Planning and Environmental Consultants

Environmental Impact Assessment Report (EIAR)

Killoshulan Wind Farm

Glossary of Terms (EIAR)



DOCUMENT DETAILS

Client:	**Killoshulan Renewable Energy Ltd.**
Project Title:	**Killoshulan Wind Farm**
Project Number:	**260172**
Document Title:	**Environmental Impact Assessment Report (EIAR)**
Document File Name:	**Glossary of Acronyms & Terms - F - 2026.10.28 - 260172**
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Rev	Status	Date	Author(s)	Approved By
00	F	28/10/2026	ER	JF

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GLOSSARY OF TERMS

1 # Introduction

GLOSSARY OF TERMS

Term	Definitions
Guidelines (DoEHLG, 2006)	The 2006 Wind Energy Development Guidelines. The current published wind energy development guidelines which addresses a variety of aspects relating to wind energy developments inclusive of noise, shadow flicker, setback distances and community obligations
Draft 2019 Guidelines (DoHPLG, 2019)	The Draft 2019 Wind Energy Development Guidelines. A draft document of the updated Wind Energy Development Guidelines yet to be published.
Natura Impact Statement	NaA report prepared to assess the potential for a project to impact EU designated sites (i.e. Natura 2000 sites)
Renewable Energy Directive	An EU Directive which aims to accelerate the EU's renewable energy transition and promote energy independence
The Applicant	Killoshulan Renewable Energy Ltd.

GLOSSARY OF ACRONYMS

Acronym	Definition
AA	Appropriate Assessment
ACP	An Coimisiún Pleanála
BESS	Battery Energy Storage System
CAP	Climate Action Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
COP	Conference of the Parties
DCENR	Department of Communications, Energy & Natural Resources
DECC	Department of the Environment, Climate and Communication
DoEHLG	Department of the Environment, Heritage and Local Government
DoHPLG	Department of Housing, Planning and Local Government
DPER	Department of Public Expenditure and Reform
EC	European Commission
EEA	European Environment Agency
EIA	Environmental Impact Assessment

EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
GFC	Gross Final Consumption
GW	Gigawatt
GWL	Global Warming Levels
IEMA	Institute of Environmental Management and Assessment
IPCC	International Panel on Climate Change
kV	Kilovolt
MW	Megawatt
NECP	National Energy and Climate Plan
NESF	National Energy Security Framework
NIS	Natura Impact Statement
NOx	Nitric Oxide and Nitrogen Dioxide
NPWS	National Parks and Wildlife Service
O3	Ozone
PM	Particulate Matter
RED	Renewable Energy Directive
REDIII	Third Revision of the Renewable Energy Directive
RES	Renewable Energy Share
SEAI	Sustainable Energy Authority of Ireland
SID	Strategic Infrastructure Development
SO2	Sulphur Dioxide
TWh	Terawatt Hour
UNFCCC	United Nations Framework Convention on Climate Change
WAM	With Additional Measures
WEM	With Existing Measures

WHO	World Health Organization
WMO	World Meteorological Organisation

2 Background to the Proposed Project

GLOSSARY OF TERMS

Terms	Definition
Carbon Budgets	The maximum cumulative amount of greenhouse gas emissions that can be released into the atmosphere while limiting global warming to a specified level, between 1.5 and 2 degrees
Climate Action Plan	National framework document for measuring, tracking and reducing greenhouse gas emissions and adopting climate adaptation measures.
Climate Action and Low Carbon Development (Amendment) Act	Ireland's legally binding framework which aims to achieve a climate-neutral economy by 2050, requiring a 51% reduction in greenhouse gas emissions by 2030
Climate Change Advisory Council	An Independent advisory body providing evidence-based advice and recommendations on policy to support Ireland's just transition to a biodiversity rich, environmentally sustainable, climate neutral and resilient society.
Conference of the Parties	The meetings of parties to the United Nations Framework Convention on Climate Change at which international climate action is reviewed and negotiated.
Cumulative Impact Assessment	An assessment of potential environmental effects of the Proposed Project in combination with other existing, permitted or proposed projects.
Draft Ministerial Direction	The proposed statutory intervention concerning specified renewable energy provisions and wind strategy areas of the Kilkenny City and County Development Plan 2021–2027.
Draft Revised Wind Energy Development Guidelines (2019)	Draft updated national guidance for the planning and assessment of wind energy development.
European Climate Law	The EU legislative framework establishing climate neutrality by 2050 and binding intermediate emissions-reduction objectives.
European Green Deal	An EU policy launched in 2019, aiming to cut emissions by at least 50% by 2030, rising towards 55%, while legally binding the 2050 neutrality goal through the European Climate Law.
Kyoto Protocol	An international treaty adopted in December 1997, requiring industrialised nations to reduce GHG emissions based on principle of common but differentiated responsibilities
National Energy Projections	Predictions of future energy use in Ireland under different scenarios and account for factors such as economic growth
National Energy Security Framework	Policy document produced by Irish government to provide an overarching and comprehensive response to Ireland's energy security needs in the context of the war in Ukraine.
National Planning Framework	A long-term, 20-year strategy for strategic planning and sustainable development of urban and rural areas to 2040, with the core objectives of securing balanced regional development and a sustainable 'compact growth,' approach to the form and pattern of future development.
Paris Agreement	A legally binding international treaty adopted in 2015 to combat climate change, aiming to limit global temperature rise to well below 2 degrees, preferably 1.5 degrees above pre-industrial levels

