

Oriel Wind Farm Project Environmental Impact Assessment Report Volume 2C



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ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report
Volume 2C: Glossary of Terms, Acronyms and Units

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ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

GLOSSARY

Project Terminology

Term	Meaning
Applicant	Oriel Windfarm Limited
Baseline	The existing conditions as represented by the latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of the Project.
Catchment	An area of land contributing to a river, lake or other water body.
Cumulative impacts	Impacts that result from incremental changes caused by other reasonably foreseeable actions alongside the project in question. This includes the impact of all other developments that were not present at the time of data collection.
"Do Nothing" Scenario	The environment as it would be in the future should the proposed project not be developed.
"Do Something" Scenario	The environment should the proposed project be developed.
Environmental Impact Assessment	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive 2011/92/EU as amended by EIA Directive 2014/52/EU and European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018), including the publication of an Environmental Impact Assessment (EIA) Report.
Foreshore	The area of the land and seabed between the high-water mark of ordinary or medium tides and the 12 nautical mile limit.
Habitat	The natural home or environment of an animal, plant, or other organism.
Horizontal Directional Drilling (HDD)	A method of installing underground cables via directional drilling that does not require digging trenches.
Inter-array cables	Cables which connect the wind turbines to each other and to the offshore substation.
Intertidal	An area of a seashore that is covered at high tide and uncovered at low tide.
Joint bay	These are concrete lined chambers, that provide a clean and dry environment for jointing the sections of underground cables together. Link boxes and communication chambers will also be required along the onshore cable route adjacent to each joint bay.
Landfall	The area in which the offshore export cable makes landfall. It is the transitional area between the offshore cable and the onshore cables. The landfall is proposed 700 m south of Dunany Point.
Magnitude	Size, extent and duration of an impact.
Measures included in the Project	The Project design includes a number of designed-in measures and management measures (or controls) which are committed to be delivered by the Applicant as part of the Project. These measures are standard measures applied to offshore wind development, including lighting and marking of the Project, use of 'soft-starts' for piling operations etc, to reduce the potential for impacts. These measures are integrated into the description of the development and have therefore been considered in the assessments in the EIAR.
Mitigation measure	Measure which would avoid, reduce, or remediate an impact.
Monopile	The cylindrical foundations in the seafloor used to support the wind turbines and OSS.
Nacelle	The housing of the generator components located at the height of the rotor hub.
National grid	Electricity transmission system.
Non-statutory stakeholder	Organisations with whom the regulatory authorities may choose to engage who are not designated in law but are likely to have an interest in a proposed development.
Offshore cable (or export cable)	The offshore cable (or export cable) will be installed in the offshore cable corridor. This cable will connect the offshore wind farm with the onshore cables at the landfall.
Offshore cable corridor	The corridor between the offshore wind farm area and the landfall in which the offshore export cable will be located.

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Term	Meaning
Offshore substation (OSS)	An offshore substation is a pre-fabricated offshore structure housing electrical equipment to provide a range of functions, such as changing the voltage.
Offshore wind farm area	This is where the offshore wind farm components will be located, which will include offshore foundations, the wind turbines, inter-array cables and offshore substation as well as a short section of the offshore export cable.
Onshore cable route	The route of the proposed underground electrical cables between the proposed landfall site and the proposed onshore substation site.
Onshore cables	Cables that transfer power from the Transition Joint Bay to the onshore substation. The onshore cables will be installed within a single trench of approximately 1 m in width, along an onshore cable route that connects the TJB to the substation site at Stickillin, east of Ardee on the N33.
Onshore components	The onshore substation, onshore cables, joint bays including link boxes and communication chambers, communication cables, Transition Joint Bay and other ancillary onshore electrical components.
Onshore substation	A site containing the equipment required to filter, monitor and control electricity received from the offshore wind farm and transmit it to the existing electricity Transmission System (National Grid). This includes gas insulated switchgear (GIS) located inside a building; and outdoor air insulated switchgear (AIS).
Onshore substation site	The site location of the proposed onshore substation.
Passing bay	Temporary passing bays will be installed adjacent to joint bays to enable through traffic during the construction of the onshore cable.
Prescribed bodies	Organisations that are required to be consulted by the Regulatory Authorities, and who also have a duty to respond to that consultation within a set deadline. This includes consultees that the Applicant is required to consult with. Not all consultees will be statutory consultees.
Project	The Oriel Wind Farm Project. The Project includes the construction, operation and maintenance, and decommissioning of offshore and onshore infrastructure.
Project design parameters	These are the design details and measurements of the Project infrastructure that are used to inform the assessment of the likely significant effects of the Project on the environment. These also include details on the Project construction, operation and maintenance and decommissioning phase activities. Where design flexibility applies under Section 287B of the Planning and Development Act 2000 as amended, the project design parameters include a description of the parameters or options e.g. the wind turbine hub height will vary within the range 145-152 metres above Lowest Astronomical Tide (maLAT).
Residual effects	Residual effects are the final effects that occur after the proposed mitigation measures have been put into place, as planned.
Scour protection	A solution for preventing scour around subsea structures, typically comprised of rock or concrete mattresses.
Sensitive receptor	Physical or natural resource, special interest or viewer group that will experience an impact.
Sensitivity	Vulnerability of a sensitive receptor to change.
Subtidal	Area extending seaward of low tide to the edge of the continental shelf.
Transition joint bay (TJB)	An underground chamber located close to the landfall and above the HWM that connects the offshore export cable to the onshore export cables.
Wind Turbine Generator (WTG)	All of the components of a wind turbine, including the tower, nacelle, blades and rotor.
Unexploded Ordnance (UXO)	Explosive weapons that did not explode when they were employed and still pose a risk of detonation.
Zone of Influence (Zoi)	The Zoi (or 'spatial extent of the impact' as described in Annex III(3) of the EIA Directive) is the area which may be subject to significant impacts as a result of the proposed development and associated activities.
Zone of Theoretical Visibility (ZTV)	A mapped visualisation of the areas over which a development could theoretically be seen, based on a Digital Terrain Model (DTM). The ZTV presents a 'bare earth' scenario (i.e. a landscape without screening structures or vegetation) (NatureScot, 2012).

