

Glossary

10 - 15 metre	Category of fishing vessels that are between 10 and 15 metres in length.
12 nm limit	Territorial waters of European Union (EU) Member States extend to 12 nm. The coastal Member State manage these waters exclusively within the limits.
6 nm limit	UK vessels have exclusive access to fish within 6 nm of the coast.
6 nm - 12 nm limit	Some access is allowed for certain EU Member States in identified areas around the UK coast, based upon historic access.
Acoustic Doppler Current Profiler (ADCP)	A seabed mounted instrument that measures current velocities over a depth range through the water column in addition to water elevation.
Acoustic particle velocity	The rate of change of the displacement of fluid particles created by the forces exerted on the fluid by acoustic pressure in the presence of a sound wave. The units of velocity are metres per second (m/s).
Acoustic Pressure	The force per unit area exerted by a sound wave above and below the ambient or static equilibrium pressure is called the acoustic pressure or sound pressure. The units of pressure are pounds per square inch (psi) or, in the SI system of units, Pascals (Pa). In underwater acoustics the standard reference is one-millionth of a Pascal, called a micro-Pascal (1 μ Pa).
Acoustic Wave and Current (AWAC)	A seabed mounted instrument that measures both surface waves, and current velocities over a depth range throughout the water column in addition to water elevation.
Aerobic	Living or occurring only in the presence of oxygen.
Air Defence Radar	A series of fixed air defence radars feed data into a central control and reporting centre providing surveillance information for air defence controllers.
Air Traffic Control	A service that facilitates safe and orderly movement of aircraft within and between airports.
Air Navigation Order	Published by the Civil Aviation Authority for the use of those concerned with air navigation.
Air Traffic Service Unit	A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before aircraft departure. Such a reporting office may be established as a separate unit or combined with an existing unit. It is a generic term meaning air traffic control, flight information centre or air traffic reporting office.
Alien Species	A non-established introduced species, which is incapable of establishing self-sustaining or self-propagating populations in the new area without human interference.

Allision	The act of striking or collision of a moving vessel against a stationary object.
Ambient sound	Normal background noise in the environment, which has no distinguishable sources.
Anadromous	The term used to describe marine fish that migrate from sea to rivers to spawn.
Anaerobic	An environment in which the partial pressure of oxygen is significantly below normal atmospheric levels; deoxygenated.
Anemone	Any of numerous flowerlike marine coelenterates of the class Anthozoa, having a flexible cylindrical body and tentacles surrounding a central mouth.
Anoxic	Describes an environment without oxygen.
Archaeological Site	A location where human activities once took place and left some form of material evidence.
Archaeology	The study of the development of the human species and its environment through their material remains.
Archive	All parts of the archaeological record, including finds and digital records as well as written, drawn and photographic documentation.
Artefact	Any object or part of an object which has been made, used or modified in some way by human beings. Common examples include tools, utensils, art, food remains, and other products of human activity.
Assessment (Landscape)	An umbrella term for description, classification and analysis of landscape.
Automatic Identification System (AIS)	Automatic Identification System. A system by which vessels automatically broadcast their identity, key statistics e.g. length, brief navigation details e.g. location, destination, speed and current status e.g. survey. Most commercial vessels and EU fishing vessels over 15m are required to have AIS.
Bandwidth	The range of frequencies over which a sound is produced or received.
Barrier effects	The effect seen when a disturbance restricts the free movement, breeding and mingling or populations of a species.
Baseline	The landscape and visual character of the study area as it exists at the commencement of the assessment process – i.e. prior to the development proposal under consideration.
Bathyal	Pertaining to the sea floor between 200 m and 4000 m (Lincoln & Boxshall, 1987).
Bed shear stress	A measure of the force exerted on the seabed by a combination of current flows and wave orbital motions. The higher the bed shear stress, the more likely is sediment erosion.

