-2022. As such, there is the potential for a significant positive cumulative effect on population and human health.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the solar farm will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the solar farm, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 7:</b>  <i>BNRG Neon Holdings Limited Solar Farm Ballymoney Permitted</i></p>	<p><b>Air Quality:</b> Given the nature and scale of the construction activities associated with the solar farm development, there are no significant cumulative air quality effects predicted during the construction phase.</p> <p>There are no air emission sources or operational traffic associated with the proposed development, therefore there are no significant cumulative air quality effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the solar farm development there are negligible carbon emissions associated with its development in terms of macro-scale carbon contribution.</p> <p>When operational, the solar farm in combination with the proposed development, as well as a number of new solar farms that are in development in the area, will facilitate additional renewable energy sources which will reduce the reliance on fossil fuels, and help to meet national and international renewable energy</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>targets. It will offset the potential negative cumulative effect during the construction phase and will therefore have a significant positive cumulative effect on climate.</p>
	<p><b>Land and Soils:</b> The BNRG Neon Holdings Limited Solar Farm at Ballymoney will result in the loss of a small quantity of soil. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase. There are no likely significant cumulative effects to land and soils from the proposed development in combination with the BNRG Neon Holdings Limited Solar Farm Ballymoney during the operational phase.</p>
	<p><b>Water:</b> The BNRG Neon Holdings Limited Solar Farm Ballymoney lies within 200m of the proposed cable route. It has been noted that the Solar farm at Ballymoney and the proposed development are hydrologically linked through their proximity to the Johnstown North watercourse. Considering the mitigation measures to be applied during the construction phase of the proposed development, no significant cumulative effects in relation to water and hydrology have been identified during the construction phase of the solar farm in combination with the proposed development. As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the BNRG Neon Holdings Limited Solar Farm development at Ballymoney, are not expected to be significant.</p>
	<p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p>
	<p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p>
	<p><b>Traffic and Transport:</b> The construction of both BNRG Neon Holdings Ltd solar farms are expected to result in 48 LV trips/day (96 LV trips during peak construction) and 31 HGV trips/day. These trips will be divided almost evenly between the existing cul-de-sac on Junction 20 on the M11 (Location 3, refer to Figure 13.3) and R772 Dublin Road connecting junction 20 and the L95115 Road (north of Location 4 on Figure 13.3). Considering the traffic volumes on these links, the temporary increase in traffic from these projects will be not significant. There is no operational cumulative effects predicted as there will be no significant operational traffic from the proposed development.</p>
	<p><b>Landscape and Visual:</b> The proposed development will have a negligible or minor, localised cumulative effects to landscape and visual amenity with the proposed solar farm developments as the solar farms lie adjacent to the cable route which is underground, and are separated from the above ground structures at the substation site and NETN connection by some distance.</p>
	<p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed BNRG Neon Holdings Limited Solar Farm Ballymoney in combination</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the solar farm and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> In the event construction of the solar farm development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from both projects, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase and the nature of the operations associated with the solar farm development no significant cumulative effects on services and utilities are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the relatively small scale of the BNRG Neon Holdings Ltd Solar Farm in Ballymoney, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for negative cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health in the local area. When operational, the solar farm in combination with the proposed development, as well as a number of other new solar farms that are in development in the area, will facilitate renewable energy generation which will reduce the reliance on fossil fuels, helping to meet national and international targets in line with Arklow LAP and Wicklow County Development Plan 2016-2022. As such, there is the potential for a significant positive cumulative effect on population and human health.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the solar farm will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the solar farm, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 8:</b>  <i>Highfield Solar Limited Ballinaclea Lower Permitted</i></p>	<p><b>Air Quality:</b> Given the nature and scale of the construction activities associated with the solar farm development, there are no significant cumulative air quality effects predicted during the construction phase. There are no air emission sources or operational traffic associated with the proposed development, therefore there are no significant cumulative air quality effects predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the solar farm development there are negligible carbon emissions associated with its development in terms of macro-scale carbon contribution. When operational, the solar farm in combination with the proposed development, as well as a number of new solar farms that are in development in the area, will facilitate additional renewable energy sources which will reduce the reliance on fossil fuels, and help to meet national and international renewable energy</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>targets. It will offset the potential negative cumulative effect during the construction phase and will therefore have a significant positive cumulative effect on climate.</p> <p><b>Land and Soils:</b> The proposed Highfields Solar Ltd solar farm at Ballinclea Lower will result in the loss of a small quantity of soil. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase.</p> <p>There are no likely significant cumulative effects to land and soils from the proposed development in combination with the Highfield Solar Ltd solar farm at Ballinclea Lower during the operational phase.</p> <p><b>Water:</b> The proposed Highfield Solar Limited development lies adjacent to the proposed cable route. It has been noted that the solar farm and the proposed development are hydrologically linked as the Templenary watercourse flows through both Highfield Solar Limited developments. Considering the mitigation measures to be applied during the construction phase of the proposed development, no significant cumulative effects in relation to water and hydrology have been identified during the construction phase of the solar farm in combination with the proposed development.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Highfield Solar Development, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p> <p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this Highfield Solar Limited projects. However, based on the description of the works and the level of traffic generation anticipated for the BNRG solar farm above (with a similar size of development), the level of traffic generated during construction works will be negligible. The traffic attributed to this project is most likely to use the R772 Dublin Road. Considering the traffic volumes on this link, the temporary increase in traffic from this project will be not significant. There is no operational cumulative effect predicted as there is no significant operational traffic from the proposed development.</p> <p><b>Landscape and Visual:</b> The proposed development will have a negligible or minor, localised cumulative effects to landscape and visual amenity with the proposed solar farm development as the solar farms lie adjacent to the cable route which is underground, and are separated from the above ground structures at the substation site and NETN connection by some distance.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Highfield Solar Limited in combination with the proposed development.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the solar farm and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> It is expected that the construction works for the solar farm will be completed before the commencement of the construction of the proposed development. However, in the event the construction of the solar farm development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from both projects, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase and the nature of the operations associated with the solar farm development no significant cumulative effects on services and utilities are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the relatively small scale of the Highfield Solar Ltd in Ballinclea Lower, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for negative cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health in the local area.</p> <p>When operational, the solar farm in combination with the proposed development, as well as a number of other new solar farms that are in development in the area, will facilitate additional renewable energy sources which will increase supply as well as reduce the reliance on fossil fuels, helping to meet national and international targets. As such, there is the potential for a significant positive cumulative effect on population and human health.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the solar farm will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the solar farm, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 9:</b>  <i>Highfield Solar Limited</i>  <i>Templerainy East</i>  <i>Permitted</i></p>	<p><b>Air Quality:</b> Given the nature and scale of the construction activities associated with the solar farm development, there are no significant cumulative air quality effects predicted during the construction phase.</p> <p>There are no air emission sources or operational traffic associated with the proposed development, therefore there are no significant cumulative air quality effects predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the solar farm development there are negligible carbon emissions associated with its development in terms of macro-scale carbon contribution.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>When operational, the solar farm in combination with the proposed development, as well as a number of new solar farms that are in development in the area, will facilitate additional renewable energy sources which will reduce the reliance on fossil fuels, and help to meet national and international renewable energy targets. It will offset the potential negative cumulative effect during the construction phase and will therefore have a significant positive cumulative effect on climate.</p>