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Chapter 17: Climate

Term	Meaning
Embodied carbon	The greenhouse gas emissions produced by the construction of a project, including emissions involved in producing material, transport, etc.
F-gases	Fluorinated gases; most of which have high global warming potentials.
Greenhouse Gases (GHG)	Greenhouse Gases (GHGs) are any gaseous substance capable of absorbing infrared radiation, thus trapping and holding heat within the atmosphere and contributing to the natural greenhouse effect.
World Health Organisation (WHO)	A specialised agency of the United Nations (UN) responsible for Public Health.

Chapter 18: Population and Human Health

Term	Meaning
Deprivation Index	The (Pobal) Deprivation Index is a series of maps measuring the relative affluence or disadvantage of a particular geographical area in Ireland.
Electoral Divisions (EDs)	Electoral Divisions (EDs) are the smallest legally administrative areas in the State for which Small Area Population Statistics (SAPS) are published from the Census of Population. There are 3,440 legally defined EDs in the State.
Full Time Equivalent	One full time equivalent job year is the same as one full-time job carried out for one year.
Health	State of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.
Health Outcome	Change in health status of an individual, group or population attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change health status.
Mental Health	State in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.
Vulnerable Groups	Groups sensitive to changes in health determinant in a given context. Can include groups such as ethnic minorities, people with disabilities, people who are homeless, people living in poverty, those struggling with addiction and substance abuse, and isolated older people.
Wider Determinants of Health	Biological, behavioural, socio-economic, cultural or environmental factors which contribute to the health status of individuals or populations.
Windscreen Survey	Conducted from a car and provides a visual overview of a community.

Chapter 19: Onshore Biodiversity

Term	Meaning
An Taisce	National Trust for Ireland.
Duration	Defined in relation to ecological characteristics (such as the lifecycle of a species) as well as human timeframes (CIEEM, 2018).
Extent	The spatial or geographical area over which the impact/effect may occur under a suitably representative range of conditions (CIEEM, 2018).
Fragmentation	A decrease in some or all types of natural habitats, and the dividing of the habitats into smaller and more isolated pieces.
Important Ecological Feature	Habitats, species or ecosystem (and their functions/processes) which, either by themselves or in a network, contribute significantly to an ecosystem's productivity, biodiversity, and resilience.
RAMSAR	A wetland site designated to be of international importance under the Ramsar Convention. The Convention on Wetlands, known as the Ramsar Convention, is an intergovernmental environmental treaty established in 1971 by UNESCO.
Water body	A surface water body as defined under the Water Framework Directive (WFD) (i.e. a river/ stream, lake, transitional, coastal or groundwater body).

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Term	Meaning
Watercourse	Any water body (WFD designation) as well as any other stream or ditch identified during the course of the EIA.

Chapter 20: Land and Agriculture

Term	Meaning
Drystock	Livestock excluding those that are used for dairy production.
Land Cover	The physical material making up the lands surface which can comprise various land uses.
Land Use	The use and management of the natural, semi-natural and built environment.
Landtake	The area of agricultural land, forestry or other natural/semi natural land that is lost temporarily or permanently to infrastructural development.
Tillage	Land under combinable crop production, in contrast to land used for the production of livestock or horticulture.

