

Table of Contents

1.	Inti	roduction	1-1
	1.1	Statement of Authority	1-4
	1.2	Background to the Environmental Impact Assessment (EIA)	1-4
	1.3	Limitations and Assumptions	1-4
	1.4	The Applicant	1-5
	1.5	The need for the proposed project	1-5
	1.6	Site Location and Background	1-8
	1.7	Legislative Context and Development Guidelines	1-12
	1.8	Cumulative Impact Assessment	1-18
	1.9	Study Team and Contributors to the EIAR	1-22
	1.10	Scoping and Consultation	1-26
	1.11	References	1-31
2.	De	scription of Proposed Project	2-1
	2.1	Introduction	2-1
	2.2	Statement of Authority	2-3
	2.3	The site of the proposed project	2-4
	2.4	Power output	2-4
	2.5	Community Benefit Proposal	2-5
	2.6	Landownership	2-5
	2.7	On-site Wind Resource	2-6
	2.8	Proposed Site Layout	2-6
	2.9	Construction Methodologies	2-22
	2.10	Construction Management	2-32
	2.11	Health & Safety	2-44
	2.12	Wind Farm Operation	2-45
	2.13	References	2-46
3.	Co	nsideration of Reasonable Alternatives	3-1
	3.1	Introduction	3-1
	3.2	Statement of Authority	3-2
	3.3	Methods	3-2
	3.4	Consideration of Alternatives	3-3
	3.5	Alternative Processes	3-44
	3.6	Conclusions	3-45



	3.7	References	3-45
4.	Pol	licy, Planning and Development Context	4-1
	4.1	Introduction	4-1
	4.2	Statement of Authority	4-3
	4.3	Planning Legislation	4-3
	4.4	Planning and Development Policy Context	4-5
	4.5	Need for the Development	4-30
	4.6	Summary	4-32
	4.7	References	4-34
5.	Pop	pulation and Human Health	5-1
	5.1	Introduction	5-1
	5.2	Methods	5-8
	5.3	Existing Environment	5-14
	5.4	Potential Effects	5-47
	5.5	Mitigation Measures	5-63
	5.6	Residual Effects	5-65
	5.7	Cumulative Effects	5-66
	5.8	Conclusion	5-68
	5.9	References	5-69
6	Bio	odiversity	6-1
	6.1	Introduction	6-1
	6.2	Brief Description of the Proposed Project	6-1
	6.3	Brief Description of the Proposed Project Site	6-1
	6.4	Purpose of this Report	6-2
	6.5	Relevant Legislation and Policy	6-3
	6.6	Methods	6-3
	6.7	Baseline Data Collection	6-5
	6.8	Project Team	6-19
	6.9	Assessment Approach	6-20
	6.10	Existing Environment	6-22
	6.11	Embedded Mitigation	6-86
	6.12	Assessment of Effects and Mitigation Measures	6-86
	6.13	Conclusion	6-138
	6.14	References	6-139



7.	Ori	nithology	7-1
	7.1	Introduction	7-1
	7.2	Statement of Authority	7-1
	7.3	Relevant Legislation, Policy and Guidance	7-1
	7.4	Methods	7-3
	7.5	Existing Environment	7-14
	7.6	Embedded Mitigation	7-31
	7.7	Bird Protection Plan	7-32
	7.8	Potential Effects	7-33
	7.9	Proposed Mitigation and Monitoring	7-40
	7.10	Residual Effects	7-41
	7.11	Cumulative Effects	7-41
	7.12	Conclusions	7-45
	7.13	References	7-46
8	Lar	nd, Soils and Geology	8-1
	8.1	Introduction	8-1
	8.2	Methodology	8-3
	8.3	Existing Environment	8-8
	8.4	Potential Effects	8-27
	8.5	Mitigation Measures	8-34
	8.6	Residual Effects	8-39
	8.7	Cumulative Effects	8-40
	8.8	Conclusion	8-42
	8.9	References	8-43
9.	Ну	drology and Hydrogeology	9-1
	9.1	Introduction	9-1
	9.2	Statement of Authority	9-1
	9.3	Methodology	
	9.4	Receiving Environment	9-15
	9.5	Potential Likely Significant effects	9-45
	9.6	Mitigation Measures	
	9.7	Residual Effects	9-64
	9.8	Cumulative Effects	9-66
	9.9	References	9-68