	<p><b>Land and Soils:</b> The proposed Highfields Solar Ltd solar farm at Templerainy East will result in the loss of a small quantity of soil. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase. There are no likely significant cumulative effects to land and soils from the proposed development in combination with the Highfield Solar Ltd solar farm at Templerainy East during the operational phase.</p>
	<p><b>Water:</b> The proposed Highfield Solar Limited development lies adjacent to the proposed cable route. It has been noted that the solar farm and the proposed development are hydrologically linked as the Templerainy watercourse flows through both Highfield Solar Limited developments. Considering the mitigation measures to be applied during the construction phase of the proposed development, no significant cumulative effects in relation to water and hydrology have been identified during the construction phase of the solar farm in combination with the proposed development. As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Highfield Solar Development, are not expected to be significant.</p>
	<p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p>
	<p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p>
	<p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this Highfield Solar Limited projects. However, based on the description of the works and the level of traffic generation anticipated for the BNRG solar farm above (with a similar size of development), the level of traffic generated during construction works will be negligible. The traffic attributed to this project is most likely to use the R772 Dublin Road. Considering the traffic volumes on this link, the temporary increase in traffic from this project will be not significant. There is no operational cumulative effect predicted as there is no significant operational traffic from the proposed development.</p>
	<p><b>Landscape and Visual:</b> The proposed development will have a negligible or minor, localised cumulative effects to landscape and visual amenity with the proposed solar farm developments as the solar farms lie adjacent to the cable route which is underground, and are separated from the above ground structures at the substation site and NETN connection by some distance.</p>



Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Highfield Solar Limited in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the solar farm and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> It is expected that the construction works for the solar farm will be completed before the commencement of the construction of the proposed development. However, in the event the construction of the solar farm development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from both projects, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase and the nature of the operations associated with the solar farm development no significant cumulative effects on services and utilities are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the relatively small scale of the Highfield Solar Ltd in Templarney East, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for negative cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health in the local area.</p> <p>When operational, the solar farm in combination with the proposed development, as well as a number of other new solar farms that are in development in the area, will facilitate additional renewable energy sources which will increase supply as well as reduce the reliance on fossil fuels, helping to meet national and international targets. As such, there is the potential for a significant positive cumulative effect on population and human health.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the solar farm will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the solar farm, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 10:</b> <i>Rappel Enterprises Limited</i></p>	<p><b>Air Quality:</b> Considering the close proximity of the Rappel Enterprises Ltd development to the proposed development and the potential overlap of construction phases, there is potential for cumulative effects on air quality to arise during the construction phase. Given the nature and scale of the construction activities and construction traffic associated with the Rappel Enterprises Ltd development, no significant cumulative air quality effects are predicted during the construction phase.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
Permitted	<p>As there are no significant operational traffic volumes or operational emissions associated with the proposed development there are no cumulative effects to air quality expected during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Rappel Enterprises Ltd development there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Rappel Enterprises Ltd development is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> Rappel Enterprises Ltd is one of a number of developments within the vicinity of the Avoca River Business Park. The substation works that are to be carried out are on a raised platform level with only localised excavation. This, together with the nature and scale of the other projects within the vicinity of the Avoca River Business Park, means that these projects in combination with the proposed substation will have no likely significant cumulative effect on land and soils during the construction phase.</p> <p>There are no significant cumulative effects on land and soils predicted during operation.</p> <p><b>Water:</b> Rappel Enterprises Ltd is one of a number of developments within the vicinity of the Avoca River Business Park. No significant impacts are likely following the implementation of appropriate mitigation measures and adherence to the CEMP for the proposed development. Thus, there are no likely significant cumulative effects from the proposed Rappel Enterprises Ltd development in combination with the proposed development in relation to water and hydrology during construction.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Rappel Enterprises Ltd development, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Rappel Enterprises Industrial Unit project is proposed to have a building located between the onshore 220kV substation site and a receptor (approximately 150 m away from the receptor). Due to likely construction activities, noise is unlikely to be an issue from this scheme. Consequently, it is considered that cumulative effects due to construction noise are unlikely to be greater than the residual construction noise and vibration effects identified for the proposed development.</p> <p>Due to the likely operational activities (light industry), noise is unlikely to be an issue from this scheme. Consequently, it is considered that cumulative effects due to operational noise are unlikely to be greater than the residual operational effects identified for the proposed development.</p> <p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the limited scope of the project and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> The Rappel Enterprises Limited facility is part of multiple projects planned at the Avoca River Business Park. No detail relating to anticipated traffic movements is available for this proposed office development however, based on the description of the works and standards provided by Wicklow County Council for the operational phase, traffic during operation is expected to be higher than traffic during construction. Based on the project floor area, this project is assumed to result in roughly 65 LV trips/day during its operational phase.</p> <p>At a wider level, the construction of this project simultaneously with projects planned at the same location will result in greater traffic flows, including heavy goods vehicles on the R772 Dublin Road, the L2180 Beech Road and the L6179 Kilbride road. The developments with overlapping construction durations</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>within the vicinity of the Avoca River Business Park will co-ordinate construction traffic management plans which will be prepared and agreed with Wicklow County Council. This will result in short-term, negative but not significant cumulative effects.</p> <p>As no significant operational traffic is expected from the proposed development there is no cumulative effects to traffic expected during the operational phase.</p> <p><b>Landscapes and Visual:</b> Considering the relative scale of the Rappel Enterprises Ltd development, the nature of both developments and the character of the receiving environment within an industrial setting the proposed development will have a negligible or minor cumulative effect to landscape and visual amenity during the construction and operational phases.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Rappel Enterprises Ltd in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> The Rappel Enterprises Ltd development is one of a number of developments within the vicinity of the Avoca River Business Park. Therefore, there is potential for an increase in demand on resource and waste management during the construction phase, when these developments are considered cumulatively. However, given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region the cumulative effects to resource and waste management are expected to be minor, temporary, negative during the construction phase. Taking into consideration the imperceptible resource and waste management effect of the proposed development during the operational phase, no likely significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p> <p><b>Material Assets:</b> The Rappel Enterprises Ltd development is one of a number of developments within the vicinity of the Avoca River Business Park. Therefore, given the proximity to the proposed development, in the event construction of the Rappel Enterprises Ltd development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services and utilities no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase there are no significant cumulative effects on services and utilities predicted. Given the nature and scale of the Rappel Enterprises Ltd development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of this project, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction and operational phases.