Planning and Development Act 2000	An Act which sets out the law relating to planning and development in Ireland.
Planning and Development Act 2024	An Act to consolidate and revise the law relating to planning and development in Ireland. Once fully commenced it will effectively supersede the Planning and Development Act 2000 and is acknowledged as a major reform to speed up housing delivery and make the planning system clearer and more efficient.
Regional Spatial and Economic Strategy	The statutory regional strategy setting out planning and development objectives for the Southern Region.
Renewable Energy Directive	An EU Directive which aims to accelerate the EU's renewable energy transition and promote energy independence
REPowerEU	A European Commission plan launched in May 2022 to rapidly reduce dependence on Russian fossil fuels and to accelerate the green energy transition following Russia's invasion of Ukraine.
Scoping	The process of consulting relevant bodies and identifying issues and information to be addressed in the EIAR.
Sectoral Emissions Ceilings	Limits on greenhouse gas emissions allocated to individual sectors of the Irish economy for specified carbon budget periods.
Strategic Area	Designated areas deemed most suitable for wind farm development due to high wind speeds, existing grid capacity and low environmental or residential constraints.
United Nations Framework Convention on Climate Change	1992 International Treaty aimed at stabilising atmospheric greenhouse gas concentrations to prevent dangerous human-induced climate interference.
Wind Energy Development Strategy	The wind energy policy and spatial strategy associated with the Kilkenny City and County Development Plan 2021-2027, subject to the draft Ministerial Direction and the previous Kilkenny City and County Development Plan 2014-2020 as discussed in Chapter 2.

GLOSSARY OF ACRONYMS

Acronym	Meaning
AA	Appropriate Assessment
ACP	An Coimisiún Pleanála
AIP	Acceptable in Principle
BAI	Broadcasting Authority of Ireland
CAP	Climate Action Plan
CB	Carbon Budget
CCAC	Climate Change Advisory Council
CEMP	Construction and Environmental Management Plan
CIP	Cleaning in Place
CLO	Community Liaison Officer

COP	Conference of Parties
CRU	Commission for Regulations of Utilities
DAFM	Department of Agriculture, Food and the Marine
DAU	Development Applications Unit
DCCAE	Department of Communications, Climate Action and Environment
DCENR	Department of Communications, Energy and Natural Resources
DECC	Department of the Environment, Climate and Communications
DoECC	Department of Environment, Climate and Communications
DoEHLG	Department of Environment, Heritage and Local Government
DoHPLG	Department of Housing, Planning and Local Government
DZ	Decarbonation Zone
ECP	Electricity Connection Policy
ECP-GSS	Electricity Connection Policy – Generation and System Services
EEC	European Economic Community
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
ESR	Effort Sharing Regulation
GW	Gigawatt
GWh	Gigawatt-hour
EU	European Union
GHG	Greenhouse Gas
GSACR	Global Shield Against Climate Risk
GST-1	First Global Stocktake
IAA	Irish Aviation Authority
IAQM	Institute of Air Quality Management
ICCA	Ireland's Climate Change Assessment
IEA	International Energy Authority
IPCC	Intergovernmental Panel on Climate Change
IWEA	Irish Wind Energy Association
KCC	Kilkenny County Council
KCCDP	Kilkenny City and County Development Plan 2021-2027
KCCDP 2014-2020	Kilkenny City and County Development Plan 2014-2020
kV	Kilovolt
LACAP	Local Authority Climate Action Plan
LCA	Landscape Character Assessment
LCC	Laois County Council
LED	Light Emitting Diode
LiDAR	Light Detection and Ranging
LNG	Liquefied Natural Gas
LVIA	Landscape and Visual Effects
MS	Microsoft Teams
MtCO2eq	Million tonnes of carbon dioxide equivalent

MW	Megawatts
NDP	National Development Plan
NESF	National Energy Security Framework
NGO	Non-Governmental Organisation
NIS	Natura Impact Statement
nm	nanometres
NPF	National Planning Framework
NPO	National Policy Objectives
NPWS	National Parks and Wildlife Service
NREAP	National Renewable Energy Action Plan
OPR	Office of the Planning Regulator
PAS	Plans to Accelerate Solutions
RED	Renewable Energy Directive
RES	Renewable Energy Sources / Renewable Energy Share (as used in context)
RESS	Renewable Electricity Support Scheme
RES-E	Renewable Energy Share in Electricity
RPO	Regional Policy Objective
RSES	Regional Spatial and Economic Strategies
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SEAI	Sustainable Energy Authority Ireland
SID	Strategic Infrastructure Development
SRA	Southern Regional Assembly
SuDS	Strategic Infrastructure Development
SWMP	Surface Water Management Plan
T	Turbine
TCC	Tipperary County Council
TII	Transport Infrastructure Ireland
TWh	Terawatt-hour
UHF	Ultra High Frequency
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WAM	With Additional Measures
WEDS	Wind Energy Development Strategy
WEM	With Existing Measures
WFD	Water Framework Directive
WGS	World Geodetic System
WMO	World Meteorological Organization

3 Site Selection and Reasonable Alternatives

GLOSSARY OF TERMS

Term	Definition
'Do-Nothing' Alternative	The environment of the site and its environs should the Proposed Project not be developed
Natura 2000 site	A designated, protected area for biodiversity within the European Union. These sites are legally protected under the European Union Habitats Directive and Birds Directive.
Natural Heritage Area	The basic designation for wildlife is the Natural Heritage Area. This is an area considered important for the habitats present, or which holds species of plants and animals whose habitat needs protection.
Proposed Natural Heritage Area	Wildlife protection areas that have not been statutorily proposed or designated. These sites are of significance for wildlife and habitats and cover approximately 65,000ha across Ireland. Designation will proceed on a phased basis over the coming years.
Special Area of Conservation	Prime wildlife conservation areas in Ireland, considered to be important on a European as well as an Irish level. The legal basis on which SACs are selected and designated is the EU Habitats Directive, transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended.
Shadow Flicker	A phenomenon when rotating wind turbine blades cast moving shadows over a narrow opening causing a rapidly alternating flickering light intensity
Special Protection Area	Protected sites designated under the EU Birds Directive (2009/147/EC) to conserve rare, vulnerable, and migratory bird species, along with their wetland habitats in Ireland.