Benthic	Communities of organisms present on the sea bed.
Benthic grab	A sampling method used to capture bottom sediment samples. The grab comprises a pair of hinged jaws and a lever system with a release catch that allows the jaws to close on the bottom capturing the organisms and sediment within.
Benthos	Those organisms attached to, or living on, in or near, the seabed, including that part which is exposed by tides as the littoral zone.
B-fields	Magnetic fields produced by an electric current close to a cable.
Bio-accumulate	The ability of organisms to retain and concentrate substances from their environment. The gradual build-up of substances in living tissue; usually used in referring to toxic substances; may result from direct absorption from the environment or through the food-chain.
Bioavailable	Amount of a substance that becomes available (reaches the target organ or systemic circulation) to an organism's body for bioactivity when introduced through ingestion, inhalation, injection, or skin contact.
Biodiversity	The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.
Biotope	The physical habitat with its biological community; a term which refers to the combination of physical environment (habitat) and its distinctive assemblage of conspicuous species.
Bivalve	Characteristically a shell of two calcareous valves joined by a flexible ligament.
Broadly Acceptable	Risks in this category are 'low risk' and generally regarded as insignificant and suitably controlled. There is not usually a requirement for any further action to be taken for risks in this category.
Bycatch	Unwanted marine species captured in nets whilst targeting other species.
Catch and Release	A conservation measure by which fish are caught, landed and released back into the river alive
Cefas Action Levels (AL)	Thresholds against which levels of contaminants within sediments can be assessed.
Circalittoral	The subzone of the rocky sublittoral below that dominated by algae (the infralittoral), and dominated by animals.
Civil Aviation Authority	The statutory regulatory body which oversees and regulates all aspects of civil aviation in the United Kingdom.
Civil Aviation Publication	A series of documents published by the Civil Aviation Authority containing aviation policy and guidance.

Clupeid	Any of various widely distributed soft-finned fishes of the family Clupeidae, which includes herring and sprat.
Collision	The act or process of colliding (crashing) between two moving objects.
Colonisation	The process of establishing populations of one or more species in an area or environment where the species involved were not present before.
Conditional Route	Air traffic service routes of defined airspace which are useable only under specified conditions.
Control and Reporting Centre	A location where air defence radar is used to police airspace, scrambling fighter jets where necessary to intercept and identify any aircraft that are deemed to be suspicious.
Countryside	The rural environment and its associated communities (including the coast).
Creeling	The Scottish designation for potting, also referred to as static gear. The use of small cages or baskets to capture shellfish such as crabs or lobster.
Critical bed shear stress	The threshold bed shear stress above which sediment erosion starts to occur; its value depends upon the properties of the seabed sediment, such as the particle size distribution.
Cumulative Effects	Effects arising from the additional changes to the landscape or visual character caused by a proposed development in conjunction with other developments (associated with it or separate to it).
dBht(Species)	The dBht(Species) metric (Nedwell et al (2007b) has been developed as a means for quantifying the potential for a behavioural impact of a sound on a species in the underwater environment. It is similar to the dB(A) in that it uses a species' audiogram in its calculation. The dBht(Species) metric can be understood as the level above the minimum audible sound (threshold of hearing) which a species can hear. A level of 0 dBht(Species) represents the minimum audible sound.
Decibel (dB)	A customary scale most commonly used (in various ways) for reporting levels of sound. Due to the logarithmic nature of the measurement, a difference of 10 dB corresponds to a factor of 10 in sound power. 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 ratio. Because sound power is usually proportional to sound pressure squared, the decibel value for sound pressure is $20 \log_{10}(\text{actual pressure/reference pressure})$. As noted above, the standard reference for underwater sound pressure is 1 micro-Pascal (μPa). The dB symbol is followed by a second symbol identifying the specific reference value (i.e., re 1 μPa).
Deconfliction Service	A surveillance based air traffic service in which the air traffic controller provides specific surveillance derived traffic information and issues headings or levels aimed at achieving planned deconfliction minima against all observed aircraft.

Defence Infrastructure Organisation	An operating arm of the Ministry of Defence which is responsible for the built and rural estate. The agency's property portfolio is diverse and ranges from naval bases to airfields to forces housing and military training grounds. The DIO's responsibilities relevant to this assessment relate to safeguarding of military aviation interests.
Demersal	Fishing activities or species located near or on the sea bed.
Department of Energy and Climate Change	A ministerial department which works to ensure the UK has secure, clean, affordable energy supplies and to promote international action to mitigate climate change.
Dependency Ratio	The relationship between the productive element of the population and the economically dependent.
Desorption	Substance released from or through a surface.
Development Area	The area which includes proposed WTGs, inter-array cables, OSPs and initial part of the Offshore Export Cable and any other associated works (see Figure 1.2).
Dhan	A surface buoy often made of cork, with a flag on a pole which is used to mark the temporary position of fishing gear, typically nets or pots.
Diadromous	The term used to describe migration of a species between fresh water and the sea.
Digital Terrain Model (DTM)	Computer generated three dimensional model based on aerial survey of ground surface (e.g. Ordnance Survey Profile data). Often utilised as a basis for visibility modeling over large areas.
Direct jobs	Jobs directly within the Project.
Displacement effects	The proportion of jobs or other benefits accounted for by reduced benefits elsewhere within the study or wider area.
Diversity	The state or quality of being different or varied. In relation to species, the degree to which the total number of individual organisms in a given ecosystem, area, community or trophic level is divided evenly over different species, i.e. measure of heterogeneity. Species diversity can be expressed by diversity indices, most of which take account of both the number of species and number of individuals per species.
Echinoderms	Any of numerous radially symmetrical marine invertebrates of the phylum Echinodermata, which includes the starfishes, sea urchins, and sea cucumbers, having an internal calcareous skeleton and often covered with spines.
Economic activity rate	The percentage of the population, both in employment and unemployed that represents the labour supply.
Economic multiplier	Further economic activity (jobs, expenditure or income) associated with additional local income and local supplier purchases.