10.	Sha	adow Flicker	10-1
	10.1	Introduction	10-1
	10.2	Methodology	10-2
	10.3	Existing Environment	10-7
	10.4	Potential Effects	
	10.5	Mitigation Measures	
	10.6	Residual Effects	
	10.7	Cumulative Effect	
	10.8	Conclusion	
	10.9	References	10-17
11.	Ма	terial Assets	11-1
	11.1	Introduction	11-1
	11.2	Methodology	11-2
	11.3	Existing Environment	11-7
	11.4	Potential Effects	11-18
	11.5	Mitigation Measures	11-26
	11.6	Residual Effects	
	11.7	Cumulative Effects	11-31
	11.8	Conclusion / Summary	11-32
	11.9	References	11-33
12.	NC	DISE AND VIBRATION	12-1
	12.1	Introduction	12-1
	12.2	Methods	
	12.3	Existing Environment	
	12.4	Potential Effects	
	12.5	Mitigation Measures	
	12.6	Residual Effects	
	12.7	Cumulative Effects	
	12.8	Conclusion	
	12.9	References	
13.	Lar	ndscape and Visual Impact Assessment	13-1
	13.1	Introduction	13-1
	13.2	Assessment Methodology	13-3
	13.3	Existing Environment	13-12



	13.4	Potential Effects	13-36
	13.5	Do nothing scenario	13-37
	13.6	Likely Evolution of the Baseline	13-37
	13.7	Mitigation Measures	13-38
	13.8	Potential Effects – Landscape Effects	13-40
	13.9	Potential Effects – Visual Effects	13-46
	13.10	Turbine Range Assessment	13-58
	13.11	Cumulative Effects	13-59
	13.12	Conclusion	13-66
14.	Air	Quality and Climate	14-1
	14.1	Statement of Authority	14-1
	14.2	Air Quality	14-2
	14.3	Climate	14-28
15.	Arcl	naeology and Cultural Heritage	15-1
	15.1	Introduction	15-1
	15.2	Methodology	15-3
	15.3	Impact Assessment Methodology	15-7
	15.4	Existing Environment	15-11
	15.5	Potential Effects	15-42
	15.6	Mitigation Measures	15-45
	15.7	Residual Effects	15-46
	15.8	Cumulative Effects	15-46
	15.9	Conclusion	15-47
	15.10	References	15-47
16.	TRA	FFIC AND TRANSPORTATION	16-1
	16.1	Introduction	16-1
	16.2	Assessment Methodology	16-6
	16.3	Existing Environment	16-9
	16.4	Proposed Access Arrangements	16-11
	16.5	Construction Programme and haul routes	16-14
	16.6	Proposed Wind Farm Trip Generation	16-20
	16.7	Traffic Impact Assessment	16-23
	16.8	Potential Effects	16-27
	16.9	Mitigation Measures	16-35



	16.10	Residual Effects	16-39
	16.11	Cumulative Effects	16-40
	16.12	Road Safety Audit	16-43
	16.13	Conclusion	16-44
	16.14	References	16-45
17.	Maj	or Accidents and Natural Disasters	17-1
	17.1	Introduction	17-1
	17.2	Assessment Methodology	17-4
	17.3	Baseline Environment	17-8
	17.4	Potential Effects	17-13
	17.5	Residual Effects	17-20
	17.6	Cumulative Assessment	17-20
	17.7	Conclusion	17-21
	17.8	References	17-21
18.	Inte	raction of the foregoing	18-1
	18.1	Introduction	18-1
	18.2	Statement of Authority	18-1
	18.3	Discussion of Interactions	18-4
	18.4	Positive Interaction of Elements	18-13
	18.5	Major Accidents and Natural Disasters	18-13
	18.6	Conclusion	18-14
19.	Sch	edule of Mitigation Measures	19-1
	19.1	Introduction	19-1
	19.2	Schedule of Mitigation Measures	19-1
1 2 - 4	- 6 T- 1		
	of Tab		
	le 1-1:	Description of Effects (extract from EPA Guidelines (May 2022))	
Tab	le 1-2:	10 km – 20 km planning search	1-19
Tab	le 1-3:	Commercial developments within 3 km of the proposed wind farm site	1-21
Tab	le 1-4:	List of Contributors to the EIAR	1-22
Tab	le 1-5:	List of Competent Experts Contributing to the EIAR	1-23
Tab	le 1-6:	List of Consultees and Record of Consultation	1-29
Tab	le 2-1:	Turbine Location Details (ITM Co-ordinates)	2-7