</p> <p><b>Major Accidents and Disasters:</b> Considering the proximity to the proposed substation and that it is assumed for the purposes of this assessment that the construction durations overlap there is the potential for a major road accident to occur. However, given the limited construction traffic associated with the proposed development, the implementation of the Construction Traffic Management Plan, which is included in the CEMP, requiring the contractor to coordinate with the other construction projects in the area, no significant cumulative effects have been identified which would result in the proposed development, together with this project being vulnerable to or causing a major accident and disaster.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>Considering the nature and scale of the Rappel Enterprises Ltd no incidents have been identified, which would result in the proposed development, together with this project, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 11:</b> <i>MaZo Architecture</i>  <i>Permitted</i></p>	<p><b>Air Quality:</b> Given the nature of the works and the distance from the MaZo Architecture development to the proposed development, no significant cumulative effects are predicted during the construction phase. As there are no changes in traffic volumes and no air emission sources associated with the operation of the proposed development, no significant cumulative effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the MaZo Architecture development there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the MaZo Architecture development is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The MaZo Architecture development will result in the loss of a small quantity of soil. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase. There are no likely significant cumulative effects to land and soils from the proposed development in combination with the MaZo Architecture development during the operational phase.</p> <p><b>Water:</b> The MaZo Architecture development is located over 500m south east of the proposed development and south of the Avoca River. The MaZo Architecture development and the proposed development are not hydrologically linked. The CEMP for the proposed development includes surface water management measures, which outlines how surface water will be managed during construction and the measures to be taken to prevent any potentially polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development in combination with the MaZo Architecture development. As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the MaZo Architecture development at Lamberton, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p> <p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the limited scope of the project, the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this MaZo Architecture project. However, given the distance between this project and the proposed development, it is not likely for this project to fall within the zone of influence of the proposed development. Construction vehicles are most likely to access the project site through Junction 21 on the M11. The temporary increase in traffic will be imperceptible. There is no operational cumulative effect predicted as there will be no significant operational traffic generated from the proposed development.</p> <p><b>Landscapes and Visual:</b> Considering the nature of both developments and the relative locations of the developments there will be a negligible or minor cumulative effect to landscape and visual amenity during the construction and operational phases.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed MaZo Architecture in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the MaZo Architecture development and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> In the event the construction of the MaZo Architecture development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the distance from the proposed development and the existing capacity of local services, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase no significant cumulative effects are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of this project, in terms of both construction activities and construction traffic, as well as the distance from the proposed development, it is not predicted that there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction phase of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction phase. There are no significant cumulative effects to population and human health predicted during the operational phase.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the MaZo Architecture development will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the MaZo Architecture development, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<b>Project 12:</b>	<p><b>Air Quality:</b> As outlined in the Crag Digital Avoca Ltd data centre EIAR, there is potential for cumulative effects to arise due to the construction works which have the potential to generate construction dust. However, considering the dust mitigation measures outlined for both the Crag Digital Avoca Ltd development (as included in the EIAR) and the proposed development, it is not likely to give rise to any significant effects.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
Crag Digital Avoca Limited Data Centre	During the operational phase there will be gas engines and diesel-fuelled back-up generator sets in the data centre. However, as there are no air emissions associated with the operation of the proposed development, no significant cumulative effects are predicted.
Permitted	<p><b>Climate:</b> Given the nature and scale of the Crag Digital Avoca Ltd datacentre there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Crag Digital Avoca Ltd datacentre is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The Crag Digital Avoca Ltd data centre is one of a number of developments within the vicinity of the Avoca River Business Park. The substation works that are to be carried out are on a raised platform level with only localised excavation. Sure Partners Limited will ensure co-ordination with Crag Digital Avoca Ltd for the duration of the construction works to minimise any potential effects. This, together with the nature and scale of the projects within the vicinity of the Avoca River Business Park, means that these projects in combination with the proposed substation will have no likely significant cumulative effect on land and soils during the construction phase.</p> <p>There are no significant cumulative effects on land and soils predicted during operation.</p> <p><b>Water:</b> Impacts to the water environment have the potential to occur during the construction phase of the Crag Digital Avoca Ltd data centre development and impact surface waters. The EIAR for the Crag Digital Avoca Ltd data centre development notes that potential impacts on water during the construction phase includes sedimentation, accidental spills and leaks. Mitigation measures are proposed during the construction phase to ensure no significant impact on the water environment. During construction of the proposed development there will be the potential for the surface water runoff to wash contaminants into the existing drainage system and watercourses. Similarly, runoff from material storage areas and vehicles could mobilise pollutants into the surface water system.</p> <p>No significant impacts are likely following the implementation of appropriate mitigation measures and adherence to the mitigation measures for both projects. Thus, there are no likely significant direct or indirect cumulative impacts of the proposed Crag Data Centre development in combination with the proposed development in relation to water and hydrology.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Crag Digital Avoca Ltd Data Centre, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> The Crag Digital Avoca Limited Data Centre EIAR concludes that construction phase noise and vibration will result in no significant effects on nearby sensitive receptors. The use of the mitigation measures detailed within the Crag Digital Avoca Ltd Data Centre EIAR noise chapter and those proposed for the proposed development would reduce any cumulative effects as far reasonably practicable. Consequently, it is considered that cumulative effects due to construction noise and vibration are unlikely to be greater than the residual construction noise and vibration effects identified for the OGI development.</p> <p>To address cumulative noise effects with the Crag Digital Avoca Ltd Data Centre permitted application, noise mitigation is required as part of the onshore 220kV substation detailed design in order to avoid exceeding the NG4 criteria at surrounding receptors. The cumulative operational noise predictions above show that noise levels are likely to be at or below the NG4 criteria at all receptors during all periods and therefore are unlikely to lead to a significant negative effect. There are some cases where the cumulative levels are higher than the pre-existing background noise level, notably during night-time and, therefore, may lead to an adverse impact at these receptors. Given the context of low background levels, low ambient noise levels and low predicted operational noise levels however, the negative effect is not considered to be significant.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Biodiversity:</b> If the Crag Digital Avoca Ltd Data Centre works are concurrent with the bulk excavation works on the site of the proposed substation, there is potential for cumulative effects, as the sites are located close to each other. Should this situation arise, construction activities will be planned and phased, in consultation with the construction management team for the scheme.</p> <p>During the construction and operational phase the project has sufficient physical separation from the site of the proposed development to reduce the potential for cumulative noise and vibration effects and surface water effects to a negligible level.</p> <p>Discharges from both this project and the proposed development are governed by strict limits to ensure compliance with quality standards. No long-term cumulative impact on water quality will occur.</p> <p>Given the location of these projects (in areas of relatively low habitat and species value), together with the implementation of good practice standard construction environmental measures, the CEMP for the proposed development as detailed, no significant cumulative effects on biodiversity will result.