GLOSSARY OF ACRONYMS

Acronym	Definition
BEMP	Biodiversity Enhancement and Management Plan
BESS	Battery Energy Storage System
CAP	Climate Action Plan
CRA	Collision Risk Assessment
EIA	Environmental Impact Assessment

EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
GIS	Geographical Information Systems
MW	Megawatt
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
KCCDP	Kilkenny City and County Development Plan
LVIA	Landscape and Visual Impact Assessment
NHA	Natural Heritage Area
NOF	National Planning Framework
OHL	Overhead Line
PV	Photovoltaic
pNHA	Proposed Natural Heritage Area
SAC	Special Area of Conservation
SEAI	Sustainable Energy Authority of Ireland
SPA	Special Protection Area
TDR	Turbine Delivery Route
ZTV	Zone of Theoretical Visibility

4 Description of the Proposed Project

GLOSSARY OF TERMS

Terms	Definition
Borrow Pit	A pit resulting from the excavation of material used in construction of the Proposed Wind Farm
Nacelle	Housing component of the turbine generator.
Anchor cage	The bottom section of the turbine (i.e. the foundation) which is backfilled with concrete
Piling	Installation of heavy stakes (piles) to support the foundations of the turbine
Hardstanding	Levelled assembly areas comprising of bare soil surface to support plant and machinery

GLOSSARY OF ACRONYMS

Acronym	Definition
ACP	An Coimisiún Pleanála
BEMP	Biodiversity Enhancement and Management Plan
CEMP	Construction and Environmental Management Plan
DP	Decommissioning Plan
ECoW	Ecological Clerk of Works
EnvCoW	Environmental Clerk of Works
GIS	Gas Insulated Switchgear
HGV	Heavy Goods Vehicle
IPC	Integrated Pollution Control
IPP	Independent Power Provider
JTF	Just Transition Fund
LV	Low Volt
MTN	Midlands Trail Network
MV	Medium Volt
OPW	Office of Public Works
OTE	Over-the-edge drainage
RESS	Renewable Energy Support Scheme
RWMP	Resource Waste Management Plan
SAC	Special Area of Conservation
SCADA	Supervisory Control and Data Acquisition
SID	Strategic Infrastructure Development
SOWOR	Schedule of Works Operation System
SPA	Special Protection Area
SWMP	Surface Water Management Plan
TMP	Traffic Management Plan
TSO	Transmission System Operator

5 Population and Human Health

GLOSSARY OF TERMS

Term	Definition
Shadow Flicker	A phenomenon when rotating wind turbine blades cast moving shadows over a narrow opening causing a rapidly alternating flickering light intensity
SEVESO site	Industrial facilities storing potentially dangerous substances in high quantities regulated under the EU SEVESO Directives
Sensitive Receptor	A component of the receiving environment which will experience an impact from the Proposed Project in some capacity

GLOSSARY OF ACRONYMS

Acronym	Definition
BESS	Battery Energy Storage System
CAHA	Climate and Health Alliance
CEBR	Centre for Economics and Business Research
CEMP	Construction Environmental Management Plan
CO_2	Carbon Dioxide
CSCS	Construction Skills Certification Scheme
CSO	Central Statistics Office
DP	Decommissioning Plan
ED	Electoral Division
EHS	Environmental Health Service
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ELF	Extremely Low Frequency
EMF	Electric Magnetic Fields
EPA	Environmental Protection Agency
GDG	Guideline Development Group
GW	Gigawatt
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HSE	Health Service Executive

IAA	Irish Aviation Authority
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEA	International Energy Agency
IEC	International Electrotechnical Commission
IEMA	Institute for Environmental Management and Assessment
IOA	Institute of Acoustics
ISEP	Institute of Sustainability and Environmental Professionals
IWEA	Irish Wind Energy Association
LBNL	Lawrence Berkley National Laboratory
LGV	Light Goods Vehicle
MW	Megawatt
NIMBY	Not In My Back Yard
OHL	Overhead Line
OSI	Ordnance Survey Ireland
PSCS	Project Supervisor Construction Stage
PSDP	Project Supervisor Design Process
RESS	Renewable Energy Support Scheme
SCADA	Supervisory Control and Data Acquisition
SEAI	Sustainable Energy Authority of Ireland
TMP	Traffic Management Plan
TTA	Traffic and Transport Assessment
WAM	With Additional Measures
WEI	Wind Energy Ireland
WEM	With Existing Measures
WHO	World Health Organisation
WTS	Wind Turbine Syndrome

6 Biodiversity

GLOSSARY OF TERMS

Terms	Definition
Avian receptors	bird species or populations within a project's "zone of influence" that may experience significant effects from a development
Barotrauma	in bat ecology refers to fatal internal injuries caused by extreme, rapid air pressure changes, particularly when bats fly near the fast-rotating blades of wind turbines
Baseline Ecological Conditions	the existing state of an ecosystem—including biodiversity, habitat quality, and species abundance—prior to development or human intervention
clustering process	an unsupervised data analysis process that groups sites, species, or environmental variables based on high similarity and low dissimilarity
County importance	a, usually non-statutory, designation for sites, habitats, or species that are considered significant at the county or local regional level, rather than national or international level
Cumulative effects	A cumulative effect is the total, combined impact of multiple, often individually minor, actions or events occurring over time
Delineated by the EIAR Site Boundary	indicated by the exact position of the EIAR site boundary
Designated sites	SACs (Special Areas of Conservation) and SPAs (Special Protection Areas) are internationally important, legally protected sites for nature conservation, forming the EU's Natura 2000 network
Ex-situ	off-site
Fossitt (2000)	A guide which provides a standard scheme for describing habitats in Ireland.
Ground level Static surveys	involve the deployment of automated, unattended monitoring equipment—most commonly bat detectors—left in place for extended, consecutive nights
Habitat mosaics	A combination of different ecological communities or habitat types within a landscape
Hydrogeology	the study of the occurrence, distribution, and movement of groundwater within the Earth's crust, particularly in aquifers
Hydrology	the study of the movement, distribution and quality of water and how it influences ecosystems, habitats and biodiversity
Incidental records	the unplanned or opportunistic sightings of species (fauna or flora) outside of a structured/ targeted survey
Invasive species	non-native organisms (plants, animals, fungi, or bacteria) introduced to a new ecosystem—usually by human activity—that cause, or are likely to cause, significant harm to the environment, economy, or human health
Irish Vegetation Classification	a comprehensive statistically based framework commissioned by the National Biodiversity Data Centre to map and describe all natural and semi- natural vegetation in Ireland
Key ecological receptors	are specific habitats, populations, or species—often those with high conservation value, legal protection, or critical ecosystem roles—