Chapter 21: Soil, Geology and Hydrogeology

Term	Meaning
Aquifer	A subsurface layer or layers of rock that store and transmit water in significant quantities.
Bedrock	Hard layer of rock beneath looser rocks and soils.
Catchment	An area of land contributing to a river, lake or other water body.
Conceptual Site Model	A simplified representation or working description of how a real system is believed to behave on the basis of assessment of field data including the relationships between contaminants, pathways and receptors (EPA, 2013).
Geological heritage	Natural, geological or geomorphological features possessing aesthetic, intrinsic or scientific and educational value, and that provide unique insight into geological processes affecting the formation or evolution of the Earth.
Groundwater body	Groundwater bodies are subdivisions of large geographical areas of aquifers so that they can be effectively managed in- order to protect the groundwater and linked surface waters.
Karst	Topography formed from the dissolution of soluble rocks such as limestone, dolomite, and gypsum. It is characterised by underground drainage systems with sinkholes and caves. It has also been documented for more weathering-resistant rocks, such as quartzite, given the right conditions.
Permeability	The ability of a substance (soil) to allow gases or liquids to go through it.
Subsoil	The layer below topsoil. It has less organic material and biological activity than topsoil.
Till	Unsorted material deposited by glaciers.
Vulnerability	The intrinsic geological and hydrogeological characteristics that determine the ease at which potential contamination may reach groundwater.
Water body	A surface water body as defined under the Water Framework Directive (WFD) (i.e. a river/ stream, lake, transitional, coastal or groundwater body).
Watercourse	Any water body (WFD designation) as well as any other stream or ditch identified during the preparation of the EIAR.

Chapter 22: Hydrology and Flood Risk

Term	Meaning
Annual Exceedance Probability (AEP)	The probability that a flood of a given (or larger) magnitude will occur within a period of one year.
Catchment	An area of land contributing to a river, lake or other water body.
Culvert	A tunnel for channelling water.

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Term	Meaning
Groundwater body	Groundwater bodies are subdivisions of large geographical areas of aquifers so that they can be effectively managed in order to protect the groundwater and linked surface waters.
High Water Mark	A high-water mark is a point that represents the maximum rise of a body of water over land.
Land Use	The use and management of the natural, semi-natural and built environment.
Q-value	Standard monitoring methodology for rivers and streams in Ireland.
Salmonid Waters	A river designed for salmonid fish under S.I. 293 of 1988.
Seveso Site	A notifiable establishment under the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) ('COMAH') Regulations 2015 (S.I. No. 209 of 2015) which implement the Seveso III Directive (2012/18/EU).
Vulnerability	The intrinsic geological and hydrogeological characteristics that determine the ease at which potential contamination may reach groundwater.
Water body	A surface water body as defined under the Water Framework Directive (WFD) i.e. a river/ stream, lake, transitional, coastal or groundwater body.
Watercourse	Any water body (WFD designation) as well as any other stream or ditch identified during the preparation of the EIAR.

Chapter 23: Air Quality

Term	Meaning
CAFE Directive	The European Commission Directive on Ambient Air Quality and Cleaner Air for Europe (2008/50/EC), known as the CAFE Directive, which has been transposed into Irish Legislation through the revised Air Quality Standards Regulations (S.I. 180 of 2011).
Fugitive dust	Fugitive dust emissions include emissions from non-point sources and diffuse sources.

Chapter 24: Risks of Major Accidents and Natural Disasters

Term	Meaning
Safeguarding	The process established to ensure that all appropriate measures are taken to secure the safety of aircraft when taking off, landing or flying within the vicinity of an airport.
Seveso	A term used as an abbreviation for three European Directives relating to the control of major-accident hazards involving dangerous substances. They are named after the Seveso disaster.

Chapter 25: Noise (Airborne) and Vibration

Term	Meaning
Amplitude Modulation (AM)	Fluctuation in sound levels that corresponds to the blade-passing frequency of the turbine, often described as a 'swishing' or 'thumping' noise.
Anthropogenic	An adjective used to refer to human-generated things.
Background noise level	The A-weighted noise level exceeded for 90% of the measurement over a period of time, used to represent the sound level experienced in the absence of transient events.
Decibel	A customary scale most commonly used (in various ways) for reporting levels of sound. The actual sound measurement is compared to a fixed reference level and the decibel value is defined to be $10 \log_{10}(\text{actual/reference})$, where (actual/reference) is a power or energy ratio. The standard reference for airborne sound is 20 micro-Pascals.
Infrasound	Sound of frequencies below the threshold of human hearing, typically defined as <20Hz.
LiDAR	A system using lasers that can measure distances and various meteorological parameters including wind.

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Chapter 26: Cultural Heritage