</p> <p>Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> The Crag Digital Avoca Limited Data Centre is part of multiple projects planned at the Avoca River Business Park. The construction phase of this project will result in a maximum of 320 LV trips/day and a maximum of 46 HGVs trips/day. This will only be for one month and then the total number of site operatives will reduce significantly during the remaining months of construction.</p> <p>At a wider level, the construction of this project simultaneously with projects planned at the same location will result in greater traffic flows, including heavy goods vehicles on the R772 Dublin Road, the L2180 Beech Road and the L6179 Kilbride road. The developments with overlapping construction durations within the vicinity of the Avoca River Business Park will co-ordinate construction traffic management plans which will be prepared and agreed with Wicklow County Council. This will result in short-term, negative but not significant cumulative effects.</p> <p>As no significant operational traffic is expected from the proposed development there is no cumulative effects to traffic expected during the operational phase.</p> <p><b>Landscape and Visual:</b> The Crag Digital Avoca Ltd data centre development will have a substantially larger footprint than the substation and will be characterised as a large scale and enclosed high-tech building facility with smaller scale ancillary components. The proposed data centre development will represent a greater intensification of industrial development at the Avoca River Business Park as perceived and viewed primarily from along the Vale Road and from the M11 overbridge.</p> <p>The Crag Digital Avoca Ltd data centre will have a negligible cumulative effect to landscape and visual amenity in combination with the proposed development by virtue of relative locations of both development sites within the established industrial lands within the low lying and generally secluded valley setting.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Crag Digital Avoca Ltd Data Centre in combination with the proposed development. This is due to the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> The Crag Digital Avoca Ltd development is one of a number of developments within the vicinity of the Avoca River Business Park. Therefore, there is potential for an increase in demand on resource and waste management during the construction phase, when these developments are considered cumulatively. However, given the existing capacity of waste recycling and/or disposal facilities and the availability of</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>construction materials in the region the cumulative effects to resource and waste management are expected to be minor, temporary, negative during the construction phase. Taking into consideration the imperceptible resource and waste management effect of the proposed development during the operational phase, no likely significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p> <p><b>Material Assets:</b> Given the scale of the Crag Digital Avoca Ltd Data Centre and the proximity to the proposed development, there is potential for cumulative effects to material assets in combination with the proposed development and a number of permitted and proposed developments within the vicinity of the Avoca River Business Park. There is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from the developments individually, no significant cumulative effects on services and utilities are predicted during construction. The substation works that are to be carried out are on existing artificial surfaces in the Avoca River Business Park which is in an area zoned for 'employment'. The Developer will ensure co-ordination with Crag Digital Avoca Ltd for the duration of the construction works to minimise any potential effects. Therefore, no significant cumulative effects to material assets are expected during the construction phase.</p> <p>Taking into consideration the low demand from the proposed development on services and utilities during the operational phase and the other proposed developments, as well as the increased electricity capacity from the operation of the overall Project, there are no significant cumulative effects on services and utilities predicted during operation.</p> <p><b>Population and Human Health:</b> Given the proximity to the proposed development, there is potential for cumulative effects to population and human health. However, given the nature of the construction works and the mitigation measures for air quality, noise, vibration and traffic, that will be implemented by both developers, as outlined in their relevant EIARs, there are no significant cumulative effects to population and human health predicted. The construction phase of both developments will create employment opportunities and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction phase.</p> <p>However, there is potential for cumulative operational effects, with the proposed Crag Digital Avoca Ltd data centres. Mitigation is required, in the form of additional noise reduction on plant/equipment, to ensure that cumulative operational noise levels are below the NG4 criteria at all receptors. The cumulative operational noise predictions show that noise levels are likely to be at or below the NG4 criteria at all receptors during all periods and therefore are unlikely to lead to a significant negative effect.</p> <p>The operation of the proposed development, in combination with the permitted and proposed Crag Digital Avoca Ltd developments, is expected to have an overall positive, long-term effect on the immediate area through continued employment opportunities and the associated economic and social benefits.</p> <p><b>Major Accidents and Disasters:</b> During the construction phase of the Crag Digital Avoca Ltd data centre there is potential for cumulative effects in relation to major accidents and disasters, due to the proximity to the proposed substation and the permitted data centre, on the assumption that there will be some overlap in the construction durations. During the operational phase there is potential for cumulative effects to major accidents and disasters, considering the data centre's close proximity to the proposed substation. There is potential for cumulative effects caused by gas explosion, fire and /or explosion for which the risks and consequences may be exacerbated due to the proximity of both developments.</p> <p>While the EIAR for the permitted data centre did not include an assessment in relation to major accidents and disasters, the EIAR which accompanied the new data centre planning application identified the potential risk of fire from diesel storage or electrical equipment. This risk is mitigated, by the proposed firewater storage tank and pump house located on the site which would supply the water mist suppression system in the data halls, the sprinkler systems in the</p>



Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>emergency generator and a ring main with hydrant connections covering all site areas (as included in the EIAR). A similar system will be implemented for the permitted data centre.</p> <p>Due to the low likelihood of such an event occurring, the stringent protective measures in place for the proposed development, and the protective measures in place for both the permitted and the proposed Crag Digital Avoca Ltd data centres (as included in the EIAR); the potential for a significant cumulative effect to occur is low.</p>
<p><b>Project 13:</b> <i>Ardale Properties Limited Housing Estate Permitted</i></p>	<p><b>Air Quality:</b> Given the nature of the works and the distance from the Ardale Properties Ltd housing estate development to the proposed development, no significant cumulative effects are predicted during the construction phase.</p> <p>As there are no changes in traffic volumes and no air emission sources associated with the operation of the proposed development, no significant cumulative effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Ardale Properties Ltd housing estate there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Ardale Properties Ltd housing estate is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The Ardale Properties Ltd development will result in the loss of a small quantity of soil. However, the cumulative loss is still considered small on a local scale. Excavations and some dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase.</p> <p>There are no likely significant cumulative effects to land and soils from the proposed development in combination with the Ardale Properties Ltd development during the operational phase.</p> <p><b>Water:</b> The Ardale Properties Ltd development is located over 500m south east of the proposed development and south of the Avoca River. The Ardale Properties development and the proposed development are not hydrologically linked.</p> <p>The CEMP for the proposed development includes a surface water management measures, which outlines how surface water will be managed during construction and the measures to be taken to prevent any potentially polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development, in combination with the Ardale Properties Ltd development works.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Ardale Properties Ltd development, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the limited scope of the project, the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this Ardale Properties Ltd Housing Estate project. However, given the distance between this project and the proposed development, it is not likely for this project to fall within the zone of influence of the proposed development. Construction vehicles are most likely to access the project site through the Junction 21 on the M11. The temporary increase in traffic will be imperceptible. There is no operational cumulative effect expected as there is no significant operational traffic from the proposed development.</p> <p><b>Landscape and Visual:</b> Considering the nature of both developments and the relative locations of the developments there will be a negligible cumulative effect to landscape and visual amenity during the construction and operational phases.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Ardale Properties Ltd Housing Estate in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the Ardale Properties Ltd development and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> It is expected that the construction works for the Ardale Properties Ltd development will be completed before the commencement of the construction of the proposed development. However, in the event the construction of the Ardale Properties Ltd development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the distance from the proposed development and the existing capacity of local services, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase no significant cumulative effects are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of this project, in terms of both construction activities and construction traffic, as well as the distance from the proposed development, it is not predicted that there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction phase of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction phase. There are no significant cumulative effects to population and human health predicted during the operational phase.