	that are most vulnerable to, and thus prioritized during, environmental impact assessments
Likely Zone of Influence	The area within which ecological features may be affected by changes resulting from a proposed project.
Local Ecological Importance	the modified nature and low biodiversity value of these habitats
Macrophyte communities	a collection of large aquatic plants—including vascular plants, bryophytes, and macro-algae—visible to the naked eye that grow in or near water bodies
Manual Transects	a fundamental, field-based ecological survey method used to study the distribution, abundance, and diversity of organisms (usually plants or sessile animals) along a specific path or environmental gradient
Multi- disciplinary walkover survey	a comprehensive, on-site survey conducted by a team of specialists to assess the ecological, environmental, and physical characteristics of a specific area
National Vegetation Database	A database which securely stores and manage Irish Vegatation data and serves as the core resource for the Irish vegetation classification.
Natural Heritage Areas (NHAs)	Legally designated, high priority conservation sites in Ireland protected under the Wildlife Amendment Act 2000, NHAs are areas considered important for the habitats present or which holds species of plants and animals whose habitat needs protection
Plant nomenclature	the formal, scientific naming system for plants
Proposed mitigation	the specific, planned actions outlined in a development proposal or Environmental Impact Assessment (EIAR) designed to avoid, reduce, or compensate for negative impacts on biodiversity and natural habitats
Proposed Natural Heritage Areas (pNHAs)	Sites containing important habitats, plant and animal species, or geological/geomorphological features, which are not directly protected by the Wildlife Acts but may be protected via local planning, particularly under the Planning and Development Acts.
Qualifying Interests	The specific habitats or species for which Special Areas of Conservation are designated under the EU Habitats Directive
Receptor valuation	the systematic identifying and assessing of the value of the receiving habitats, species or ecosystems which may be adversely affected by the development
Red line boundary	This boundary outlines the general extent of a property, site, or area of interest
Releve assessments	A **relevé assessment** (or survey) is a standardized, rapid sampling method used in ecology to describe and classify plant communities
Scoping exercise	a preliminary, systematic assessment used to define the boundaries, objectives, and feasibility of a project or research study including the identification of stakeholders and issues
Special Areas of Conservation	Designated for habitats (e.g., active raised bogs, reefs) and non-bird species listed under the EU Habitats Directive 92/43/EEC.
Special Conservation Interests	Specific species or habitats for which a site is designated as a Special Protection Area, primarily focusing on rare, vulnerable, or migratory birds, as well as wetlands
Special Protection Areas	Designated specifically for the protection of wild birds and their habitats under the EU Birds Directive 2009/147/EC.

GLOSSARY OF ACRONYMS

Acronyms	Definition
AA	Appropriate Assessment
AASR	Appropriate Assessment Screening Reports
AM	Angle Masts
BCI	Bat Conservation Ireland
BMEP	Biodiversity Management and Enhancement Plan
bpph	Bat Passes Per Hour
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CSZ	Core Sustenance Zone
DAU	Development Applications Unit
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EEC	European Economic Community
EM	End Masts
EnvCoW	Environmental Clerk of Works
ERICA	Engine for Relevés to Irish Communities Assignment
ESB	Electricity Supply Board
FPO	Flora Protection Order
GIS	Geographical Information Systems
HD	Habitats Directive
HDD	Horizontal Directional Drilling
IAS	Invasive Alien Species
IFI	Inland Fisheries Ireland
IMPs	Intermediate Pole Set
ISMP	Invasive Species Management Plan
IVC	Irish Vegetation Classification
KER	Key Ecological Receptor
KSDL	Kerry Slug Derogation Licence
kV	Kilovolt
NBAP	National Biodiversity Action Plan
NBDC	National Biodiversity Data Centre
NHA	Natural Heritage Areas
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
NVD	National Vegetation Database
OHL	Overhead Line
pNHA	Proposed Natural Heritage Areas
PRF	Potential Roost Features

QI	Qualifying Interest
RPO	Regional Policy Objectives
S.I	Statutory Instrument
SAC	Special Area of Conservation
SCI	Special Conservation Interests
SNH	Scottish Natural Heritage
SPA	Special Protection Area
TDR	Turbine Delivery Route
TII	Trasport Infrastructure Ireland
TRP	Threat Response Plan
WA	Wildlife Act
WFD	Water Framework Directive
WWDA	Waste Water Discharge Authorisation
ZOI	Zone of Influence

7 Ornithology

GLOSSARY OF TERMS

Term	Meaning
Breeding Season	April to September
Collision Risk Model	A mathematical model to predict the number of birds that may be killed by collision with moving wind turbine rotor blades
Key Ornithological Receptor	A bird species upon which potential impacts are anticipated and assessed
Potential Collision Height	The rotor-swept area of the proposed turbines
Winter Season	October to March

GLOSSARY OF ACRONYMS

Acronym	Meaning
AA	Appropriate Assessment
BESS	Battery Energy Storage System
BoCCI	Birds of Conservation Concern in Ireland
BR	Breeding Raptor (survey-location identifier)
BTO	British Trust for Ornithology
CEMP	Construction and Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CRA	Collision Risk Assessment
DTM	Digital Terrain Model
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
EU	European Union
HHVP	Hen Harrier Vantage Point
I-WeBS	Irish Wetland Bird Survey
KOR	Key Ornithological Receptor
NBDC	National Biodiversity Data Centre
NHA	Natural Heritage Area
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
PCH	Potential Collision Height
SAC	Special Area of Conservation
SCI	Special Conservation Interest
SNH	Scottish Natural Heritage
SPA	Special Protection Area