Term	Meaning
Archaeology	The scientific study of past societies through the physical material and environmental remains they leave behind. It investigates their houses, settlements and tombs and everyday implements. It seeks to understand the landscape, vegetation and climate of previous times as they affected, and were affected by, past peoples.
Archaeological excavation	The scientific process of systematically digging up recording and removing artefacts features from an archaeological site in order to analyse and predict past human behaviour.
Archaeological monitoring	Involves an archaeologist being present in the course of the carrying-out of the development works (which may include conservation works), so as to identify and protect archaeological deposits, features or objects which may be uncovered or otherwise affected by the works.
Archaeological test excavation	Test excavation is that form of archaeological excavation where the purpose is to establish the nature and extent of archaeological deposits and features present in a location which it is proposed to develop (though not normally to fully investigate those deposits or features) and allow an assessment to be made of the archaeological impact of the proposed development. It may also be referred to as archaeological testing. Test trenching usually involves 'the excavation of long narrow slit trenches to achieve a cross-sectional transect or group of transects across a site in which archaeological features and deposits may be noted.
Architectural Conservation Areas	Architectural Conservation Areas (ACA) are places, groups of structures or townscapes that are of special architectural, historical, archaeological, artistic, cultural scientific, social or technical interest/value or contribute to the appreciation of Protected Structures. ACAs and candidate ACAs are listed in every County Development Plan and Town Development Plan used for consultation purposes.
Architectural heritage	Structures and buildings which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest.
Cultural heritage	Cultural heritage is a broad and open term which has now come to include a wide range of tangible and intangible cultural considerations that are linked to and bound up in cultural memory and associations, belief, traditions, past knowledge, traditional and arcane practices, craft and building skills, and oral tradition of local populations. It encompasses aspects of archaeology, architecture, history, landscape and garden design, folklore and tradition and topography. Cultural heritage is expressed in the physical landscape in numerous often interrelated ways.
Cultural heritage assets	For the purpose of these guidelines, cultural heritage, which comprises the many facets of archaeological heritage, architectural heritage and cultural heritage are collectively described as cultural heritage assets.
National Inventory of Architectural Heritage	The National Inventory of Architectural Heritage (NIAH) is a unit within the Heritage and Planning Division of the Department of Arts, Heritage and the Gaeltacht
National Monument	The National Monuments Act (1930, Section 2) defines a 'National Monument' as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto'.
Record of Monuments and Places	The Record of Monument and Places (RMP) is a statutory list of all known archaeological monuments provided for in the National Monuments Acts. There are over 120,000 Recorded Monuments included in the RMP. The RMP consists of a published county-by-county set of Ordnance Survey maps on which monuments are marked by a circle and an accompanying book which specifies the type of monuments.
Record of Protected Structures	The Record of Protected Structures (RPS) is a mechanism for the statutory protection of the architectural heritage and is listed in every County Development Plan and Town Development Plan.
UNESCO World Heritage Sites	World Heritage sites are places that are important to and belong to everyone no matter where they live. They have a recognised universal value that goes beyond the value they hold for a particular nation. The World Heritage Convention was adopted by the UNESCO (United Nations Educational, Scientific and Cultural Organisation) General Conference in 1972. Ireland ratified the Convention in 1991. The Republic of Ireland currently has two properties on the World Heritage List; Brú Na Bóinne and Skellig Michael.

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Term	Meaning
UNESCO World Heritage Sites Tentative List	A Tentative List is an inventory of those properties which a country intends to consider for nomination to the World Heritage List. There are currently seven areas/ groups of sites on the Republic of Ireland's Tentative List (dated March 2010).
Zones of Archaeological Potential	Zones of Archaeological Potential (ZAP) can be defined as areas within the urban and rural landscape that possess the potential to contain archaeological remains due to the settlement history of a place and or to the presence of topographical features such as rivers, lakes and high, defensible ground.

Chapter 27: Seascape, Landscape and Visual Amenity

Term	Meaning
Land Cover	The physical material making up the land's surface which can comprise various land uses.
Land Use	The use and management of the natural, semi-natural and built environment.
Landscape Capacity	The capacity of a particular type of landscape to absorb change without unacceptable adverse effects on its character.
Landscape Character Area	Distinct types of landscape which are generic in character in that they may occur in different parts of the country, but wherever they are they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern.
Landscape Fabric	The physical pattern of elements and features such as vegetation, landform and land use that combine to create landscape character.
Landscape Quality (or Condition)	Is based on judgements about the physical state of the landscape, and about its intactness, from visual, functional, and ecological perspectives.
Landscape Resource	The combination of elements that contribute to landscape context, character and value.
Landscape sensitivity	Determined by assessing both the value attached to a landscape receptor and its susceptibility to the change likely to result from the Project. The sensitivity of a landscape receptor is a combination of 'judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape' (GLVIA 3, para 5.39).
Landscape susceptibility	Landscape susceptibility: 'the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies' (GLVIA 3, para 5.40).
Landscape Value	The importance attached to a landscape (often as a basis for designation or recognition) that expresses national or local consensus, because of its quality, cultural associations, scenic or aesthetic characteristics.
Seascape	The visual and physical conjunction of land and sea which combines maritime, coast and hinterland character (NatureScot, 2012).
Visual Amenity	The value of a particular area or view in terms of what is seen.
Visual Character	When a viewer experiences the visual environment, it is not observed as one aspect at a time, but rather as an integrated whole. The viewer's visual understanding of an area is based on the visual character of visible features and aspects and the relationships between them. The visual character is descriptive and not evaluative.
Visual Effect	Is a change to an existing view as a result of development or the loss of particular landscape elements or features already present in the view.
Visual Quality	Although the interpretation of viewers' experience can have preferential and subjective components, there is generally clear public agreement that the visual resources of certain landscapes have high visual quality. The visual quality of a landscape will reflect the physical state of individual features or elements.
Visual Resources	The visual resources of the landscape are the stimuli upon which actual visual experience is based. They are a combination of visual character and visual quality.
Visual Sensitivity	Sensitivity of visual receptors (people) is arrived at by combining judgements concerning their susceptibility to the type of change or development proposed and the value attached to the particular views.
Wireline	A digital visualization of meshed lines representing elevation and/ or surface features.