Table 2-2:	Proposed Turbine Parameters	2-9
Table 2-3:	Watercourse crossing details	2-28
Table 3-1:	Environmental Impacts of the Do-Nothing Alternative relative to the Ch	
Table 3-2:	Summary of the key findings with respect to the site chosen for the propwind farm site	
Table 3-3:	Environmental Considerations	3-13
Table 3-4:	Layout design changes	3-21
Table 3-5:	Table of potential environmental impacts relative to current design propos	
Table 3-6:	Table of potential environmental impacts relative to proposed port of (with associated delivery route)	
Table 3-7:	Table of potential environmental impacts relative to proposed TDR	3-32
Table 3-8:	Table of potential environmental effects from alternative site entrance des	•
Table 3-9:	Potential environmental effects of alternative grid connection option relation to GCO One and Two	
Table 4-1:	Relevant Policy Objectives from the CDP in relation to climate action	4-30
Table 4-2:	Relevant Policy Objectives from the CDP in relation to renewable energy	4-30
Table 5-1:	EIAR Assessment Criteria from the EPA EIAR Guidelines (2022)	5-11
Table 5-2:	Agricultural Land Use in the Study Area (EDs)	5-15
Table 5-3:	Population Trends over the 10-year period 2011 - 2022 (CSO, 2022)	5-16
Table 5-4:	Population density of Electoral Divisions within the study area (CSO Ce 2022)	
Table 5-5:	Receptors Identified within the 2 km of the proposed Wind Farm Site	5-18
Table 5-6:	Property Receptors Identified as being closest to a Turbine	5-18
Table 5-7:	Labour Force Survey (Q4 2024)	5-25
Table 5-8:	Live Register Total Figures (Feb 2024 - Feb 2025)	5-25
Table 5-9:	Labour Force Figures (Census 2011 to Census 2022)	5-26
Table 5-10:	Labour Force by Industry County Kilkenny (Census 2016 & 2022)	5-27
Table 5-11:	Domestic Tourism Statistics 2022	5-27
Table 5-12:	Reported health status census 2022 for EDs surrounding the proposed farm site	
Table 6-1:	Waterbodies Within the Study Area of the Proposed Project	6-14



Table 6-2:	Summary of Designated Sites with a Source-Pathway-Receptor Link to the Proposed Project6-25
Table 6-3:	Threatened and Protected Flora Species Recorded by the (NPWS Sensitive Data Request) for Hectads S52 and S626-30
Table 6-4:	Protected Fauna Records from the NBDC for Hectads S51, S52, S53, S61, S62 and S636-32
Table 6-5:	Third Schedule (Regulation S.I. 477) Invasive Non-Native Flora Species as Recorded by the NBDC within Hectads S51, S52, S53, S61, S62 and S636-39
Table 6-6:	Third Schedule (Regulation S.I. 477) Invasive Non-Native Fauna Species as Recorded by the NBDC within Hectads S51, S52, S53, S61, S62 and S636-42
Table 6-7:	Total Bat Passes Per Species from Bat Detector Deployment6-64
Table 6-8:	Summary of Important Ecological Features Subject to Detailed Assessment6-73
Table 6-9:	Short-term and Permanent IEF Habitat Loss6-91
Table 6-10:	Pond Liner Types and Advantages and Disadvantages 6-120
Table 6-11:	Summary of Important Ecological Features Subject to Detailed Assessment 6-128
Table 7-1:	Summary of survey effort for VPS
Table 7-2:	Evaluation criteria for determining the importance of ornithological features 7-9
Table 7-3:	Statutory designated sites with ornithological features considered to have potential connectivity to the proposed project
Table 7-4:	Summary of target species flights recorded during 2023-2025 VPS7-16
Table 7-5:	Predicted collisions for Worst-Case Turbine Model7-19
Table 7-6:	Predicted collisions for Best-Case Turbine Model7-19
Table 7-7:	Summary of Important Ornithological Features Subject to Detailed Assessment7-20
Table 7-8:	Summary of Avifauna Key Receptors Scoped out of the Assessment7-23
Table 7-9:	Wind Farms within 20 km of the proposed project7-41
Table 7-10:	Summary of Potential Impacts, proposed Mitigation, Significance of Effect and Residual Effects7-44
Table 8-1:	Estimation of the land, soils and geology receptor sensitivity 8-6
Table 8-2:	Criteria to Determine the Magnitude of Impact and Examples8-7
Table 8-3:	Impact assessment matrix for determination of significance of effect 8-8
Table 8-4:	Ground profile for each turbine location and associated infrastructure8-23
Table 8-5:	Volume Summary8-30