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the Ardale Properties Ltd development will be vulnerable. Additionally, no incidents have been</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>identified, which would result in the proposed development, together with the Ardale Properties Ltd development, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 14:</b> <i>Harmony Timber Solutions Ltd Office and Factory</i>  <i>Permitted</i></p>	<p><b>Air Quality:</b> Considering the close proximity of the Harmony Timber Solution Ltd development to the proposed development and the potential overlap of construction phases, there is potential for cumulative effects on air quality to arise during the construction phase. Given the nature and scale of the construction activities and construction traffic associated with the Harmony Timber Solutions Ltd development, no significant cumulative air quality effects are predicted during the construction phase.</p> <p>As there are no significant operational traffic volumes or operational emissions associated with the proposed development there are no cumulative effects to air quality expected during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Harmony Timber Solutions Ltd office and factory development there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Harmony Timber Solutions Ltd office and factory development is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> Harmony Timber Solutions Ltd is one of a number of developments within the vicinity of the Avoca River Business Park. The substitution works that are to be carried out are on a raised platform level with only localised excavation. This, together with the nature and scale of the other projects within the vicinity of the Avoca River Business Park, means that these projects in combination with the proposed substitution will have no likely significant cumulative effect on land and soils during the construction phase.</p> <p>There are no significant cumulative effects on land and soils predicted during operation.</p> <p><b>Water:</b> Harmony Timber Solutions Ltd is one of a number of developments within the vicinity of the Avoca River Business Park. No significant impacts are likely following the implementation of appropriate mitigation measures and adherence to the CEMP for the proposed development. Thus, there are no likely significant cumulative effects from the proposed Harmony Timber Solutions Ltd development in combination with the proposed development in relation to water and hydrology during construction.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Harmony Timber Solutions Ltd development, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> The Harmony Timber Solutions Office and Factory is located to the southwest of the onshore 220kV substation site and in close proximity to a receptor. As the receptor is approximately 600 m from the onshore 220kV substation site, it is considered to be sufficiently separated such that negative effects due to construction works are unlikely. As such, negative cumulative construction noise and vibration effects due to the Harmony Timber Solutions Office and Factory are unlikely.</p> <p>Harmony Timber Solutions Office and Factory development is proposed to be located approximately 200 m away from the receptor. Due to likely operational activities (timber frame assembly), noise is unlikely to be an issue from this scheme. Consequently, it is considered that cumulative effects due to operational noise are unlikely to be greater than the residual operational effects identified for the proposed development.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the limited scope of the project and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> The Harmony Timber Solution Limited Office and Factory is part of multiple projects planned at the Avoca River Business Park. No detail relating to anticipated traffic movements is available for this proposed Harmony Timber Solutions Office and Factory development. However, based on the description of the works and standards provided by Wicklow County Council for the operational phase, traffic during operation is expected to be higher than traffic during construction. Based on the project floor area, this project is assumed to result in roughly 75 LV trips/day during its operational phase.</p> <p>At a wider level, the construction of this project simultaneously with projects planned at the same location will result in greater traffic flows, including heavy goods vehicles on the R772 Dublin Road, the L2180 Beech Road and the L6179 Kilbride road. The developments with overlapping construction durations within the vicinity of the Avoca River Business Park will co-ordinate traffic management plans which will be prepared and agreed with Wicklow County Council. This will result in short-term, negative but not significant cumulative effects.</p> <p>As no significant operational traffic is expected from the proposed development there is no cumulative effects to traffic expected during the operational phase.</p> <p><b>Landscape and Visual:</b> The proposed development will have a negligible cumulative effect to landscape and visual amenity by virtue of the location of both sites within the established industrial lands within the low lying and generally secluded valley setting.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Harmony Timber Solution Ltd Office and Factory in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> The Harmony Timber Solutions Ltd development is one of a number of developments within the vicinity of the Avoca River Business Park. Therefore, there is potential for an increase in demand on resource and waste management during the construction phase, when these developments are considered cumulatively. However, given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region the cumulative effects to resource and waste management are expected to be minor, temporary, negative during the construction phase. Taking into consideration the imperceptible resource and waste management effect of the proposed development during the operational phase, no likely significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p> <p><b>Material Assets:</b> The Harmony Timber Solutions Ltd development is one of a number of developments within the vicinity of the Avoca River Business Park. Therefore, given the proximity to the proposed development, in the event construction of the Harmony Timber Solutions Ltd development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services and utilities no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase there are no significant cumulative effects on services and utilities predicted. Given the nature and scale of the Harmony Timber Solutions Ltd development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of this project, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction and operational phases.</p> <p><b>Major Accidents and Disasters:</b> Considering the proximity to the proposed substation and that it is assumed for the purposes of this assessment that the construction durations overlap there is the potential for a major road accident to occur. However, given the limited construction traffic associated with the proposed development, the implementation of the Construction Traffic Management Plan, which is included in the CEMP, requiring the contractor to coordinate with the other construction projects in the area, no significant cumulative effects have been identified which would result in the proposed development, together with this project being vulnerable to or causing a major accident and disaster.</p> <p>Considering the nature and scale of the Harmony Timber Solutions Ltd no incidents have been identified, which would result in the proposed development, together with this project, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 15:</b>  <i>Sigma Aldrich Ireland Limited</i>  <i>Permitted</i></p>	<p><b>Air Quality:</b> Given the nature of the works and the distance from the Sigma Aldrich Ireland Ltd development to the proposed development, no significant cumulative effects are predicted during the construction phase.</p> <p>As there are no changes in traffic volumes and no air emission sources associated with the operation of the proposed development, no significant cumulative effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Sigma Aldrich Ireland Ltd development there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Sigma Aldrich Ireland Ltd development is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The Sigma Aldrich Ireland Ltd development may result in the loss of a small quantity of soil. However, the cumulative loss would still be considered small on a local scale. If excavations and dewatering are required at the site, these will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase.</p> <p>There are no likely significant cumulative effects to land and soils from the proposed development in combination with the Sigma Aldrich Ireland Ltd development during the operational phase.</p> <p><b>Water:</b> The Sigma Aldrich Ireland Ltd development is located over 800m from the proposed substation site. The CEMP for the proposed development includes a surface water management measures, which outlines how surface water will be managed during construction and the measures to be taken to prevent any potentially polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development, in combination with the Sigma Aldrich Ireland Ltd development works.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Sigma Aldrich Ireland Ltd development, are not expected to be significant.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p> <p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this storage facility. However, based on the description of the works and the level of traffic generation anticipated the level of traffic generated during construction works will be negligible. The temporary increase in traffic will be imperceptible.</p> <p><b>Landscape and Visual:</b> The proposed development will have a negligible cumulative effect to landscape and visual amenity by virtue of the distance between the sites and with both sites located within established lands.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Sigma Aldrich Ireland Ltd development in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the Sigma Aldrich Ireland Ltd development and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> Given the nature and scale of the Sigma Aldrich Ireland Ltd development, the distance from the proposed development and the existing capacity of local services, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase no significant cumulative effects are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of this project, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction and operational phases.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the Sigma Aldrich Ireland Ltd development will be vulnerable. Additionally, no incidents have</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>been identified, which would result in the proposed development, together with the Sigma Aldrich Ireland Ltd development, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>