VP	Vantage Point

8

Land, Soils and Geology

GLOSSARY OF TERMS

Term	Definition
Aquifer	A geological formation capable of storing and transmitting groundwater in sufficient quantities to support water supplies or groundwater-dependent ecosystems.
Bedrock	Solid geological material underlying the subsoil and superficial deposits.
Borrow Pit	A pit resulting from the excavation of material used in construction of the Proposed Wind Farm
Drainage Network	Natural and artificial drains, ditches and watercourses that convey surface water.
Environmental Impact Assessment Report (EIAR)	The report prepared to identify, describe and assess the likely significant environmental effects of a proposed development.
Factor of Safety	Ratio of resisting forces to driving forces used to assess slope or peat stability. Values greater than 1.0 indicate stability.
Geological Heritage Site	A site recognised for its geological importance at county or national level.
Ground Investigation	Field investigations including soil probing, trial pits, boreholes, geophysical surveys and laboratory testing undertaken to characterise ground conditions.
Groundwater	Water occurring beneath the ground surface within soil, subsoil or rock.
Hydrogeology	The study of groundwater occurrence, movement and interaction with geological materials.
Karst	A landscape formed by dissolution of limestone characterised by features such as swallow holes, sinkholes, caves and underground drainage.
Land Take	Permanent or temporary occupation of land by the proposed development.
Made Ground	Artificially placed material resulting from previous construction or industrial activities.
mbgl	Metres below ground level
Mineral Resource	Naturally occurring rock or mineral deposit with existing or potential economic value.
Mitigation Measures	Measures incorporated into the project to avoid, reduce or offset adverse environmental effects.
Natural Resources	Naturally occurring environmental resources including land, soils, geology and minerals.

Permeability	The ability of soil or rock to transmit water.
Residual Effect	The environmental effect remaining after implementation of mitigation measures.
Sensitivity	The importance or vulnerability of an environmental receptor to change.
Significance	The importance of an environmental effect after considering receptor sensitivity and magnitude of impact.
Subsoil	Unconsolidated geological material between the topsoil and bedrock.
Topsoil	The uppermost soil layer containing organic matter and supporting vegetation growth.
Trial Pit	A shallow excavation undertaken to inspect and sample soils and subsoils.

GLOSSARY OF ACRONYMS

Acronym	Definition
EPA	Environmental Protection Agency
FoS	Factor of Safety
GSI	Geological Survey of Ireland

9 Hydrology and Hydrogeology

GLOSSARY OF TERMS

Term	Definition
Abstraction	The removal of water from a surface water body or groundwater source.
Aquifer	A geological formation capable of storing and transmitting groundwater.
Baseline Environment	The existing environmental conditions against which potential impacts are assessed.
Bedrock Aquifer	An aquifer contained within fractured or weathered bedrock.
Biotic (Q) Rating	EPA ecological classification system based on aquatic macroinvertebrates used to assess river water quality.
Buffer Zone	An undeveloped strip adjacent to a watercourse designed to protect water quality.
Catchment	The land area that drains rainfall to a common river, lake or estuary.
COD (Chemical Oxygen Demand)	A measure of the oxygen required to chemically oxidise organic matter in water.
Construction Environmental Management Plan (CEMP)	A document outlining environmental protection measures to be implemented during construction.
Dewatering	Temporary removal of groundwater or surface water to facilitate excavation.
Directional Drilling (HDD)	Horizontal drilling technique used to install services beneath rivers or roads without open excavation.
Drain	Manmade watercourse.
Drainage Management Plan	Design strategy for collecting, treating and controlling runoff from a development.
Ecological Status	Overall ecological condition of a waterbody as defined under the Water Framework Directive.
Electrical Conductivity (EC)	Indicator of the concentration of dissolved ions in water.
Environmental Impact Assessment Report (EIAR)	Report assessing the likely significant environmental effects of a proposed development.
Flood Risk Assessment (FRA)	Assessment of flood risk to and from a proposed development.
Flow Duration Curve	Graph showing the percentage of time specified flow rates are equalled or exceeded.
Geomorphology	Study of landforms and the processes that shape rivers and landscapes.
Geological Survey Ireland (GSI)	National geological agency responsible for geological and hydrogeological information.
Grab Sample	A single water sample collected at a specific location and time.
Groundwater	Water stored beneath the ground within soil and rock.
Groundwater Body (GWB)	A distinct volume of groundwater defined under the Water Framework Directive.
Groundwater Vulnerability	The ease with which contaminants can reach groundwater from the land surface.
Hydrochemistry	Chemical characteristics of groundwater or surface water.
Hydrogeology	Study of groundwater occurrence, movement and quality.
Hydrology	Study of the occurrence, movement and distribution of surface water.
Hydromorphology	Physical characteristics of rivers including channel form, flow and connectivity.
Impermeable Surface	Surface that does not readily permit infiltration, such as concrete or asphalt.

