

Proposed Ballynalacken Windfarm Project

Environmental Impact Assessment Report

Chapter 20: Summary of Impacts

EIAR Coordinator:



March 2025

CHAPTER 20 Summary of Impacts

The following table provides a summary of scoped in impacts assessed by the competent experts in the Environmental Factor topic chapters (Chapters 6 to Chapter 17).

The relevant phase of the Ballynalacken Windfarm Project: C (construction), O (operation), D (decommissioning), and a colour has been assigned to each impact significance as per the following:

Negative Impacts	Neutral
	Imperceptible
	Unlikely Impact
	No Likely Impact
	Not Significant
	Imperceptible – Slight
	Slight
	Moderate - Slight
	Moderate
	Significant
	Profound
Positive Impacts	Imperceptible
	Not Significant
	Slight
	Significant

In summary, the **Ballynalacken Windfarm Project is not likely to cause significant adverse residual effects to the receiving environment**. While there is potential for significant adverse impacts, pre-mitigation, to Surface Water Bodies and water quality in Designated Sites on the River Nore, Aquatic Habitats & Species and downstream Designated Sites (habitat degradation and spread of Invasive Species), Bats (species at high risk of collision), 10 no. local residences (noise), and 43 no. local residences (shadow flicker), a suite of mitigation measures and monitoring arrangements have been developed (See EIAR Chapter 19), and following the implementation of these measures, the residual impacts to will be Slight adverse (bats), Imperceptible (water quality), and Not Significant (designated sites, aquatic habitats and species, and local residences).

The **Ballynalacken Windfarm Project will cause significant positive impacts to Climate Change through the production of Renewable Electricity**, in addition to the following positive impacts; improvements in air quality due to the offset of greenhouse gas emissions; habitat protection due to the leasing of the Biodiversity Protection Area; habitat enhancement due to planting of existing field boundaries with hedgerow species; improvements in County Kilkenny budgets due to payments of commercial rates associated with the Project; and strengthening of the local economy as a result of construction and operational spending.

Table 20-1: Summary of Pre-Mitigation and Residual Impacts across all Environmental Factors

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Chapter 6: Land – Agricultural Land				
Degradation or loss of farm water supply	C	6.3.1.2.1	Imperceptible – Slight	Neutral
Reduction in Land Area available for Agricultural Use	C, O	6.3.1.2.2	Imperceptible	Imperceptible
Chapter 6: Land – Forestry Land				
Reduction in Land Area available for Commercial Forestry Use	C, O	6.3.2.2.1	Imperceptible	Imperceptible
Chapter 7: Soils – Local Soils & Bedrock				
Reduction in Soil quantity due to excavation & relocation of soils, subsoils & bedrock	C	7.3.1.2.1	Moderate (wind farm) to Slight-Imperceptible	Moderate (wind farm) to Slight/Imperceptible
Soil degradation due to contamination by hydrocarbons, chemicals, or cement-based compounds	C	7.3.1.2.2	Slight	Imperceptible
Soil degradation due to erosion or weathering	C	7.3.1.2.3	Slight	Imperceptible
Ground instability	C	7.3.1.2.4	No Likely Impact	No Likely Impact
Chapter 8: Water – River Waterbodies				
Reduction in Surface Water Quality due to suspended solid entrainment in surface waters	C	8.3.1.2.1	Impacts range from No Effect to Potentially Significant	Imperceptible
Reduction in Surface Water Quality due to of the potential release of hydrocarbons, cement-based compounds or nutrients	C	8.3.1.2.2	Imperceptible - Moderate	Imperceptible
Reduction in Surface Water Quality during decommissioning works	D	8.3.1.2.6	Imperceptible to Moderate	Imperceptible
Hydromorphological effects due to watercourse crossing works	C	8.3.1.2.3	Imperceptible	Imperceptible
Changes to Surface Water Quantities due to increased site runoff rates and/or changes to drainage patterns	C, O, D	8.3.1.2.4	Imperceptible	Imperceptible
Reduction in Surface Water Quality during the operational phase	O	8.3.1.2.5	Imperceptible	Imperceptible
Chapter 8: Water – Groundwater Bodies				
Reduction in Groundwater Quality due to sedimentation, and/or contamination by hydrocarbons and/or cement-based compounds	C	8.3.2.2.1	Imperceptible to Slight	Imperceptible
Alteration of groundwater levels and/or flow paths	C	8.3.2.2.2	Imperceptible	Imperceptible
Chapter 8: Water – Water Supply				
Reduction in Groundwater Quality or Quantity at local wells <u>within 500m of</u> turbine foundation locations and borrow pits	C	8.3.3.2.1	Imperceptible	Neutral
Chapter 8: Water – Designated Sites				
Reduction in Water Quality in the River Barrow and River Nore SAC, the River Nore SPA and the River Nore/Abbeyleix Woods pNHA	C	8.3.4.2.1	Potential for Significant Impacts	Imperceptible