Table 8-6:	construction phase8-39
Table 8-7:	Summary of post-mitigation effects on the receiving environment during the operational phase8-39
Table 8-8:	Summary of post-mitigation effects on the receiving environment during the decommissioning phase
Table 9-1:	Consultation responses relevant to hydrology and hydrogeology 9-6
Table 9-2:	Sensitivity of Hydrological Attribute9-10
Table 9-3:	Sensitivity of Hydrogeology Attribute9-11
Table 9-4:	Definitions of Magnitude9-13
Table 9-5:	Significance of Environmental Effect (Adapted from EPA Guidelines 2022 and IGI Guidelines 2013)9-14
Table 9-6:	Waterbodies Status and Risk within the proposed project study area9-19
Table 9-7:	Waterbodies crossed by the proposed GCO One and works areas along the proposed TDR9-20
Table 9-8:	Biotic Index of Water Quality9-20
Table 9-9:	Q values at EPA monitoring locations downstream from proposed project9-22
Table 9-10:	Surface Water Sampling Results (March 2025)9-26
Table 9-11:	Surface water field measurements results (March 2025)9-26
Table 9-12:	River Flow estimates - Hydrotool9-28
Table 9-13:	Bedrock Aquifer Classification and Characteristics9-31
Table 9-14:	Groundwater Wells and Springs identified within 2 km from the proposed wind farm (GSI)9-40
Table 9-15:	Designated sites in proximity to the proposed wind farm site9-44
Table 9-16:	Proposed change to watercourse crossing as a result of the proposed project 9-49
Table 9-17:	Significance of Hydrological Effects - Construction Phase (Pre mitigation) 9-54
Table 9-18:	Significance of Hydrological Criteria - Operational Phase (Pre mitigation)9-55
Table 9-19:	Significance of Hydrological Criteria - Decommissioning Phase (Pre mitigation)9-56
Table 9-20:	Recommended Buffer Zone Widths
Table 10-1:	Predicted Daily and Annual Shadow Flicker Effects10-11
Table 11-1:	EIAR Assessment Criteria adapted from the EPA EIAR Guidelines (2022).11-6
Table 11-2:	Telecommunication Consultation information11-8
Table 11-3:	Aviation Consultation information



Table 11-4:	Waste Licence Facilities in County Kilkenny and surrounding counties 11-15
Table 12-1:	Threshold of Potential Significant Effect at Dwellings
Table 12-2:	Likely Impacts Associated with Change in Traffic Noise Level12-7
Table 12-3:	Allowable Vibration at Sensitive Properties (NRA, 2004)12-8
Table 12-4:	NG4 Approach for Determining Appropriate Noise Criteria 12-20
Table 12-5:	Noise Measurement Coordinates
Table 12-6:	Met Mast Location
Table 12-7:	L _{WA} Levels for various hub heights (HH)
Table 12-8:	Turbine Directivity Attenuation with Consideration of Wind Direction $12-30$
Table 12-9:	Derived Background Noise Levels of $L_{A90,10\text{-min}}$ for Various Wind Speeds . 12-31
Table 12-10:	Representative Background Noise Levels
Table 12-11:	Derived Turbine Noise Limited for a Hub Height at 105.5 m
Table 12-12:	Anticipated Wind Farm Turbine Construction Noise Emission Levels 12-38
Table 12-13:	Indicative Noise Levels from Construction Plant at Various Distances from Site Roads
Table 12-14:	Proposed Borrow Pit Locations
Table 12-15:	Plant Noise Emissions
Table 12-16:	Prediction Noise Levels from Borrow Pit Activity at Nearest NSLs 12-41
Table 12-17:	Indicative Noise Levels for Typical Construction Plant at Various Distances from the Grid Connection Works
Table 12-18:	Predicted Turbine Noise Levels with Potential Cumulative Exceedances (N163)
Table 12-19:	Review of Predicted Exceedances in Various Wind Direction Sectors – H270 12-47
Table 12-20:	Review of Predicted Exceedances in Various Wind Direction Sectors – H272 12-47
Table 12-21:	Review of Predicted Exceedances in Various Wind Direction Sectors – H557 12-49
Table 12-22:	Extent of Potential Maximum Exceedance for N163 Turbine at H272 12-54
Table 12-23:	Extent of Potential Maximum Exceedance for N163 Turbine at H557 12-55
Table 12-24:	Curtailment Strategy for N163 Turbine to Address Potential Exceedances at 9 m/s
Table 13-1:	Landscape Value and Sensitivity13-6
Table 13-2:	Magnitude of Landscape Effects13-7
Table 13-3:	Effect Significance Matrix