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Term	Meaning
Zone of Theoretical Visibility (ZTV)	A mapped visualisation of the areas over which a development could theoretically be seen, based on a Digital Terrain Model (DTM). The ZTV presents a 'bare earth' scenario (i.e. a landscape without screening structures or vegetation).

Chapter 28: Traffic and Transport

Term	Meaning
National road	National primary roads form the major routes between the major urban centre.
Regional road	A regional road is a class of road not forming a major route, but nevertheless forming a link in the national route network.
Road network	The existing and proposed public and private roads within the study area.

Chapter 29: Material Assets

Term	Meaning
Material Assets	The EPA 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2022) states that 'material assets can now be taken to mean built services and infrastructure' and lists 'built services, roads and traffic, and waste management' as topics under which environmental factors could be considered in an EIAR.

Chapter 30: Waste

Term	Meaning
Blackwater	Blackwater is wastewater generated from toilets and contains human waste and flush water. Blackwater is typically contaminated and requires treatment before it can be safely discharged or reused.
Greywater	Greywater is wastewater generated from sources other than toilets, such as sinks, showers, baths, and washing machines. It does not contain human waste but may contain soap, detergent, food particles, and other household contaminants.
Proximity Principle	The EU Waste Framework Directive established this principle, whereby waste should be managed as near as possible to its source.
Seveso Site	A notifiable establishment under the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) ('COMAH') Regulations 2015 (S.I. No. 209 of 2015) which implement the Seveso III Directive (2012/18/EU).
Waste hierarchy	An order of preference for how waste should be managed. Under the EU Waste Framework Directive, the waste hierarchy includes, from most to least preferable option: prevention, reuse, recycle, recovery, and disposal.

Chapter 31: Bats in the Marine Environment

Term	Meaning
Echolocation	A technique used by bats and other animals. They generate sounds and use the echoes of those sounds to locate objects. This can be used for foraging and navigation.

Chapter 32: Interactions

Term	Meaning
Interactions	"The interactions between impacts on different environmental factors" (Environmental Protection Agency (EPA), 2017).

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

ACRONYMS

Term	Meaning
AA	Appropriate Assessment
AADT	Average Annual Daily Traffic
AAP	Area of Archaeological Potential
ABP	An Bord Pleanála
ACA	Architectural Conservation Area
AEP	Annual Exceedance Probability
AFA	Area for Further Assessment
AHSQ	Area of High Scenic Quality
AI	Anecdotal Information
AIS	Automatic Identification System
AIS (Substation)	Air Insulated Switchgear
ALARP	As Low as Reasonably Practicable
AM	Amplitude Modulation
AminDW	Deep well trained mineral soils
AminPD	Non-calcareous parent materials
AminSW	Glaciofluvial sands and gravels
AONB	Area of Outstanding Natural Beauty
AQG	Air Quality Guidelines
AQLV	Air Quality Limit Value
ASSI	Area of Special Scientific Interest
ATC	Air Traffic Control
ATC	Automatic Traffic Counter
AtoN	Aids to Navigation
ATS	Air Traffic Service
BAT	Best Available Techniques
BCI	Bat Conservation Ireland
BCT	Bat Conservation Trust
BIWQ	Biotic Index of Water Quality
BminDW	Calcareous materials
BoCCI	Birds of Conservation Concern in Ireland
BOD	Biochemical Oxygen Demand
CA	Competent Authority
CaCO ₃	Calcium carbonate
CAFE	Directive on Ambient Air Quality and Cleaner Air for Europe
CAP23	Climate Action Plan 2023
CBA	Cost-Benefit Analysis
CCC	Cork County Council
CCR	Climate Change Risk
CDP	County Development Plan
CDW	Construction and Demolition Waste
CEF	Connecting Europe Facility
CEMP	Construction Environmental Management Plan
CFRAMS	Catchment Flood Risk Assessment and Management Study
CGS	County Geological Site
CH	Cultural Heritage
CIA	Cumulative Impact Assessment
CIEEM	Chartered Institute of Ecology and Environmental Management