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Potential erosion and flow regime effects to the River Barrow and River Nore SAC, River Nore SPA and River Nore/ Abbeyleix Woods Complex pNHA	C, O	8.3.4.2.2	Imperceptible	Neutral
Chapter 9: Air Quality & EMF – Local Residents, Community & Amenities				
Increase in airborne dust	C	9.3.1.2.1	Slight	Imperceptible
Savings in NO _x emissions and improvement in transboundary air pollution	O	9.3.1.2.2	Slight (positive)	Long-term, indirect, slight, (positive)
Increase in ambient EMF levels	O	9.3.1.2.3	Imperceptible	Imperceptible
Chapter 10: Noise & Vibration				
Noise from operating turbines at Noise Sensitive Locations (NSL)	O	10.3.1.3.1	Not Significant (149 NSL)	Not Significant
			Significant (10 NSL)	Not Significant
Special Characteristics – low frequency sound and infrasound	O	10.3.1.3.2	below perceptibility thresholds	
Special Characteristics – amplitude modulation	O	10.3.1.3.3	Unlikely to occur	Not Significant
Noise from the operational Tinnalintan Substation	O	10.3.1.3.4	Not Significant	Not Significant
Noise from construction works	C	10.3.1.3.5	Not Significant	Not Significant
Noise from Construction Traffic	C	10.3.1.3.5	Imperceptible - Not Significant	Not Significant
Noise from Borrow Pit Activities	C	10.3.1.3.5	Not Significant	Not Significant
Vibration from construction works	C	10.3.1.3.6	Neutral to Imperceptible	Not Significant
Vibration from operational windfarm	O	10.3.1.3.7	Imperceptible	Not Significant
Chapter 11: Shadow Flicker				
Shadow Flicker effect from Operational Turbines	O	11.3	Significant (43 houses)	No Significant Impacts
Chapter 12: Climate – Climate Change				
Climate Action through Renewable Energy – Electricity (RE-E) production	O	12.3.1.2.1	Significant, beneficial	Long-term, (positive), significant
Greenhouse Gas Emissions due to construction materials, works and activities and due to manufacture of turbine components	C	12.3.1.2.2	Imperceptible, non-significant	Not Significant
Chapter 13: Biodiversity – Terrestrial Habitats				
Introduction or spread of invasive species	C, O, D	13.3.1.2.1	Moderate	Neutral
Habitat enhancement and protection	C, O	13.3.1.2.2	Slight (positive)	Slight (positive)
Chapter 13: Biodiversity – Terrestrial Mammals				
Physical Loss or degradation of suitable habitat for Otter	C, O	13.3.4.2.1	Slight	Slight
Reduction in aquatic habitat quality and availability of aquatic prey item species for Otter	C	13.3.4.2.2	Slight	Neutral – Not Significant