Table 13-4:	Magnitude of Visual Effect	11
Table 13-5:	Rationale for selection of scenic designations within relevant Court Development Plans	-
Table 13-6:	Outline description of selected Viewpoints (VPs)13-	34
Table 13-7:	Summary of Operational Stage Visual Effects at Viewshed Reference Point (VRP's)	
Table 13-8:	Magnitude of Cumulative Effect	61
Table 13-9:	Cumulative Wind Farms within the study area	62
Table 14-1:	IAQM Criteria to Determine Dust Emissions Magnitude14	1-3
Table 14-2:	IAQM Criteria to Determine Risk of Dust Impacts14	1-5
Table 14-3:	Ambient Air Quality Limit Values14	1-7
Table 14-4:	WHO Air Quality Guidelines14	1-9
Table 14-5:	National Air Emission Targets (Ireland's Air Pollutant Emissions 2020 to 2030	
Table 14-6:	Baseline Zone D Air Quality - PM ₁₀ 14-	13
Table 14-7:	Criteria for Determining the Sensitivity of the Area to Construction Dust 14-	15
Table 14-8:	Risk of Construction Dust Impacts Used to Define Site-Specific Mitigation 14-	
Table 14-9:	Predicted Impact of Ballyfasy Wind Farm Project on Ireland's National Emissic Ceiling Obligations	
Table 14-10:	Standard Construction Dust Management Measures14-	21
Table 14-11:	Summary of Air Quality Effects Post Mitigation	26
Table 14-12:	5-Year Carbon Budgets 2021 – 2035	31
Table 14-13:	2030 Sectoral Emissions Ceilings	32
Table 14-14:	Greenhouse Gas Assessment (GHGA) Significance Criteria	40
Table 14-15:	Climate Change Vulnerability Matrix14-	43
Table 14-16:	Trends in Total National GHG Emissions 2022 - 202414-	44
Table 14-17:	Construction Phase GHG Emissions	52
Table 14-18:	Estimated Construction Phase GHG Emissions Relative to Sectoral Budgets a GHG Baseline	
Table 14-19:	Estimated Operational Phase Project GHG Savings14-	54
Table 14-20:	Climate Change Vulnerability Assessment	56
Table 14.21:	Summary of Effects Post Mitigation14-	62
Table 15-1:	Study Area Definitions	5-4



Table 15-2:	Criteria for determination of receptor sensitivity	15-9
Table 15-3:	Criteria for determination of Magnitude of Impact	15-10
Table 15-4:	Impact assessment matrix for determination of significance of effect.	15-11
Table 15-5:	Previous excavations within the Study Area	15-17
Table 15-6:	Recorded Archaeological Sites within the Study Area	15-20
Table 15-7:	Recorded Architectural Heritage Sites within the Study Area	15-30
Table 15-8:	Designed landscapes within the 5 km study area	15-32
Table 15-9:	Stray finds recorded by the National Museum of Ireland	15-33
Table 15-10:	Cultural Heritage Sites within the Receiving Environment	15-34
Table 15-11:	Townlands within the proposed wind farm site, GCOs and TDR accomareas	
Table 16-1:	Traffic Survey Results Approach Flows	16-11
Table 16-2:	Construction Programme Summary	16-14
Table 16-3:	Quarries and Haul Routes	16-16
Table 16-4:	Traffic Generation during the Construction Phase - AIL	16-20
Table 16-5:	Construction Programme 1-way HV Construction Volumes per Day Turbine Foundation Concrete Pours)	_
Table 16-6:	Construction TII Growth Factors (Extract from PE-PAG-02017, Octol	
Table 16-7:	Do-Nothing Traffic Flows	16-25
Table 16-8:	Summary Peak Construction Daily Trip Generation	16-26
Table 16-9:	Do-Something Traffic Flows	16-27
Table 16-10:	Construction Haul Route Impact - Potential Impact	16-28
Table 16-11:	Construction Haul Route- EAP Criteria Effect	16-29
Table 16-12:	Swept Path Analysis- Drawings and Actions (*P: Pinch Point as per TD	
Table 16-13:	AIL Haul Route – EPA Criteria Effect	16-31
Table 16-14:	Grid Connection Route- EPA Criteria Effect	16-32
Table 16-15:	Operational Phase - EPA Criteria Effect	16-33
Table 16-16:	Decommission Traffic- EPA Criteria Effect	16-34
Table 16-17:	Residual Effect- EPA Criteria Effect	16-40
Table 16-18:	Cumulative Effect- EPA Criteria Effect	16-43
Table 17-1:	Key considerations as Described in EIA Directive	17-4
Table 17-2.	Classification of Likelihood (adapted from DoEHLG 2010 guidance)	17-6