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Term	Meaning
CIRIA	Construction Industry Research and Information Association
CLO	Community Liaison Officer
CMP	Construction Management Plan
CMRC	Coastal and Marine Resources Centre
CMS	Central Management System
CCMS	Convention on the Conservation of Migratory Species
CMU	Catchment Management Unit
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ eq	Carbon dioxide equivalent
COMAH	Control of Major Accident Hazards
ComReg	The Commission for Communications Regulation is the general communications regulator for Ireland.
CPO	Compulsory Purchase Order
CPT	Cone Penetration Testing
CRU	Commission for Regulation of Utilities (formerly the Commission for Energy Regulation)
cSAC	Candidate Special Area of Conservation
CSO	Central Statistics Office
cSPA	Candidate Special Protection Area
CTA	Control Area
CTMP	Construction Traffic Management Plan
CTV	Crew Transfer Vehicle
CWB	Coastal Water Body
DAERA	Department of Agriculture, Environment and Rural Affairs (Northern Ireland)
DAFM	Department of Agriculture, Food and the Marine
DAHG	Department of Arts, Heritage and the Gaeltacht
DAHGI	Department of Arts, Heritage, Gaeltacht and the Islands
DAHRRGA	Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs
DARC	Detection and Active Response Curtailment
DAU	Development Applications Unit
DCCAE	Department of Communications, Climate Action and Environment
DCENR	Department of Communications, Energy and Natural Resources
DCHG	Department of Culture, Heritage and the Gaeltacht
DEARA	Department of Agriculture, Environment and Rural Affairs
DECC	Department of the Environment, Climate and Communications
DECC (UK)	UK Department of Energy and Climate Change
DECLG	Department of Environment, Communities and Local Government
DEFRA	Department for Environment Food & Rural Affairs (Northern Ireland)
DEHLG	Department of Environment, Heritage and Local Government
DELG	Department of Environment and Local Government
DHLGH	Department of Housing, Local Government and Heritage
DHPLG	Department of Housing, Planning and Local Government
DLR	Dun Laoghaire-Rathdown
DMAP	Designated Maritime Area Plan
DMRB	Design Manual for Roads and Bridges
DoD	Department of Defence
DPER	Department of Public Enterprise and Reform
DRWEDG	Draft Wind Energy Development Guidelines
DSM	Digital Surface Model (includes surface features such as buildings and vegetation)
DTI	Department of Trade and Industry (UK)

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
DTM	Digital Terrain Model (bare-earth only i.e. does not include the elevation of surface features)
DTTAS	Department of Transport, Tourism and Sport
EA	Environment Agency (England and Wales)
EC	European Commission
ECHA	East Canadian High Arctic
EclA	Ecological Impact Assessment
ED	Electoral Division
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EirGrid	State-owned electric power transmission operator in Ireland
EIS	Environmental Impact Statement
ELC	European Landscape Convention
EMCs	Even Mean Concentrations
EMF	Electromagnetic Field
EMP	Environmental Management Plan
EMR	Eastern Midland Region
EMRA	Eastern and Midland Regional Assembly
EMRWMP	Eastern Midland Region Waste Management Plan
END	Environmental Noise Directive
EPA	Environmental Protection Agency
EQS	Environmental Quality Standards
ERCoP	Emergency Response Cooperation Plan
ESB	Electricity Supply Board
ESD	Effort Sharing Decision
ESR	Effort Sharing Regulation
ETRS89	European Terrestrial Referencing System (established in 1989)
ETS	Emissions Trading Scheme
EU	European Union
EUPHA	European Public Health Association
EWC	European Waste Catalogue
FCC	Fingal County Council
FHMW	Full Width at Half Maximum
FIR	Flight Information Region
FL	Flight Level
FRA	Flood Risk Assessment
FRS	Flood Relief Scheme
FRS	Fluid Recovery Service
FSU	Flood Studies Update
FTA	US Federal Transit Administration
GAA	Gaelic Athletic Association
GGB	Green Construction Board
GGBS	Ground Granulated Blast Furnace Slag
GHG	Greenhouse Gases
GIS	Geographic Information System
GIS (substation)	Gas Insulated Switchgear
GLPSsS	Gravels derived from Lower Palaeozoic sandstone
GLVIA3	Guidelines of Landscape and Visual Impact Assessment: Third Edition

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
GMT	Greenwich Mean Time
GNI	Gas Networks Ireland
GS	Garden Survey
GSI	Geological Survey of Ireland
GVA	Gross value added
GW	Gigawatt; unit of power equal to one billion watts, or a thousand megawatts (MW)
GWB	Groundwater body
GWDTE	Groundwater Dependant Terrestrial Ecosystem
GWP	Global Warming Potential
HDD	Horizontal Directional Drilling
HDPE	High-Density Polyethylene
HE	Highways England
HEFS	High-end Future Scenario
HERoNI	Historic Environment Record of Northern Ireland
HGD	Historic Garden and Designed Landscape
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HIF	Health Ireland Framework
HLE	Healthy Life Expectancy
HP	High Pressure
HSA	Health and Safety Authority
HSE	Health Service Executive
HV	Heavy Vehicle
HV	High Voltage
HVAC	High Voltage Alternating Current
HWM	High Water Mark
IAA	Irish Aviation Authority
IAIA	International Association for Impact Assessment
IAIP	Integrated Aeronautical Information Package
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IAPS	Invasive Alien Plant Species
IAQM	Institute of Air Quality Management
IBGRG	Irish Brent Goose Research Group
ICE	Internal Combustion Engine
ICF	Irish Concrete Federation
ICNIRP	International Commission on Non-Ionising Radiation Protection
ICOMOS	International Council on Monuments and Sites
ICWW	Irish Coastal Wave and Water Level Modelling
IE	Industrial Emissions
IÉ	Iarnród Éireann
IEC	International Electrotechnical Commission
IED	Industrial Emissions Directive
IEF	Important Ecological Feature
IEMA	Institute of Environmental Management and Assessment
IFI	Inland Fisheries Ireland
IGI	Institute of Geologists of Ireland
ILO	International Labour Organisation
IMDBON	Irish Marine Data Buoy Observation Network
IMO	International Maritime Organisation
IoA	Institute of Acoustics