Ecosystem	A community of organisms and their physical environment interacting as an ecological unit.
Effect	The result of an impact on a landscape or visual receptor.
E-fields	Electric fields produced by an electric current close to a cable.
Elasmobranchs	A subclass of fish, comprising the sharks, the rays, and the Chimæra. The skeleton is mainly cartilaginous.
Electromagnetic Field (EMF)	The coupled electric (iE) and magnetic (B) fields that are generated by time-varying currents and accelerated charges from, for example, subsea cables.
Element	A component part of the landscape (e.g. roads, hedgerows, woods).
Energetic means	The assumption that, during cable burial, the entire volume of the trench is ejected into the water column; this leads to conservative estimates for SSC and sediment settling depth and allows for consideration of a range of cable installation methodologies.
Epibenthic	Communities of organisms present within the sea bed.
Epibenthic trawl	A device which trawls across the bottom of the seabed capturing organisms in a net.
Ex Post Assessment	Evaluation of the impacts of a project post-development.
Ex-Ante Assessment	Assessment of the impacts of a project pre-development.
Export Cables	“Export Cables” are electricity cables 132 KV and above.
Far field (Underwater Noise)	A region far enough away from a source that the sound pressure behaves in a predictable way, and the particle velocity is related to only the fluid properties and exists only because of the propagation sound wave (see Near field).
Far-Field (Metocean)	The study area lying outside the Development Area and Offshore Export Cable Corridor.
Fast/Super Crabber	A large potting vessel (15-20m) operating pumped vivier holds which allow crabs/lobsters to be kept alive for several days before returning to port.
Feature	Evidence of human activities visible as disturbances in the soil. Such disturbances are produced by digging pits for storage, setting posts for houses, or by constructing a hearth for cooking. These disturbances are often distinguished by soil discolorations or non-natural formations of stone, shell, bone, soil, coal, wood, etc.
Field Pattern	The pattern of hedges and walls that define fields in farmed landscapes.
Fish Aggregating Device (FAD)	A permanent, semi-permanent, or temporary structure or device made from any material which has the effect of attracting fish.

Fisheries Industry Representative	A member of the fishing community, who assists the Fisheries Liaison Officer in disseminating information to local skippers and gives feedback on the project.
Fisheries Liaison Officer	An individual who works as an intermediary between a wind farm developer and the fishing communities ensuring good communication.
Fixed Engine	Static nets used to catch salmon on the coast outside of estuary limits. These can be bag or stake nets.
Foraging	Foraging is searching for and exploiting food resources.
Forth and Tay Modelling System (FTMS)	Forth and Tay Modelling System – a numerical modelling system built specifically for ICOL and NNGOWL in order to assess environmental impacts; comprises HD, SW and PT modules.
Gadoid	A bony fish of an order (Gadiformes) that comprises the cods, hakes, and their relatives.
Glochidial	The larvae of a freshwater mussel which lives parasitically in the gills or other external parts of fish.
Grilse	A salmon which has returned to fresh water after a single winter at sea.
Habitat	The place in which a plant or animal lives.
Helicopter Main Route	A route where civilian helicopters operate on a regular and frequent basis.
Hertz	The units of frequency where 1 hertz = 1 cycle per second. The abbreviation for hertz is Hz.
Horizontal Subtended Angle	The angle measured in degrees from the left most visible part to the right most visible part of any development.
Hydrodynamic (HD)	The scientific study of the motion of fluids. A numerical model used to predict water levels and current velocities throughout a model domain.
ICES Rectangle	ICES rectangles create a grid dividing up the earth's surface. They are each aligned to 1° of longitude and 30' of latitude and, for the most part, cover an area of approximately 900 nm ² .
iE-fields	Secondary electric field which is induced by B-fields (see also B-fields) close to a cable.
Impact	The change arising for a landscape or visual receptor as a result of some form of alteration to the baseline.
Impulse sound	Transient sound produced by a rapid release of energy. Impulse sound has extremely short duration and extremely high peak sound pressure.
Infralittoral	A subzone of the sublittoral in which upward-facing rocks are dominated by erect algae, typically kelps.