Table 17-3:	Classification of Consequence (adapted from DoEHLG (2010) guidance	e)1/-/
Table 17-4:	Impact Assessment Matrix (adapted from DoEHLG (2010) guidance)	17-8
Table 17-5:	Major Accidents and Natural Disasters – Stage 1 Risk Register	17-14
Table 17-6:	Major Accidents and Disasters – Risk Classification Considering Mitiga	
Table 17-7:	Risk Assessment Evaluation	17-20
Table 18-1:	Interaction between Environmental Factors	18-2
Table 19-1:	Table of Mitigation Measures	19-2
List of Figur	es	
Figure 1-1:	Proposed Project Extent	1-3
Figure 1-2:	Wind farm site showing proposed site entrances	1-11
Figure 1-3:	Wind farms in proximity to the wind farm site	1-20
Figure 2-1:	Proposed Wind Farm Site Layout	2-8
Figure 2-2:	Turbine nacelle and hub components	2-11
Figure 2-3:	Material Haul Routes	2-14
Figure 2-4:	Proposed Grid Connection Options	2-19
Figure 2-5:	Watercourse Crossings	2-29
Figure 2-6:	Indicative Construction Schedule	2-35
Figure 3-1:	Constraints Map	3-16
Figure 3-2:	Site Layout Design History Map -Turbine Locations	3-18
Figure 3-3:	Site Layout Design History Map -Turbine Locations	3-19
Figure 3-4:	Alternative Turbine Delivery Route	3-31
Figure 3-5:	Proposed site entrances design and alternatives considered	3-34
Figure 3-6:	Alternative grid connection options	3-39
Figure 3-7:	Substation options	3-43
Figure 4-1:	Elements of the Green Deal	4-9
Figure 4-2:	Regional Renewable Energy Capacity Allocations	4-17
Figure 5-1:	Proposed Wind Farm Site and Electoral Divisions (EDs)	5-13
Figure 5-2:	Properties identified in proximity to the Wind Farm Site	5-19
Figure 6-1:	Potential Roost Assessment (PRA) and Ground Level Tree Assessmen Survey Area	
Figure 6-2:	Dusk Emergence Bat Survey of Buildings	6-9



Figure 6-3:	GLTA and Aerial/Close Inspection with Tree Survey Results	6-10
Figure 6-4:	Locations of Bat Static Detectors	
Figure 6-5:	Aquatic Survey Site Locations Within and Downstream of the Propos	
rigure 0-5.	Farm Site	
Figure 6-6:	Aquatic Survey Site Locations at the Proposed GCO One	6-16
Figure 6-7:	Sites Designated for Nature Conservation within the ZoI of the Propose	d Project
		6-24
Figure 6-8:	Habitat Map of the Proposed Project Site	6-54
Figure 6-9:	Habitat Map of the Proposed GCO One	6-55
Figure 6-10:	Habitat Map of TDR Works Area 10	6-56
Figure 6-11:	Habitat Map of TDR Works Area 11 and 12	6-57
Figure 6-12:	Habitat Map of TDR Works Area 13	6-58
Figure 6-13:	Habitat Map of TDR Works Area 14	6-59
Figure 6-14:	Badger Activity Recorded within the Proposed Project near T6	6-61
Figure 6-15:	Root Protection Areas Along the Proposed GCO One	6-95
Figure 6-16:	Proposed Compensation and Enhancement Measures	6-122
Figure 8-1:	Study Area	8-2
Figure 8-2:	Soils Map – proposed windfarm and GCO One and Two	8-12
Figure 8-3:	Soils Map - TDR	8-13
Figure 8-4:	Subsoils Map – proposed windfarm and GCO	8-14
Figure 8-5:	Subsoils Map – TDR	8-15
Figure 8-6:	Bedrock Geology Map – proposed windfarm and GCO	8-17
Figure 8-7:	Bedrock Geology Map – TDR	8-18
Figure 8-8:	Site investigation location map	8-20
Figure 9-1:	Hydrological and Hydrogeological Assessment study area	9-9
Figure 9-2:	Regional Catchment Delineation Overview	9-18
Figure 9-3:	Surface water features and EPA surface water monitoring locations	9-21
Figure 9-4:	Surface Water Monitoring Locations	9-25
Figure 9-5:	Aquifer Map	9-32
Figure 9-6:	Groundwater Vulnerability Map	
Figure 9-7:	Groundwater Recharge	
Figure 9-8:	Groundwater Abstractions – proposed wind farm site and GCOs	
Figure 10-1:		