IPC Licence	Integrated Pollution Control Licence issued by the EPA.
Karst	Landscape developed in soluble rocks such as limestone, characterised by underground drainage, swallow holes and springs.
Lidar	Laser-based surveying technology used to produce detailed topographic models.
Mitigation Measure	Action taken to avoid, reduce or offset adverse environmental effects.
Peat Probing	Investigation used to determine peat depth and stratigraphy.
Permeability	Ability of soil or rock to transmit water.
pH	Measure of the acidity or alkalinity of water.
Public Water Supply (PWS)	Water supply serving the public, usually operated by Uisce Eireann.
Receiving Environment	Existing environment that may be affected by the proposed development.
Residual Effect	Environmental effect remaining after mitigation has been applied.
River Basin Management Plan (RBMP)	National plan for implementing the Water Framework Directive.
Runoff	Water flowing across the ground surface following rainfall.
Sediment	Soil or particulate matter transported by flowing water.
Settlement Pond	Pond designed to remove suspended solids by allowing particles to settle.
Siltbuster	Proprietary treatment system used to remove suspended solids from construction water.
Surface Water	Rivers, streams, lakes, canals and other waters at the ground surface.
Surface Water Body (SWB)	A river, lake, transitional or coastal waterbody defined under the Water Framework Directive.
SuDS (Sustainable Drainage Systems)	Drainage techniques designed to mimic natural drainage and manage runoff sustainably.
Suspended Solids (TSS)	Fine particles suspended within water that contribute to turbidity.
Turbidity	Measure of water clarity caused by suspended particles.
Water Framework Directive (WFD)	European legislation requiring protection and improvement of the ecological and chemical status of water bodies.
Water Quality	Physical, chemical and biological characteristics of water.
Watercourse	Any natural or artificial channel conveying water.
Wetland	Area where water is the primary factor controlling soils and ecological communities.

GLOSSARY OF ACRONYMS

Acronym	Definition
CFRAM	Catchment Flood Risk Assessment and Management.
COD	Chemical Oxygen Demand
CEMP	Construction Environmental Management Plan
HDD	Directional Drilling
DO	Dissolved Oxygen
EC	Electrical Conductivity
EPA	Environmental Protection Agency
EIAR)	Environmental Impact Assessment Report
FRA	Flood Risk Assessment
GSI	Geological Survey Ireland
GWB	Groundwater Body

IFI	Inland Fisheries Ireland
NHA	Natural Heritage Area.
NIFM	National Indicative Fluvial Mapping.
NPWS	National Parks and Wildlife Service.
NTU	Nephelometric Turbidity Units
OPW	Office of Public Works.
PWS	Public Water Supply
RBMP	River Basin Management Plan
SAC	Special Area of Conservation designated under the Habitats Directive.
SPA	Special Protection Area designated under the Birds Directive.
SoPA	Source Protection Area - An area delineated around a groundwater source to identify where land-use activities could affect the quality or quantity of water reaching that source.
SWB	Surface Water Body
SuDS	Sustainable Drainage Systems
TSS	Suspended Solids
WFD	Water Framework Directive
ZoC	The area of land through which rainfall and other recharge enters the groundwater system and contributes to a groundwater supply, such as a well or spring.

10 # Air Quality

GLOSSARY OF TERMS

Term	Definition
CAFE Directive	The Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive is a key European Union regulation designed to define, establish, and manage ambient air quality standards to protect human health and the environment. It sets legally binding limits for pollutants and dictates how Member States should monitor and improve air quality
IAQM 2024 Guidance	The IAQM 2024 guidance, "Guidance on the Assessment of Dust from Demolition and Construction," provides a standardized methodology for assessing construction dust impacts, covering demolition, earthworks, construction, and trackout.
Trackout	The transport of dust and dirt from the construction/ demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network.

GLOSSARY OF ACRONYMS

Acronym	Definition
NH_3	Ammonia
C_6H_6	Benzene
CO_2	Carbon Dioxide
CO	Carbon Monoxide
CAFE	Clean Air for Europe
CEMP	Construction and Environmental Management Plan
DEFRA	Department of Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges
EU	European Commission
EEA	European Environment Agency
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
EU	European Union
GHG	Greenhouse Gase
HGVs	Heavy Goods Vehicles
HDV	Heavy-duty vehicle
IAQM	Institute of Air Quality Management
km	Kilometres
Pb	Lead
LGVs	Light Goods Vehicles
LAQM	Local Air Quality Management
LAT	Lower Assessment Threshold
MRF	Materials Recovery Facility
m	Metres
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides

NMVOC	Non-Methane Volatile Organic Compounds
O_3	Ozone
PM	Particulate Matter
ppb	Parts per billion
PAHs	Polyaromatic Hydrocarbons
SAC	Special Area of Conservation
SO_2	Sulphur Dioxide
SO_x	Sulphur Oxide
TII	Transport Infrastructure Ireland
UAT	Upper Assessment Threshold
UKHA	UK Highways Agency
WHO	World Health Organisation

11 Climate

GLOSSARY OF TERMS

Term	Definition
Carbon Budget	The total amount of greenhouse gas emissions that may be released during an agreed period. In Ireland, this is measured on an economy-wide basis, excluding aviation and maritime, in megatonnes of carbon dioxide equivalent over a five-year period. Carbon budgets are used in climate policy and act as a benchmark to help ensure sustained emissions reductions over a period of time.
Conference of the Parties	Every year since 1995, the Conference of the Parties (COP) has gathered the 196 Parties (195 countries and the European Union) that have ratified the Convention in a different country, to evaluate its implementation and negotiate new commitments, and is the supreme decision-making body of the UNFCCC.
Embodied Carbon	The emissions associated with procuring, mining and harvesting raw materials, the transformation of those materials into construction products, transporting them to site, installation of these materials during a construction phase, and the subsequent replacement, removal, and disposal of these materials upon decommissioning

GLOSSARY OF ACRONYMS

Acronym	Definition
AMOC	Atlantic Meridional Overturning Circulation
CCAC	Climate Change Advisory Council
CCPI	Climate Change Performance Index
CFRAM	National Catchment Flood Risk Management
CH4	Methane
CO2	Carbon Dioxide
COP	Conference of the Parties
ESR	Effort Sharing Regulation
ETS	Emissions Trading System
ICCA	Ireland's Climate Change Assessment
IPCC	Intergovernmental Panel on Climate Change
ktCO2e	Kilotonnes of Carbon Dioxide Equivalent
LULUCF	Land Use, Land Use Change, and Forestry
$MtCO_2e$	Million Metric tonnes of Carbon Dioxide Equivalent