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Mortality of Otter	C	13.3.4.2.3	Moderate (mortality) – Slight (disturbance, displacement)	Slight (mortality) – Not Significant (disturbance, displacement)
Disturbance or displacement of Otter	C	13.3.4.2.3	Moderate (mortality) – Slight (disturbance)	Slight (mortality) – Not Significant (Disturbance)
Mortality, disturbance or displacement of Badger at Setts	C	13.3.4.2.4	Slight	Neutral – Not Significant
Chapter 13: Biodiversity – Bats				
Mortality of bats due to collision or barotrauma	O	13.3.5.2.1	Slight (Low Risk Species)	Imperceptible (Low Risk Species)
			Significant (High Risk Species)	Slight (High Risk Species)
Loss, Reduction of feeding areas, Severance of commuting routes	C, O, D	13.3.5.2.2	Slight (adverse)	Slight (positive) to Not Significant (positive)
Disturbance or displacement of bats	C	13.3.5.2.3	Not Significant to Slight (TR2)	Neutral (general) to Imperceptible (TR1, BL2)
Disturbance of roosting bats as a result of operating turbines	O	13.3.5.2.4	Not Significant – Slight (TR1)	Neutral (general) to Imperceptible (TR1, BL2)
Chapter 13: Biodiversity – Birds (Birds of Prey)				
Collision risk	O	13.3.6.2.1	Not Significant (low risk species)	Neutral (Low Risk Species)
			Slight/Moderate (High Risk Species)	Not Significant (High Risk Species)
Disturbance/Displacement from operational (i.e. rotating) turbines	O	13.3.6.2.5	Not Significant	Not Significant
Chapter 13: Biodiversity – Birds (Kingfisher)				
Reduction in foraging or nesting resource in downstream habitats	C	13.3.6.2.2	Slight	Neutral – Not Significant
Chapter 13: Biodiversity – Birds (Passerines)				
Physical injury/destruction of nests or chicks	C	13.3.6.2.3	Slight – Not Significant	Neutral
Chapter 13: Biodiversity – Birds (Waders)				
Collision risk	O	13.3.6.2.4	Slight	Not Significant
Physical injury/destruction of nests or chicks	C	13.3.6.2.6	Not Significant	Neutral
Chapter 13: Biodiversity – Aquatic Habitats & Species				
Habitat Degradation Effects on Aquatic Habitats and Aquatic Species	C	13.3.7.2.1	Not Significant (Aquatic habitats)	Neutral – Not Significant
			Potentially Significant (Aquatic species)	
Spread of aquatic & riparian invasive species	C, O, D	13.3.7.2.2	Slight to Potentially Significant	No Impact

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Hydromorphological impacts to downstream waterbodies due to changes to drainage regimes and surface water runoff	C, O, D	13.3.7.2.3	Slight	Neutral
Hydromorphological impacts due to windfarm construction works at W1, D1, D2, D3 and D4	C, O, D	13.3.7.2.4	Imperceptible	Neutral
Chapter 13: Biodiversity – Designated Sites				
Habitat Degradation Effects to downstream Designated Sites (SAC, SPA and pNHA) due to sedimentation and reductions in water quality	C	13.3.8.2.1	Not Significant (habitats) to Potentially Significant (species)	Neutral – Not Significant
Indirect effects to Designated Sites (SAC, SPA and pNHA) due to the spread of invasive species	C, O, D	13.3.8.2.2	Slight to Potentially Significant	No Impact
Disturbance / displacement effects to the River Barrow & River Nore SAC (QI: Otter)	C, O, D	13.3.8.2.3	Negligible – Slight	Neutral to Not Significant
Chapter 14: The Landscape (residual impact listed only)				
Physical Effect on Landscape Character	C	14.6.2.1	Moderate	
Physical Effect on Landscape Character	O, D	14.6.2.2	Moderate to Slight and Imperceptible	
Visual impact on Designated Views	O	14.7.1	In summary, no significant visual impacts	
VP6: Heywood Demesne	O	EIAR 14.7.1, and Appendix 14.1	VP6 - Moderate	
VP12: Local road at Ballyouskill			VP12 - Moderate	
VP15: Local road (Cromwell's Road)			VP15 (Cromwells Road) Substantial-moderate	
VP19: Regional Road R694 at Glenmagoo or Firoda Lower			VP19 - Moderate-slight	
VP20: Local Load L5846 intersection of the R694			VP20 - Moderate	
VP23: Regional Road R694 at Finnan			VP23 - Imperceptible	
VP27: Local road at Frankford, south of Gathabawn Village			VP27 - Slight-imperceptible	
VP28: Local Road L1820 north of Kilmacar			VP30 - Slight-imperceptible	
Visual impact on Local Community Views	O	14.7.2	In summary, no significant visual impacts	
VP7: Laois County Council Scenic Viewpoint at Ballinkill GAA club	O	EIAR 14.7.2, and Appendix 14.1	VP7 - Moderate	
VP8: L7799 local road at Ironmills (Kilrush)			VP8 - Moderate-slight	
VP12: Local road at Ballyouskill			VP12 - Moderate	
VP13: Local road at Ballynalacken			VP13 - Substantial-moderate	
VP14: Local Road L5846 at Ballynalacken			VP14 - Substantial-moderate	
VP15: Local road (Cromwell's Road)			VP15 - Substantial-moderate	
VP16: Local Road at Skehana			VP16 - Moderate-slight	
VP18: Regional Road R432 at Tinnalintan south of Glashagal Bridge			VP18 - Moderate-slight	
VP19: Regional Road R694 at Glenmagoo or Firoda Lower			VP19 - Moderate-slight	
VP20: Local Load L5846 intersection of the R694			VP20 - Moderate	
VP22: L5853 local road west of Castlecomer			VP22 - Slight-imperceptible	
VP23: Regional Road R694 at Finnan			VP23 - Imperceptible	
VP28: Local Road L1820 north of Kilmacar			VP28 - Slight	