Figure 12-1:	dB(A) Scale & Indicative Noise Levels – (EPA NG4 – 2016))	12-3	
Figure 12-2:	Map of Noise Monitoring Locations	12-25	
Figure 12-3:	Sound Power Levels for Eight Turbine Types and Specifications Con		
Figure 12-4:	Contextual Location of H270 and H271	12-35	
Figure 12-5:	Construction Layout in relation to Noise Sensitive Locations	12-37	
Figure 13-1:	Full 20 km extent of the Study Area	13-3	
Figure 13-2:	Landscape context of the proposed wind farm site and central study a	area 13-13	
Figure 13-3:	Excerpt from the current Kilkenny CDP showing the location of the proposed turbines in relation to the Kilkenny Landscape Character Assessment 13-19		
Figure 13-4:	Excerpt from the current Kilkenny County Development Plan sh location of the proposed wind farm site in relation to wind energy cla	ssifications	
Figure 13-5:	Excerpt from Volume 7 of the current Wexford CDP showing landscapes within the wider eastern extent of the wider study area		
Figure 13-6:	Bare-ground Zone of Theoretically Visibility (ZTV) Map based on a height of 180 m. (see Appendix 13-2 for a larger scale map)	-	
Figure 13-7:	Map of Viewpoint Locations	13-36	
Figure 13-8:	Turbine 'scale in relation to distance' relationship	13-40	
Figure 13-9:	Cumulative ZTV Map (Tip Height (180 m) – represents a worst case terms of potential turbine visibility with regard to the variation dimensions) for Ballyfasy Wind Farm identifying the potential interthe proposed Wind Farm and all other existing and consented wind fathe study area (See Appendix 13.2 for larger version)	in turbine visibility of arms within	
Figure 14-1:	Wind Roses for Johnstown Castle	14-12	
Figure 14-2:	Construction Dust Assessment - Sensitive Receptors within 250m of Boundary, Grid Connection and Turbine Delivery Route		
Figure 14-3:	1900-2023 Temperature (°C) Temperature Anomalies (differences f		
Figure 14-4:	Representative Concentration Pathways associated emission le TRANSLATE project storymap (Met Éireann, 2023b)		
Figure 14-5:	Change of climate variables for Ireland for different Global warming (Met Éireann 2023b)		
Figure 14-6:	Future Projected Impacts of Climate Events on Kilkenny County Cou 2024)	•	
Figure 14-7:	Construction Phase Greenhouse Gas Emissions by Activity	14-51	
Figure 16-1	Site Location at Regional Level	16-2	



Figure 16-2:	Site Location at Local Level	16-3
Figure 16-3:	Assessment Junctions	16-8
Figure 16-4:	Site Entrances and Temporary Crossing Points	16-13
Figure 16-5:	Construction Haul Routes	16-17
Figure 16-6:	AIL Delivery Routes / Turbine Delivery Route (TDR)	16-19
•	Graphical representation of the Construction Traffic over epresenting 1-way movement per Day - Excluding Concrete Pour H	
Figure 16-8:	Cumulative Developments in the Local Area	16-41