<p><b>Project 16:</b> <i>Wexford Bus and Stoneleigh Development Limited Park and Ride Facility Permitted</i></p>	<p><b>Air Quality:</b> Given the nature of the works and the distance from the Wexford Bus and Stoneleigh Development Ltd development to the proposed development, no significant cumulative effects are predicted during the construction phase. If the construction of the Park and Ride and the proposed development occur at the same time, given the distance between sites and the fact that the Park and Ride is located adjacent to the M11, any cumulative impact on air quality from construction traffic is not expected to be significant.</p> <p>As there are no changes in traffic volumes and no air emission sources associated with the operation of the proposed development, no significant cumulative effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Wexford Bus and Stoneleigh Development Ltd there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Wexford Bus and Stoneleigh Development Ltd is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The Park and Ride development may result in the loss of a small quantity of soil. However, the cumulative loss would still be considered small on a local scale. If excavations and dewatering are required at the site, these will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely significant cumulative effects to land and soils predicted during the construction phase.</p> <p>There are no likely significant cumulative effects to land and soils from the proposed development in combination with the Park and Ride development during the operational phase.</p> <p><b>Water:</b> The Park and Ride development is located adjacent to the proposed cable route. The CEMP for the proposed development includes a surface water management measures, which outlines how surface water will be managed during construction and the measures to be taken to prevent any potentially polluting activities from occurring. As a result, no significant cumulative effects in relation to water and hydrology have been identified for the proposed development, in combination with the Park and Ride development works.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Park and Ride development, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p> <p><b>Biodiversity:</b> A temporary, not significant effect due to noise and disturbance could potentially arise. However, due to the limited scope of the project, the distance involved and the limited scope for significant potential effects, no cumulative effect on biodiversity is expected to occur during the construction phase in combination with the proposed development. Following completion of construction works no cumulative effect will occur.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Traffic and Transport:</b> No detail relating to anticipated traffic movements is available for this Park and Ride facility. However, based on the description of the works, the level of traffic generation anticipated for this project will be greatest during operation. The daily trip generation by the facility is expected to be in the region of 340 LVs which will lead to a 3% increase in traffic along the R772 Dublin Road. Considering the traffic volumes on this link, the increase in traffic from this project will be not significant. As the traffic from the proposed development, when operational will be minimal, there is not expected to be a cumulative effect on air quality arising from the cumulative operational traffic.</p> <p><b>Landscape and Visual:</b> Considering the nature of both developments and the relative locations of the developments there will be a negligible cumulative effect to landscape and visual amenity during the construction and operational phases.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Wexford Bus and Stoneleigh Ltd development in combination with the proposed development. This is due to the fact that any direct negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> Given the nature and scale of construction works associated with the Wexford Bus and Stoneleigh Development Ltd development and given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region cumulative effects on resource and waste management during the construction phase are predicted to be imperceptible. As no significant operational waste is associated with the proposed development, no significant cumulative effects on resource and waste management are predicted.</p> <p><b>Material Assets:</b> In the event the construction of the Wexford Bus and Stoneleigh Ltd development and the proposed development overlap there is potential for an increase in demand on services and utilities. However, given the nature and scale of the Wexford Bus and Stoneleigh Ltd development and the existing capacity of local services, no significant cumulative effects are predicted. Taking into consideration the low demand from the proposed development during the operational phase no significant cumulative effects are predicted. Given the location vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the nature and scale of this project, in terms of both construction activities and construction traffic, it is not likely there will be significant potential for cumulative effects on population and human health in combination with the proposed development. The construction and operational phases of both developments will create employment opportunities in Arklow and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction and operational phases.</p> <p><b>Major Accidents and Disasters:</b> Considering the nature and scale of the works, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for the proposed development, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the Wexford Bus and Stoneleigh Development Ltd development will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the Wexford Bus and Stoneleigh Development Ltd development, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>



Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
<p><b>Project 17:</b> <i>Crag Digital Avoca Limited Data Centre - amended application</i> <i>Pending approval</i></p>	<p>Only one Crag Digital data centre development will be built – either the permitted one or the one described in this application. The cumulative effects, outlined for Project 12 Crag Digital Avoca Limited permitted data centre, apply to this new application, with specific cumulative operational noise effects and landscape ad visual character noted below.</p> <p><b>Noise:</b> The cumulative operational noise predictions above show that noise levels are likely to be at or below the NG4 criteria at all receptors at all times during the day and therefore are unlikely to lead to a significant negative effect. There are some cases where the cumulative level is higher than the pre-existing background noise level, notably during night-time and therefore may lead to an adverse impact on nearby residential receptors. Given the context of low background levels, low ambient noise levels, and low predicted operational noise levels, the negative effect is not considered to be significant.</p> <p><b>Landscape and Visual:</b> The data centre development will have a substantially larger footprint than the substation and will be characterised as a large scale and enclosed high-tech building facility with smaller scale ancillary components. The currently proposed revised data centre development occupies substantially the same site area as the permitted scheme. While its buildings are not as high as the permitted scheme, it nonetheless presents as being similar in character and magnitude.</p> <p><b>Air Quality:</b> Considering the close proximity to the proposed development (immediately adjacent to the substation site) there is potential for cumulative effects from dust during the construction phase. However, there are stringent mitigation measures in place for the Crag Digital Avoca Ltd 110kV Substation (as included in the EIA), the permitted and proposed Crag Digital data centres and the proposed development in order to control dust emissions during the construction phase. Therefore, there are no significant cumulative effects predicted.</p> <p>There are no significant operational effects on air quality associated with the proposed Crag Digital 110 kV substation, so no significant cumulative operational effects on air quality are predicted, with the proposed development and with the proposed and permitted data centre developments.</p> <p><b>Climate:</b> Given the nature and scale of the Crag Digital Avoca Ltd 110kV substation there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Crag Digital Avoca Ltd 110kV substation is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The proposed Crag Digital Avoca Limited 110kV Substation is proposed in an area of made ground. It is possible that some made ground material may need to be disposed of to a suitably licenced waste facility. The substation works that are to be carried out are on a raised platform level with only localised excavation. The developer will ensure co-ordination with Crag Digital Avoca Ltd for the duration of the construction works to minimise any potential effects. This, together with the nature and scale of the other proposed developments in the vicinity of the Avoca River Business Park, means that there will be no likely significant cumulative effects with the proposed development on land and soils during the construction phase.</p> <p>There are no significant cumulative effects on land and soils predicted during operation.</p> <p><b>Water:</b> The Crag Digital Avoca Ltd 110kV substation one of a number of developments within the vicinity of the Avoca River Business Park. No significant impacts are likely following the implementation of appropriate mitigation measures and adherence to the CEMP for the proposed development. Thus, there</p>