Instrument Meteorological Conditions	Description of weather conditions that require pilots to fly primarily by reference to aircraft instruments.
Inter-array cables	The electricity cables, which are not transmission voltage, between each WTG and between WTGs and OSPs.
Intertidal	The zone between the highest and lowest tides.
Invertebrate	Animals lacking a backbone.
IR.MIR.KR.Ldig.Ldig	Laminaria digitata on moderately exposed sublittoral fringe bedrock.
Iron Age	A cultural stage characterised by the first use of iron as the main metal. In the UK the Iron Age dates to the period between c. 700 BC and 43 AD.
Job density	The number of jobs for every resident (aged 16-64).
Kelt	A salmon which has recently spawned.
Key characteristics	The elements of the landscape and/or their inter relationship which form the defining components of the landscape.
Keystone species	A species whose presence and role within an ecosystem is of major importance to other organisms within the system due to its function and dependencies.
Kleptoparasite	A form of feeding in which one animal habitually takes prey or other food from another.
Land cover	Combination of land use and vegetation that covers the land surface.
Landform	The topography of land or seabed, the extent to which the elevation changes and resulting features.
Landscape	Human perception of the land conditioned by knowledge and identity with a place (as defined in the Guidelines for Landscape and Visual Impact Assessment (GLVIA) (The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), 2002). An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors (as defined in the European Landscape Convention (Council of Europe, 2000).
Landscape Capacity	The degree to which a particular landscape character type or area is able to accommodate change without unacceptable adverse effects on its character. Capacity is likely to vary according to the type and nature of the changes being proposed. The capacity of the landscape is derived from a combination of Landscape Character Sensitivity, Visual Sensitivity and Landscape Value.
Landscape Character	The distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place in different areas of the landscape.

Landscape Character Type	A landscape type will have broadly similar patterns of geology, landform, soils, vegetation, land use, settlement and field pattern discernible in maps and field survey records.
Landscape Effect	The consequence of change in the elements, characteristics, qualities and overall character of the landscape as a result of any development. These effects can be positive, neutral or negative.
Landscape Feature	A prominent eye-catching element or landmark (e.g. church spire, wooded hilltop).
Landscape Impact	The change in the elements, characteristics, qualities and overall character of the landscape as a result of any development.
Landscape Quality (or Condition)	Based on judgments about the physical state of the landscape and about its intactness. Also relates to the state of repair of individual features and elements which make up character in any one place.
Landscape Resource	The combination of elements that contribute to landscape context, character and value.
Landscape Sensitivity (to a specific type of change)	<p>The extent to which a landscape can accept change of a particular type and scale and is assessed in relation to the following:</p> <ul style="list-style-type: none">• Existing land use;• Pattern and scale of the landscape, including simplicity/complexity;• Landscape quality or condition including presence of any detracting features;• The nature of views – visual enclosure/openness of views, scale of views;• Value placed on the landscape – which may be expressed through designation; and• Scope of mitigation, which will be in character with the existing landscape.
Landscape Value	The relative value or importance attached to a landscape (often as a basis for designation or recognition), which expresses commonly held national or local perception of its quality, special qualities and/or scenic beauty, tranquility or wildness and cultural associations.
Landuse	The primary use of land, including both rural and urban activities.
Leakage effects	Those jobs taken up by people from outside the specific study area labour market catchment.
Loafing	Behaviour not connected with feeding or breeding. The term includes preening and resting.
Lower Airspace Radar Service	A national system within which participating civil and military air traffic service units provide a radar service to aircraft, subject to controlling capacity, to transiting civil and military aircraft which are operating outside the boundaries of controlled airspace.