Environmental Impact Assessment Report (EIAR) Abbreviations List

ACAs - Architectural Conservation Areas

AD - Anaerobic Digestion

AIA - Archaeological Impact Assessment

AM - Amplitude Modulation

AMOC - Atlantic Meridional Overturning Circulation

AMSL - Above mean sea level

AMWG - Amplitude Modulation Working Group

ANSP - Air Navigation Services Provider

AQMA - Air Quality Management Area

BBS - Breeding Bird Surveys

BCI - Bat Conservation Ireland

BERR - Department for Business, Enterprise and Regulatory Reform

Bgl - below ground level

BoCCI - Bird of Conservation Concern Ireland

BPF - Blade Passing Frequency

BTI - British Trust for Ornithology

CAN - Climate Action Network

CAP-Climate Action Plan

CCRA - Climate Change Risk Assessment

CDP - County Development Plan

CEBR - Centre of Economics and Business Research

CEcol - Chartered Ecologist

CEMP - Construction and Environmental Management Plan

CERIS - Centre for Economic Research on Inclusivity and Sustainable

CGBM - Cement Bound Granular Mixture

Chpt 1 to Chpt 17

CLG - Department of Communities and Local Government

CLO - Community Liaison Officer

CRM - Collision Risk Modelling

CRZs - Collision Risk Zones



CSO - Central Statistics Office

CSRD - Corporate Sustainability Reporting Directive

DAU - Development Applications Unit

dB - Decibels

DECC - Department of Energy and Climate Change

DECC - Department of the Environment, Climate and Communications

DEFRA - Department of Environment Food and Rural Affairs

DoEHLG - Department of the Environment, Heritage and Local Government

DoHPCLG - Department of Housing, Planning, and Community and Local Government

DoHPLG - Department of Housing, Planning and Local Government

EAS - Emergency Aeromedical Service

EEAG - Environmental Protection and Energy Guidelines

EIAR - Environmental Impact Assessment Report

EPA - Environmental Protection Agency

ETS - Emissions Trading System

ETSU - Energy Technology Support Unit

EU - The European Union

FPO - Flora Protection Order

GASU - Garda Air Support

GCO - Grid Connection Options

GHG - Greenhouse Gas

GIS - Geographic Information Systems

GRA - Global Renewables Alliance

GSI - Geological Survey of Ireland

GSM-R - Global System for Mobile Communications - Railway

GWBs - Groundwater bodies

GWS - Group Water Scheme

Ha-Hectare

HDD - Horizontal Directional Drilling

HGVs - Heavy Goods Vehicles

HIA - Health Impact Assessment



HSA- Health and Safety Authority

HV - High voltage

Hz - Hertz

IAQM - The Institute of Air Quality Management

ICAO - International Civil Aviation Organization

ICHEC - Irish Centre for High End Computing

IEA - International Energy Agency

IEC - The International Electrotechnical Commission

IFI - Inland Fisheries

IFPs - Instrument Flight Procedures

IHPA - The Irish Hang Gliding and Paragliding Association

ILO - International Labour Organisation

ILS - Instrument Landing System

IOA - Institute of Acoustics

IOFs - Important Ornithological Features

IPCC - Intergovernmental Panel on Climate Change

IWEA - Irish Wind Energy Industry

IWT - Irish Wildlife

LI - Locally Important

LiDar - Light Detection and Ranging

LSE - London School of Economics

MIEI - Member of the Institute of Engineers Ireland

MIOA - Member of Institute of Acoustics

MSA - Minimum Sector Altitudes

MW-Megawatt

MWh - (Megawatt hours)

NAF - National Adaption Framework

NCMP - Noise Compliance Monitoring Programme

NECPs - National Energy and Climate Plans

NEEAP - National Energy Efficiency Action Plan

NFCS - National Framework for Climate Services



NFGWS - National Federation of Group Water Schemes

NHA - National Heritage Area

NHMRC - National Health and Medical Research Council

NIAH - The National Inventory of Architectural Heritage

NIFM - National Indicative Fluvial Mapping

NIS - Natura Impact Statement

NO₂ - Nitrogen Dioxide

NOx - Nitrogen Oxides

NPF- National Planning Framework

NPWS - National Parks and Wildlife Service

NREAP - National Renewable Energy Action Plan

NSL - Noise sensitive location

NTS - Non-Technical Summary

OHL - Overhead Line

OLS - Obstacle Limitation Surfaces

PFRA - Preliminary Flood Risk Assessment

pNHA - proposed National Heritage Area

PPV - Peak Particle Velocity

PSCS - Project Supervisor Construction Stage

PSDP - Project Supervisor Design Process

PV - Photovoltaic

PWS - Public Water Supplies

RBDs - River Basin Districts

RBMPs - River Basin Management Plans

RCP - Representative Concentration Pathways

RCPs - Representative Concentration Pathways

RED - The Renewable Energy Directive

RESS - Renewable Electricity Support Scheme

RMP - Record of Monuments and Places

RPPI - Residential Property Price Index

RRES - Regional Renewable Energy Strategy



RSES - Regional Spatial and Economic Strategy

SAC - Special Area of Conservation

SEAI - Sustainable Energy Authority of Ireland

SFCM - Shadow flicker control modules

SID - Strategic Infrastructure Development

SMR - Sites and Monuments Record

SO - System Operators

SPA - Source Protection Area

SPL - Sounds Pressure Levels

SPZ - Source Protection Zone

SST - Sea Surface Temperatures

SuDs - Sustainable Drainage Systems

SWMP - Surface Water Management Plan

TDR - Turbine Delivery Route

TII - Transport Infrastructure Ireland

UNCED - United Nations Conference on Environment and Development

UNFCCC - UN Framework Convention on Climate Change

VPS - Vantage Point Surveys

WAM - With Additional Measures

WEDG - Wind Energy Development Guidelines

WEM – With Existing Measures

WFD - Water Framework Directive

WHO - World Health Organisation

Zol - Zone of Influence

ZVI - Zone of Visual Influence