NCQG	New Collective Quantified Goal on Climate Finance
NIFM	National Indicative Fluvial Flood Mapping
NIR	National Inventory Report
RCP	Representative Concentration Pathways
tCO_2e	Tonnes of Carbon Dioxide Equivalent
TII	Transport Infrastructure Ireland
UNFCCC	Nations Framework Convention on Climate Change
WAM	With Additional Measures
WEM	With Existing Measures
WMO	World Meteorological Organisation

12 Noise and Vibration

GLOSSARY OF TERMS

Acronym	Definition
Amplitude Modulation	Variation in noise level over time; for example, observers may describe a 'whoosh whoosh' sound, which can be heard close to a wind turbine as the blades sweep past.
Background Sound Level (BS 4142)	The sound level of all noise sources in an area except the sound source to be assessed. Described using the metric LA90(t).
Baseline traffic flow.	The traffic count data for a particular road scaled up for the first year of construction.
Construction Noise Assessment Location	Any location associated with the Proposed Wind Farm and Proposed BESS and Substation where the construction noise emission levels are calculated and assessed.
Emission	The sound level emitted from a sound source, expressed as either a sound power level or a sound pressure level.
Grid Connection Route Noise Assessment Location	Any location associated with the Proposed Grid Connection Route where the noise immission levels are calculated and assessed.
Immission	The sound pressure level received at a specific location from a noise source(s).
Noise Assessment Location	Any location where the immission levels are calculated and assessed.
Noise Monitoring Location	Any location where baseline or specific noise levels have been measured.
Noise Sensitive Receptor	Identified receptors that are sensitive to noise.
Other Amplitude Modulation	Any unusual feature of aerodynamic noise from wind turbines, where a greater than normal degree of regular fluctuation in sound level occurs at the blade passing frequency, typically once per second.
Proposed Project traffic flow	The traffic flow attributable to the construction of the proposed project only.
Rating Level (BS 4142)	The immission level after consideration of the character of the sound. The Rating Level is the Immission Level plus any required character corrections, if this is deemed necessary.
Total traffic flow	The baseline traffic flow plus the proposed project traffic flow.

GLOSSARY OF ACRONYMS

Acronym	Definition
CNAL	Construction Noise Assessment Location
GNAL	Grid Connection Route Noise Assessment Location
HDD	Horizontal Directional Drilling.
NAL	Noise Assessment Location
NML	Noise Monitoring Location

NSR	Noise Sensitive Receptor
OAM	Other Amplitude Modulation
SPL	indicates the sound pressure level in decibels (dB).
SWL	indicates the sound power level in decibels (dB).

13

Landscape and Visual

GLOSSARY OF TERMS

Term	Meaning
Draft WEDG 2019	The 2019 Draft Wind Energy Guidelines. The draft document of the updated Wind Energy Development Guidelines yet to be published.
Landscape Character Area (LCA)	Units of the landscape that are geographically specific and have their own character and sense of place. Each LCA has its own distinctive character, based upon patterns of geology, landform, land use, cultural, historical and ecological features.
Photomontage	These are visualisations that superimpose an image of a Proposed Project upon a photograph or series of photographs from a specific location, termed the 'viewpoint'.
Route Screening Analysis (RSA)	An exercise where transport routes were driven in real-time and the level of roadside visual screening, in the direction of the Proposed Turbines, was recorded to inform actual on the ground visibility.
Viewpoint	This is typically in reference to a select location where a photomontage has been captured, which is represented in the Photomontage Booklet.
WEDG 2006	The 2006 Wind Energy Development Guidelines. The current published wind energy development guidelines which address a variety of aspects relating to wind energy developments inclusive of noise, shadow flicker, setback distances and community obligations.
Zone of Theoretical Visibility (ZTV)	A computer-generated representation identifying areas from which elements of the Proposed Project may theoretically be visible, based on specified modelling assumptions. Actual visibility may be reduced by intervening vegetation, buildings and other screening features.

GLOSSARY OF ACRONYMS

Acronym	Meaning
ACP	An Coimisiún Pleanála
AHA	Area of High Amenity
CDP	County Development Plan
DoEHLG	Department of the Environment, Heritage and Local Government
DoHPLG	Department of Housing, Planning and Local Government
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency

GIS	Geographic Information System
KCC	Kilkenny County Council
KCCDP	Kilkenny City and County Development Plan
LCA	Landscape Character Area
LCT	Landscape Character Type
LVIA	Landscape and Visual Impact Assessment
OHL	Overhead Line
RSA	Route Screening Analysis
VP	Viewpoint
WEDG	Wind Energy Development Guidelines
WES	Wind Energy Strategy
ZTV	Zone of Theoretical Visibility

14 Cultural Heritage

GLOSSARY OF TERMS

Term	Definition
Borrow Pits	A pit resulting from the excavation of material used in construction on the Proposed Wind Farm
National Inventory of Architectural Heritage	An Irish state initiative under the Department of Housing, Local Government and Heritage that identifies, records, and evaluates1 post-1700, non-archaeological buildings and structures of significance.
National Monuments Acts 1930 to 2004	Primary Irish Legislation protecting archaeological heritage, covering monuments, sites and objects.
Photomontage	These are visualisations that superimpose an image of a proposed project upon a photograph or series of photographs or series of photographs from a specific location, termed the 'viewpoint'.
Register of Historic Monuments (1997 act)	A statutory list maintained by the Minister for the Arts, Heritage, Gaeltacht and the Islands
Test Trenching	A shallow, excavated trench to examine soil, rock and groundwater conditions, or to identify archaeological features prior to construction.
The Granada Convention	A legally binding Council of Europe treaty defining and protecting Europe's architectural heritage. It emphasises the importance of inventories in underpinning conservation policies.
Trial Pit	A shallow, excavated hole used in geotechnical investigations to inspect soil, rock and groundwater conditions prior to construction.
Viewpoint	This is typically in reference to a select location where a photomontage has been captured, which is represented in the Photomontage Booklet.
Zone of Theoretical Visibility	A map (digitally produced) showing areas of land in which the proposed development is theoretically visible (based on topography rather than vegetation screening)