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
IoA AMNWG	Institute of Acoustics Amplitude Modulation Working Group
IoA GPG	Institute of Acoustics Good Practice Guide
IPC	Integrated Pollution Control
IPCC	Intergovernmental Panel on Climate Change
IPH	Institute of Public Health
IRCG	Irish Coast Guard
IRR	Internal Rate of Return
IrSTLPSsS	Irish sea till derived from Lower Palaeozoic sandstones and shales
ISO	International Organisation of Standardisation
ITM	Irish Transverse Mercator
IW	Irish Water
JB	Joint Bay
KERs	Key Ecological Receptors
LAP	Local Area Plan
LAT	Lowest Astronomical Tide
LCA	Life Cycle Assessment
LCA	Landscape Character Area
LCC	Louth County Council
LCDP	Louth County Development Plan
LCT	Landscape Character Type
LEV	Low Emitting Vehicles
LFN	Low Frequency Noise
LiDAR	Light Detection and Ranging
LMA	Lands Made Available
LO	Liaison Officer
LP	Low Pressure
LSE	Likely Significant Events
LTA	Long Term Average
LV	Low Voltage Electricity Cables
LV	Light Vehicle
L VIA	Landscape and Visual Impact Assessment
LWM	Low Water Mark
M1	Existing M1 Motorway
MAC	Maritime Area Consent
MAFF	Ministry of Agriculture, Fisheries and Food
mAOD	Meters above ordnance datum
MarSands	Marine sand and gravel
MCA	Multi-criteria Analysis
MCC	Meath County Council
MCP	Medium Combustion Plants
MEC	Maximum Export Capacity
MEP	Member of the European Parliament
MHWM	Mean High Water Mark
MLVC	Marine Licence Vetting Committee
MOD	Ministry of Defence (UK)
MP	Medium Pressure
MPA	Marine Protected Area
MPCP	Marine Pollution Contingency Plan
MRFS	Mid-range Future Scenario
MSFD	Marine Strategy Framework Directive (2008/56/EC)

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
MSO	Marine Survey Office
MSPD	Maritime Spatial Planning Directive (2014/89/EU)
MV	Medium Voltage Electricity Cables
N33	Existing N33 National Primary Road
NAF	National Adaptation Framework
NBAP	National Biodiversity Action Plan
NBDC	National Biodiversity Data Centre
NBP	National Broadband Plan
NCCAF	National Climate Change Adaptation Framework
NCFHM	National Coastal Flood Hazard Mapping
NEC	National Emissions Ceilings Directive
NECP	National Energy and Climate Plan
NED	Natural Environment Division
NEET	[a person] Not in Education, Employment or Training
NGR	National Grid Reference
NHA	Natural Heritage Area
NI	Northern Ireland
NIAH	National Inventory of Architectural Heritage
NIEA	Northern Ireland Environment Agency
NIFM	National Indicative Flood Mapping
NIS	Natura Impact Statement
NISA	North Irish Sea Array
NISMR	Northern Ireland Sites and Monuments Record
NISRA	Northern Ireland Statistics and Research Agency
NLS	National Landscape Strategy
NMI	National Museum of Ireland
NML	Noise Monitoring Location
NMPF	National Marine Planning Framework
NMS	National Monuments Service
nNHA	Proposed Natural Heritage Area
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxide
NPF	National Planning Framework
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
NRA	Navigation Risk Assessment
NSA	Nutrient Sensitive Area
NSG	National Steering Group
NSL	Noise Sensitive Location
NSMS	Navigation Safety Management System
NTS	Non-technical Summary
NWCPO	National Waste Collection Permit Office
NWMP	National Waste Management Plan
O&M	Operations and Maintenance
OD	Ordnance Datum
ODREP	Offshore Renewable Energy Development Plan
OEE	Office of Environmental Enforcement
OHL	Overhead Line
OPW	Office of Public Works
ORE	Offshore Renewable Energy

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Term	Meaning
OREDPA	Offshore Renewable Energy Development Plan
ORESAP	Offshore Renewable Energy Strategic Plan
OS	Ordnance Survey
OSI	Ordnance Survey Ireland
OSS	Offshore Substation
OUV	Outstanding Universal Value
OWF	Offshore Wind Farm
OWL	Oriel Windfarm Limited
PAG	Project Appraisal Guidelines
PAS	Publicly Available Specification
PBR	Potential Bat Roost
PC	Personal Computer
PM10	Particulate matter measuring 10 micrometres or less in diameter
PM2.5	Particulate matter measuring 2.5 micrometres or less in diameter
pNHA	Proposed Natural Heritage Area
PoM's	Programme of Measures
PPV	Peak Particle Velocity
PRAI	Property Registration Authority Ireland
ProW	Public rights of Way
PRP	Pollution Reduction Programme
pSPA	Proposed Special Protection Area
PV	Photovoltaic
PV	Protected View
PWS	Public Water Supply
QI	Qualifying Interest (applies to SACs)
QLFS	Quarterly Labour Force Survey
RAF	Royal Air Force
RBD	River Basin District
RBMP	River Basin Management Plan
REM	Road Emissions Model
RLCA	Regional Landscape Character Area
RMP	Record of Monuments and Places
ROI	Republic of Ireland
RPA	Railway Procurement Agency
RPS	Record of Protected Structures
RSA	Road Safety Authority
RTE	Raidió Teilifís Éireann
SAAO	Special Amenity Area Order
SAC	Special Area of Conservation
SAEPA	South Australia Environment Protection Authority
SAPMAP	Small Area Population Statistics Map
SAPS	Small Area Population Statistics
SAR	Search and Rescue
SCA	Seascape Character Area
SCI	Special Conservation Interest (applies to SPAs)
SCT	Seascape Character Type
SEA	Strategic Environmental Assessment
SEAI	Sustainable Energy Authority of Ireland
SF6	Sulphur hexafluoride, gas used as an insulator at GIS substations as an arc quenching medium