<p><b>Project 18:</b> <i>Crag Digital Avoca Limited 110kV Substation</i> <i>Pending approval</i></p>	<p><b>Air Quality:</b> Considering the close proximity to the proposed development (immediately adjacent to the substation site) there is potential for cumulative effects from dust during the construction phase. However, there are stringent mitigation measures in place for the Crag Digital Avoca Ltd 110kV Substation (as included in the EIA), the permitted and proposed Crag Digital data centres and the proposed development in order to control dust emissions during the construction phase. Therefore, there are no significant cumulative effects predicted.</p> <p>There are no significant operational effects on air quality associated with the proposed Crag Digital 110 kV substation, so no significant cumulative operational effects on air quality are predicted, with the proposed development and with the proposed and permitted data centre developments.</p> <p><b>Climate:</b> Given the nature and scale of the Crag Digital Avoca Ltd 110kV substation there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Crag Digital Avoca Ltd 110kV substation is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soils:</b> The proposed Crag Digital Avoca Limited 110kV Substation is proposed in an area of made ground. It is possible that some made ground material may need to be disposed of to a suitably licenced waste facility. The substation works that are to be carried out are on a raised platform level with only localised excavation. The developer will ensure co-ordination with Crag Digital Avoca Ltd for the duration of the construction works to minimise any potential effects. This, together with the nature and scale of the other proposed developments in the vicinity of the Avoca River Business Park, means that there will be no likely significant cumulative effects with the proposed development on land and soils during the construction phase.</p> <p>There are no significant cumulative effects on land and soils predicted during operation.</p> <p><b>Water:</b> The Crag Digital Avoca Ltd 110kV substation one of a number of developments within the vicinity of the Avoca River Business Park. No significant impacts are likely following the implementation of appropriate mitigation measures and adherence to the CEMP for the proposed development. Thus, there</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>are no likely significant cumulative effects from the proposed Crag Digital Avoca Ltd 110kV substation development in combination with the proposed development in relation to water and hydrology during construction.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in-combination with the Crag Digital Avoca Ltd 110kV substation development, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> A new 110kV GIS Substation has been included in the modelling and cumulative assessment as part of the Crag Digital Avoca Ltd Data Centre (ref. 18940) permitted development. The location of the new proposed alternate location for this substation is a location to the west of what is assessed in this model and this alternate location will not notably change noise levels experienced at noise receptors. Consequently, it is considered that cumulative effects due to operational noise will not be greater than the residual operational effects identified for the proposed development.</p> <p><b>Biodiversity:</b> If works are concurrent with the bulk excavation works on the site of the substation, there is potential for cumulative effects, as the sites are located close to each other. Should this situation arise, construction activities will be planned and phased, in consultation with the construction management team for the scheme. During the construction and operational phases, the project has sufficient physical separation from the site of the proposed development to reduce the potential for cumulative noise and vibration effects and surface water effects to a negligible level.</p> <p>Discharges from both this project and the proposed development are governed by strict limits to ensure compliance with quality standards. No long-term cumulative impact on water quality will occur.</p> <p>Given the location of these projects (in areas of relatively low habitat and species value), together with the implementation of good practice standard construction environmental measures, the CEMP for the proposed development as detailed, no significant cumulative effects on biodiversity will result. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> The Crag Digital Avoca Limited 110kV substation is part of multiple projects planned at the Avoca River Business Park. No detail relating to anticipated traffic movements is available for this proposed Crag Digital Avoca Ltd 110kV Substation project. However, based on the description of the works, the project is assumed to result in the same number of trips expected during the construction phase of the proposed development's substation. A total of 103 LV and 259 HGV trips/day are therefore anticipated for this project (refer to Table 13.8). There is no OHL construction work associated with this project. However, the same level of traffic generation is assumed for a robust evaluation.</p> <p>At a wider level, the construction of this project simultaneously with projects planned at the same location will result in greater traffic flows, including heavy goods vehicles on the R772 Dublin Road, the L2180 Beech Road and the L6179 Kilbride road. The developments with overlapping construction durations within the vicinity of the Avoca River Business Park will co-ordinate traffic management plans which will be prepared and agreed with Wicklow County Council. This will result in short-term, negative but not significant cumulative effects.</p> <p>As no significant operational traffic is expected from the proposed development there is no cumulative effects to traffic expected during the operational phase.</p> <p><b>Landscape and Visual:</b> The proposed 110kV substation development associated with the permitted and proposed data centre developments will be located to the immediate northwest of the data centre and immediately west of the proposed 220kV substation. It is of modest scale relative to the 220kV substation and the data centre developments and will be visually absorbed within the industrial setting.</p> <p>The proposed development will have a negligible cumulative effect to landscape and visual amenity by virtue of relative scale, adjacency and similarity in nature of both developments.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Crag Digital Avoca Ltd 110kV Substation in combination with the proposed development. This is due to the distance of the development from this project and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p> <p><b>Resource and Waste Management:</b> The Crag Digital Avoca Ltd 110kV substation development is one of a number of developments within the vicinity of the Avoca River Business Park. Therefore, there is potential for an increase in demand on resource and waste management during the construction phase, when these developments are considered cumulatively. However, given the existing capacity of waste recycling and/or disposal facilities and the availability of construction materials in the region the cumulative effects to resource and waste management are expected to be minor, temporary, negative during the construction phase. Taking into consideration the imperceptible resource and waste management effect of the proposed development during the operational phase, no likely significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p> <p><b>Material Assets:</b> Considering the proximity of the Crag Digital Avoca Ltd 110kV substation to the proposed development, there is potential for cumulative effects to material assets in combination with the proposed development and a number of permitted and proposed developments within the vicinity of the Avoca River Business Park. There is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from the developments individually, no significant cumulative effects on services and utilities are predicted during construction. The substation works that are to be carried out are on existing artificial surfaces in the Avoca River Business Park which is in an area zoned for 'employment.' The Developer will ensure co-ordination with Crag Digital Avoca Ltd for the duration of the construction works to minimise any potential effects. Therefore, no significant cumulative effects to material assets are expected during the construction phase.</p> <p>Taking into consideration the low demand from the proposed development on services and utilities during the operational phase and the other proposed developments, as well as the increased electricity capacity from the operation of the overall Project, there are no significant cumulative effects on services and utilities predicted during operation.</p> <p><b>Population and Human Health:</b> Given the proximity to the proposed development, there is potential for cumulative effects to population and human health. However, given the nature of the construction works and the mitigation measures for air quality, noise, vibration and traffic, that will be implemented by both developers, as outlined in their relevant EIARs, there are no significant cumulative effects to population and human health predicted. The construction phase of both developments will create employment opportunities and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction phase. The operation of the proposed development, in combination with the permitted and proposed Crag Digital Avoca Ltd developments, is expected to have an overall positive, long-term effect on the immediate area through continued employment opportunities and the associated economic and social benefits.</p> <p><b>Major Accidents and Disasters:</b> Considering the proximity to the proposed development, there is potential for a cumulative effect in relation to major accidents and disasters during the construction phases of the proposed development, the 110kV substation and the permitted data centre facility. The cumulative effects identified for the permitted data centre and the proposed development have the potential to be further exacerbated, if the 110kV substation receives permission and is constructed at the same time. Notwithstanding, due to the low likelihood of such an event occurring and the stringent protective measures in place for the proposed development, the potential for a cumulative effect of this nature to occur is very low.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>The operational risks associated with the Crag Digital Avoca Ltd 110kV substation are considered similar to those of the proposed substation. Considering its close proximity and the proximity of the permitted data centre there is potential for cumulative effects during the operational phase caused by fire and /or explosion.</p> <p>The risks and consequences may be exacerbated due to facilities being side by side. If such an event were to occur at more than one facility at the same time the associated consequence would also be increased. However, due to the low likelihood of such an event occurring and the stringent protective measures in place for the proposed development the potential for a cumulative effect of this nature to occur is low.</p> <p>It is assumed that SF<sub>6</sub> gas will be utilised in the proposed 110kV substation, similar to the proposed development with the same potential to leak in small amounts. The proposed Crag Digital Avoca Ltd datacentre (amended application) EIAR notes the use of SF<sub>6</sub> and concludes a leak is not considered a significant major accident. Consequently, considering the stringent mitigation measures in place for the proposed development and the imperceptible overall effects to climate from a single leak, no significant cumulative effects have been identified which would result in the proposed development, together with the Crag Digital 110kV substation and the Crag Digital Avoca Ltd datacentre causing major climate effects due to SF<sub>6</sub> leaks.</p>