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Visual impact on Centres of Population	O	In summary, no significant visual impacts		
VP1: Portlaoise Rugby Club, Portlaoise	O	EIAR 14.7.3, and Appendix 14.1	VP1 - Imperceptible	
VP2: Ballyroan Abbey GAA Club, Ballyroan			VP2 - Slight-imperceptible	
VP3: Local Church, Abbeyleix			VP3 - Imperceptible	
VP5: The Swan/Crettyard/R430			VP5 - Slight	
VP7: Laois County Council Scenic Viewpoint at Ballinkill GAA club			VP7 - Moderate	
VP9: Local Road at Attanagh			VP9 – Moderate-slight	
VP10: National Road N77 northeast of Durrow			VP10 - Slight	
VP22: L5853 local road west of Castlecomer			VP22 - Slight-imperceptible	
VP24: Lisdowney			VP24 - Moderate-slight	
VP26: St Patricks GAA Club, Ballyragget			VP26 - Moderate-slight	
VP27: Local road at Frankford, south of Gathabawn Village			VP27 - Slight-imperceptible	
VP28: Local Road L1820 north of Kilmacar			VP28 - Slight	
VP29: Local road east of Muckalee			VP29 - Slight-imperceptible	
VP30: L7122 local road northwest of Ridge Crossroads			VP30 - Slight-imperceptible	
VP31: St. Lachtains GAA Club, Freshford			VP31 - Slight	
Visual impact on Major Routes	O	In summary, no significant visual impacts		
VP3: Local Church, Abbeyleix	O	EIAR 14.7.4 and Appendix 14.1	VP3 - Imperceptible	
VP4: L1596 local road overbridge of the M7 at Kilcotton			VP4 - Slight-imperceptible	
VP5: The Swan/Crettyard/R430			VP5 - Slight	
VP10: National Road N77 northeast of Durrow			VP10 - Slight	
VP11: L5591 overbridge of the M8 east of Cannonswood Cross Roads			VP11 - Slight-imperceptible	
VP17: National Road N78 at Cloneen			VP17 - Slight	
VP18: Regional Road R432 at Tinnalintan south of Glashagal Bridge			VP18 - Moderate-slight	
VP21: National Road N77 at Ballynaslee, west of the River Nore			VP21 - Slight	
VP23: Regional Road R694 at Finnan			VP23 - Imperceptible	
VP26: St Patricks GAA Club, Ballyragget			VP26 - Moderate-slight	
Visual impact on Tourism, Recreation and Heritage Features	O	In summary, no significant visual impacts		
VP3: Local Church, Abbeyleix	O	EIAR 14.7.5, and Appendix 14.1	VP3 - Imperceptible	
VP6: Heywood Demesne			VP6 - Moderate	
VP16: Local Road at Skehana			VP16 - Moderate-slight	
VP22: L5853 local road west of Castlecomer			VP22 - Slight-imperceptible	
VP27: Local road at Frankford, south of Gathabawn Village			VP27 - Slight-imperceptible	
VP32: St Canice’s Round Tower, Kilkenny City			VP32 - Slight-imperceptible	
Chapter 15: Cultural Heritage				