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
SFRA	Strategic Flood Risk Assessment
SI	Site Investigation
SID	Strategic Infrastructure Development
SLM	Specific Landscape Mitigation
SLVIA	Seascape, Landscape and Visual Impact Assessment
SMR	Sites and Monuments Record
SNH	Scottish Natural Heritage (now NatureScot)
SO ₂	Sulphur Dioxide
SOPEP	Shipboard Oil Pollution Emergency Plan
SPA	Special Protection Area
SSC	Suspended Sediment Concentration
SuDS	Sustainable Drainage Systems
TBC	To Be Confirmed
TDS	Total Dissolved Solids
TII	Transport Infrastructure Ireland
TJB	Transition Joint Bay
TLs	Till derived from limestones
TM	Traffic management
TMP	Traffic management plan
TPSE	Threshold of Potential Significant Effect
TSO	Transmission System Operator
TTA	Transport and Traffic Assessment
UAA	Utilised Agricultural Area
UE	Uisce Éireann
UGC	Underground Cable
UHF	Ultra-High Frequency
UK	United Kingdom
UKC	Under-Keel Clearance
UKHO	UK Hydrographic Office
UKLFS	UK Low Flying System
UNESCO	United Nations Educational, Scientific and Cultural Organisation
uPVC	Unplasticised Polyvinyl Chloride
UTC	Coordinated Universal Time
V10	Standardised 10 m wind speed
VFR	Visual Flight Rules
VHF	Very High Frequency
VHH	10-minute average hub height wind speeds
VP	Vantage Point
VRS	Vehicle Restraint Systems
WADT	Weekly Average Daily Traffic
WAM	With Additional Measures
WEDG	Wind Energy Development Guidelines
WEEE	Waste Electrical and Electronic Equipment
WEM	With Existing Measures
WFD	Water Framework Directive
WHO	World Health Organisation
WHS	World Heritage Site
WMO	World Meteorological Organisation
WMP	Waste Management Plan
WTG	Wind Turbine Generator

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
WTN	Wind Turbine Noise
ZoI	Zone of Influence
ZoN	Zone of Notification
ZTV	Zone of Theoretical Visibility

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

UNITS

Term	Meaning
'	Minute
"	Second
€	Euro
°	Degree
°C	Degrees Celsius
µg/m ³	Micrograms per cubic metre
µm	Micron
µS/cm	MicroSiemens per centimetre
cm	Centimetre
dB	Decibel (unit used to measure the intensity of sound)
dB(A)	A-weighted decibel; Noise measurements made with A-weighted scale; follows the frequency sensitivity of the human ear at low levels.
ft	Foot
ft agl	Feet above ground level
ft amsl	Feet above mean sea level
gCO ₂ /kWh	grams of carbon dioxide per kilowatt-hour
GW	Gigawatt (power; equal to one thousand megawatts)
ha	Hectare (area)
hrs	Hours
Hz	Hertz
kJ	Kilojoule
km	Kilometre
km/h	Kilometres per hour
km/sq. km	Kilometre per square kilometre
km ²	Square kilometre
kt	Knot
kV	Kilovolt (electrical potential)
kW	Kilowatt (power)
kWh	Kilowatt hour
L	Litre
l/m ² /sec	Litres per square metre per second
lx	Lux (illuminance)
m	Metre
m amsl	Metres above mean sea level
m AOD	Metres Above Ordnance Datum
m/s	Metres per second
m ²	Square metre
m ² /d	Square metre per day
m ³	Cubic metre
m ³ /d	Cubic metres per day
mAOD	Metres above ordnance datum
mbgl	Metres below ground level
mg/l	Milligrams per litre
mg/m ² /day	Milligrams per square metre per day
mg/m ³	Milligrams per cubic metre
mm	Millimetre

ORIEL WIND FARM PROJECT - GLOSSARY OF TERMS, ACRONYMS AND UNITS

Term	Meaning
mm/s	Millimetres per second
mm/year	Millimetres per year
mm/yr	Millimetres per year
mOD	Metres above ordnance datum
Mt	Megatonne
MW	Megawatt (power; equal to one million watts)
nm	Nautical mile
Ohm-m	Ohm-metre
PSU	Practical Salinity Unit
t	Tonne
ug/L	Microgram per Litre
V	Volt