<p><b>Project 19:</b> <i>Arklow Flood Relief Scheme</i>  <i>Pending submission</i></p>	<p><b>Air Quality:</b> Given the distance from the Arklow Flood Relief Scheme to the proposed development, there are no significant cumulative air quality effects predicted during the construction phase.</p> <p>As there are no air emission sources or operational traffic associated with the proposed development, and the distance from the Arklow Flood Relief Scheme to the proposed development, there are no significant cumulative air quality effects are predicted during the operational phase.</p> <p><b>Climate:</b> Given the nature and scale of the Arklow Flood Relief Scheme there are negligible carbon emissions associated with its development and operation in terms of macro-scale carbon contribution. Therefore, the Arklow Flood Relief Scheme is not considered to have notable effect regarding government targets and the EU ETS obligations on its own or in combination with the proposed development. As such, there are no cumulative effects to climate predicted during the construction or operational phases.</p> <p><b>Land and Soil:</b> The proposed Arklow Flood Relief Scheme is proposed in an area of made ground. Material will likely need to be disposed of or recovered at a suitably licenced waste facility. In addition, small quantities of soil will be lost, this is likely to be small on a local scale. No other significant impacts on land and soils are likely following the implementation of appropriate mitigation measures. Excavations and dewatering may be required at the site. These will not interact with the impacts identified for the proposed development. There are no cumulative effects predicted from a hydrogeological perspective due to the location from the proposed development (e.g. distant or downgradient of the proposed development), the nature and extent of the development and the interaction with impacts identified for the proposed development. Thus, there are no likely cumulative effects from the Arklow Flood Relief Scheme in combination with the proposed development on land and soils during the construction phase.</p> <p>There are no likely cumulative effects from the proposed development in combination with the Arklow Flood Relief Scheme on land and soils during the operational phase.</p> <p><b>Water:</b> It is possible that the construction of the proposed Arklow Flood Relief Scheme may take place in parallel with the construction of the proposed development (should the proposed Arklow Flood Relief Scheme be submitted, receive consent and commence construction in a timely manner). The concurrent construction of both developments may exacerbate effects on the hydrology and flooding.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p>Mitigation measures will be implemented to mitigate any significant flood risk during construction of works in and around the Avoca River. The construction works to the existing flood defence embankment and nearby construction of the proposed Arklow Flood Relief Scheme may generate the potential for direct and indirect short term significant negative effects on the hydrology of the Avoca River during construction for those reasons outlined above.</p> <p>No significant impacts are likely following the implementation of appropriate mitigation measures and adherence to the CEMP for the proposed development. Thus, there are no likely significant direct, indirect cumulative impacts of the proposed Arklow Flood Relief Scheme in combination with the proposed development in relation to water and hydrology.</p> <p>As the effect of the proposed development on water and hydrology during the operation phase will not be significant, any potential cumulative effects arising, in combination with the Arklow Flood Relief Scheme, are not expected to be significant.</p> <p><b>Noise and Vibration:</b> Cumulative impacts during construction have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 200 m from selected sensitive receptors. Cumulative impacts during operation have been screened out, assuming that negative noise and vibration effects are unlikely at distances greater than 1 km from receptors where operational effects have been identified closest to OGI substation.</p> <p><b>Biodiversity:</b> The flood relief scheme has sufficient physical separation from the site of the proposed development to reduce the potential for cumulative noise and vibration effects and surface water effects to a negligible level.</p> <p>If the flood relief works are concurrent with the bulk excavation works on the site of the substation, there is potential for cumulative effects, as the sites are located close to each other. Should this situation arise, construction activities will be planned and phased, in consultation with the construction management team for the flood relief scheme.</p> <p>Given the location of these projects (in areas of relatively low habitat and species value), together with the implementation of best practice standard construction environmental measures, the CEMP for the proposed development as detailed, no significant cumulative effects on biodiversity will result. Following completion of construction works no cumulative effect will occur.</p> <p><b>Traffic and Transport:</b> The construction of Arklow Flood Relief Scheme is expected to result in a maximum of 358 trips daily (LV+HGV). This is translated in an increase in traffic flows on the R772 Dublin Road of less than 2.2% on an all-day basis. The temporary increase in traffic volumes from this project will have limited impact on the performance of the R772 Dublin Road and will therefore be not significant. As there is no significant operational traffic associated with the proposed development there will be no significant cumulative effect predicted.</p> <p><b>Landscape and Visual:</b> The proposed Arklow Flood Relief Scheme project is located within the urban area of Arklow town at a distance of c. 1.5km to 3.0km east of the M11 motorway. It is considered that potential cumulative landscape or visual effects will be negligible by virtue of relative locations of both development sites.</p> <p><b>Archaeology, Architecture and Cultural Heritage:</b> From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to the proposed Arklow Flood Relief Scheme in combination with the proposed development. This is due to the distance of the development from this project and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed development will be fully mitigated.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors
	<p><b>Resource and Waste Management:</b> Given the likely overlap between the construction phases of the Arklow Flood Relief Scheme and the proposed development there is potential for a cumulative resource and waste management effect during the construction of the proposed development. This could give rise to short term, slight resource and waste management effects due to an increased demand on waste recovery and/or disposal sites. Considering the imperceptible resource and waste management effect of the proposed development during the operational phase, no negative likely significant cumulative resource and waste management effects are identified during the operational phase of the proposed development.</p> <p><b>Material Assets:</b> Considering the distance between the developments there is no cumulative effects predicted in terms of material assets during the construction phase. There will be a low demand on material assets from both development during the operational phase, therefore no cumulative effects to materials assets are predicted. Given the location of the Arklow FRS vis a vis the proposed development, no significant cumulative effects on land use are expected during the construction or operational phase.</p> <p><b>Population and Human Health:</b> Given the scale of the Arklow Flood Relief Scheme, in terms of both construction activities and construction traffic, there is potential for cumulative effects on population and human health. However, given the distance from the proposed development, no significant effects are predicted. The construction phase of both developments will create employment opportunities and the associated economic and social benefits, which will have a positive cumulative effect on population and human health during the construction phase. The operation of the proposed development is expected to have a positive effect on population and human health in terms of increasing energy supply in the local area. The operation of the proposed Arklow Flood Relief Scheme will provide flood defences in Arklow. Both developments will allow for further expansion and growth in the area, which will help to meet the objectives of the Arklow LAP. Therefor there is potential for a positive cumulative effect on population and human health in combination with the proposed development.</p> <p><b>Major Accidents and Disasters:</b> Considering the distance and well developed existing environment between the Arklow FRS and the proposed development, the potential low risk scenarios associated with the proposed development and the robust mitigation measures to be implemented for both projects, no plausible potential major accidents and disasters have been identified, to which the proposed development together with the Arklow FRS project will be vulnerable. Additionally, no incidents have been identified, which would result in the proposed development, together with the Arklow FRS, causing a major accident or disaster on or outside the proposed development area during the construction or operational phase.</p>