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Physical and visual impacts on cultural heritage sites	C, O, D	15.3.2.2 15.3.2.3	Moderate - Slight	Moderate – Not Significant
Chapter 16: Material Assets – Road Users				
Increased Journey Time or Disruption to Road Users using Local Roads	C	16.3.1.2.1	Slight/Moderate (general) – Moderate (concrete pours)	Slight - Moderate
Increased Journey Time or Disruption to Road Users using Regional Roads	C	16.3.1.2.2	Moderate	Slight-Moderate
Disrupted Access to Property	C	16.3.1.2.3	Slight	Neutral
Increased risk of road accidents due to increased traffic and works in public road	C, O, D	16.3.1.2.4	Moderate	No Likely Increase in Road Safety Risk
Chapter 16: Material Assets – Public Roads and Local Built Services				
Damage to Regional and Local road pavements	C	16.3.2.2.1	Slight-Moderate	Neutral
Damage to bridges and culverts	C	16.3.2.2.2	No Likely Impact	Neutral
Loss of local public water supply	C	16.3.2.2.3	Imperceptible	Neutral
Loss of electricity or telephone/fibre services	C	16.3.2.2.4	Imperceptible	Neutral
Chapter 16: Material Assets – Other Built Services & Local End Users				
Interference with ESB Networks PTP microwave radio link	O	16.3.3.2.1	Moderate	No Impact
Interference with Eir PTP microwave radio link	O	16.3.3.2.2	Moderate	No Impact
Obstruction of Tetra Ireland Network signals	O	16.3.3.2.3	Neutral	Neutral
Chapter 17: Population & Human Health – Local Community Health & Wellbeing				
Secondary Impact of Water Supply Impacts on Health & Wellbeing	C	17.3.1.2.1	Neutral	Not Significant
Secondary Impact of Air Quality Impacts on Health & Wellbeing	C	17.3.1.2.2	Neutral	Not Significant
Secondary Impact of EMF Impacts on Health & Wellbeing	O	17.3.1.2.3	Neutral	Not Significant
Secondary Impact of Noise Impacts on Health & Wellbeing	C, O	17.3.1.2.4	Not Significant	Not Significant
Secondary Impact of Shadow Flicker Impacts on Health & Wellbeing	O	17.3.1.2.5	Neutral	Not Significant
Secondary Impact of Climate Impacts on Health & Wellbeing	O	17.3.1.2.6	Not Significant (positive)	Not Significant (positive)
Secondary Impact of Landscape Impacts on Local Community Wellbeing	O	17.3.1.2.7	Neutral	Not Significant
Chapter 17: Population & Human Health – Local Economy & Tourism				
Improvements in County Budget due to Commercial Rates	O	17.3.2.2.1	Slight (positive)	Slight (positive)
Decrease in local property value	O	17.3.2.2.4	Imperceptible – Slight	Imperceptible - Slight

Factor - Sensitive Aspect Impact Title	Project Phase	EIAR Section	Pre-Mitigation ➡ Impact Significance	Residual Impact Significance
Secondary impact on walking & cycling routes tourism from the presence of a windfarm in the landscape	O	17.3.2.2.5	Slight	Slight
Secondary impact on scenic routes tourism from the presence of a windfarm in the landscape	O	17.3.2.2.6	Slight	Slight
Secondary impact on amenity areas tourism from the presence of a windfarm in the landscape	O	17.3.2.2.7	Slight	Slight
Gross value added to businesses & employment opportunities	C	17.3.2.2.2	Imperceptible (positive)	Imperceptible (positive)
Strengthening the local economy	O	17.3.2.2.3	Imperceptible (positive)	Imperceptible (positive)