GLOSSARY OF ACRONYMS

Acronym	Definition
AAP	Areas of Archaeological Potential
ASI	Archaeological Survey of Ireland
ACA	Architectural Conservation Areas
AH	Archaeological Heritage
BH	Built Heritage
BMEP	Biodiversity Management and Enhancement Plan
CMP	Conservation Management Plan

CH	Cultural Heritage
DAU	Development Applications Unit
DCHG	Department of Culture, Heritage and the Gaeltacht
DHLGH	Department of Housing, Local Government and Heritage
DL	Designed Landscape
ESRI	Economic and Social Research Institute
EX	Excavations
GIS	Geographical Information Systems
HIA	Heritage Impact Assessment
HEV	Historic Environment Viewer
IAM	Impact Assessment Matrix
IAWU	Irish Archaeological Wetland Unit
LVIA	Landscape and Visual Impact Assessment
NFC	National Folklore Collection
NIAH	National Inventory of Architectural Heritage
NMS	National Monuments Service
NMI	National Museum of Ireland
WCCDP	Waterford City and County Development Plan
OS	Ordnance Survey
OUV	Outstanding Universal Value
OUV	Outstanding Universal Value
OHL	Overhead lines
RMP	Record of Monuments and Places
RPS	Record of Protected Structures
SMR	Sites and Monuments Record
TB	Townland Boundary
TDR	Turbine Delivery Route
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VP	Viewpoint
WHS	World Heritage Site
ZTV	Zone of Theoretical Visibility

15 Material Assets

GLOSSARY OF TERMS

Terms	Definition
Material Assets	*Built services and infrastructure. Traffic is included because in effect traffic consumes transport infrastructure*
Traffic Volume	Traffic volumes are discussed in terms of vehicles and passenger car units, or PCUs, where each vehicle is expressed in terms of its demand on the network relative to the equivalent number of cars or light goods vehicles
Queue	This is the average queue forecast for each movement and is useful to ensure that queues will not interfere with adjacent junctions.
Degree of Saturation or Ratio of Flow to Capacity	This offers a measure of the amount of available capacity being utilised for each movement. Ideally each movement should operate at a level of no greater than 85% of capacity
Delay	Output in minutes, this gives an indication of the forecast average delay during the time period modelled for each movement.
Electromagnetic Interference	The disruption of an electronic device's operation caused by unwanted electromagnetic radiation or signals from an external source
Clamp and Dolly trailer	Specialized heavy-haul vehicles designed for transporting long wind turbine blades and tower sections
Superwing Carrier	Specialized, extendable trailer designed for transporting extra-long wind turbine rotor blades

GLOSSARY OF ACRONYMS

Acronym	Definition
% Sat	Degree of Saturation
ACP	An Coimisiún Pleanála
ARS	Aviation Review Statement
ATC	Automatic Traffic Count
BESS	Battery Energy Storage System
CEMP	Construction and Environmental Management Plan
ComReg	Commission for Communications Regulation
DoD	Department of Defence

DoT now DoTT&S	Department of Transport
DTT	Digital Terrestrial Television
EMF	Electric and Magnetic Field
ESBN	ESB Networks
HGV	Heavy Goods Vehicle
IAA	Irish Aviation Authority
IAC	Irish Air Corps
GWS	Group Water Scheme
KCC	Kilkenny County Council
LGV	Light Goods Vehicle
MMaRC	Motorway Maintenance and Renewal Contractors
MRF	Materials Recovery Facility
MV/LV	Medium Voltage/Low Voltage
NM	Nautical Mile
OHL	Overhead Lines
PCU	Passenger Car Units
PPP	Public-Private Partnerships
RDO	National Roads Design Office
RFC	Ratio of Flow to Capacity
ROL	Road Opening License
SNH	Scottish Natural Heritage
SoPA	Source Protection Area
TDR	Turbine Delivery Route
TFI	Transport for Ireland
TII	Transport Infrastructure Ireland
TMP	Traffic Management Plan
WMP	Waste Management Plan

16 Major Accidents and Natural Disasters

GLOSSARY OF TERMS

Term	Definition
Catchment Flood Risk Assessment Management	The Catchment Flood Risk Assessment and Management Programme is Ireland's largest-ever national flood study, commissioned by the Office of Public Works to assess 80% of the country's primary flood risk, develop detailed flood management Plans with tailored strategies for 300 communities to meet EU Directive requirements
SEVESO Site	Industrial facilities storing potentially dangerous substances in high quantities under the EU SEVESO Directives

GLOSSARY OF ACRONYMS

Acronym	Definition
KCCDP	Kilkenny City and County Development Plan
CEMP	Construction and Environmental Management Plan
CFRAM	Catchment Flood Risk Assessment and Management
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FRA	Flood Risk Assessment
HGV	Heavy Goods Vehicles
INSN	Irish National Seismic Network
MEM	Major Emergency Management
NCCs	National Control Centres
NIFM	National Indicative Fluvial Flood Mapping
OHL	Overhead lines
OPW	Office of Public Works
RMP	Risk Management Plan
RSES	Regional Spatial and Economic Strategy
RWCS	Reasonable Worst Case Scenario

17 Interaction of the Foregoing

GLOSSARY OF TERMS

Term	Definition
Interaction of Effects	The combined, indirect, or secondary impacts that arise from the interaction between different environmental factors.

GLOSSARY OF ACRONYMS

Acronym	Definition
BEMP	Biodiversity Enhancement and Management Plan
C	Construction
CEMP	Construction and Environmental Management Plan
CO2	Carbon Dioxide
EIAR	Environmental Impact Assessment Report
km	Kilometre
KORs	Key Ornithological Receptors
LGVs	Light Goods Vehicles
NOx	Oxides of Nitrogen
O	Operation
SO2	Sulphur Dioxide

APPENDIX 1

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APPENDIX 2

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