Lowest Astronomical Tide	The lowest level (of tide) which can be predicted to occur under average meteorological conditions, storm surges may cause considerably lower levels to occur.
LR.HLR.MusB.Cht.Cht	Chthamalus spp. on exposed upper eulittoral rock.
LR.LLR.F.FSpi.FS	Fucus spiralis on full salinity sheltered upper eulittoral rock.
LR.MLR.BF.FspiB	Fucus spiralis on exposed to moderately exposed upper eulittoral rock.
LR.MLR.BF.PelB	Pelvetia canaliculata and barnacles on moderately exposed littoral fringe rock.
LS.LSa.FiSa.Po	Polychaetes in littoral fine sand.
LS.LSa.FiSa.Po.Aten	Aten Polychaetes and Angulus tenuis in littoral fine sand.
LS.LSa.MoSa.AmSco.Sco	Scolecopsis spp. in littoral mobile sand.
Magnitude of landscape change	<p>A measure of the amount of change to the landscape that would occur as a result of proposed development, generally based on the scale or degree of change to the landscape resource, the nature of the effect and its duration. This is based on a combination of largely quantifiable parameters, such as:</p> <ul style="list-style-type: none">• The distance to proposed development;• Its visible extent;• Degree of contrast with context;• Extent to which proposed development would be visible; and• Duration of an impact.
Magnitude of visual change	<p>A measure of the amount of change to the visual context that would occur as a result of a proposed development. This is generally based on:</p> <ul style="list-style-type: none">• The scale of change to the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view that would be occupied by the proposed development;• The degree of contrast or integration of any new features of changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale, mass, line, height, colour and texture;• Duration and nature of the change, whether temporary or permanent, transient or persistent, etc.;• The angle of view in relation to the main activity of the receptor(s);• Distance of the viewpoint from the proposed development; and• Extent of the area over which the changes would be visible.
Marine Environmental High Risk Area (MEHRA)	Areas in UK coastal waters where ships' masters are advised of the need to exercise more caution than usual i.e. crossing areas of high environmental sensitivity where there is a risk of pollution from merchant shipping.

Marine Guidance Note	A system of guidance notes issued by the Maritime and Coastguard Agency which provide significant advice relating to the improvement of the safety of shipping and of life at sea, and to prevent or minimise pollution from shipping.
Maritime and Coastguard Agency	Executive Agency responsible for implementing British and international maritime law and safety policy.
Maximum bed shear stress	The bed shear stress that occurs when the current caused by a passing wave is at its highest speed (waves cause oscillating currents, which will reach a peak in one direction before reversing and flowing in the opposite direction).
Mean bed shear stress	The average bed shear stress that occurs during the passage of a wave, as the near-bed current flows first in one direction, then in the opposite.
Mesolithic	The period between the Dark Ages and the Renaissance (11th – 14th centuries AD).
Meteorological Buoys	An instrument that measures metocean and wind data.
Methodology	The specific approach and techniques used for a given study.
Metocean	Meteorology and oceanography – referring primarily to wind, waves, currents and water levels, plus secondary parameters such as air temperature, humidity, water temperature and salinity.
Metocean survey	A survey campaign designed to measure metocean data in order to help characterise the environment and to support numerical modelling studies; key survey instruments may include wave buoys, meteorological buoys, ADCPs and AWACs.
Military Aeronautical Information Publication	A document which provides comprehensive information to military aircrew on general and en-route procedures together with information on UK military aerodromes.
Minimum Safety Altitude	An altitude which is at least 1,000 ft above any obstacle or terrain within a defined region.
Ministry of Defence	UK government department responsible for implementing the defence policy set by the UK government and is the headquarters of the British armed forces.
Mitigation	Actions which may include process or design to avoid/reduce/remedy or compensate for adverse impacts of a development. Avoids or reduces an effect, significant or otherwise.
Mitigation Measures	Measures including any process, activity or design process to avoid, reduce, remedy or compensate for adverse landscape and visual impacts of a development. Mitigation can also apply to the improvement of existing adverse effects associated with existing developments/features in the landscape.

Mollusc	Invertebrates of the phylum Mollusca, typically having a calcareous shell of one, two, or more pieces that wholly or partly enclose the soft, unsegmented body, including the chitons, snails, bivalves, squids, and octopuses.
Multi Sea Winter Salmon	Adult salmon that stay more than one year at sea.
Natal	The place of birth.
National Air Traffic Services	The main air navigation service provider in the UK. It provides en-route air traffic control services to flights as well as at a number of civil airports.
NATS En-route Limited	A division of National Air Traffic Services (NATS) who provides en-route air traffic control services over the UK.
Near field (Underwater Noise)	A region close to a sound source that, depending on the size of the source relative to the wavelength of the sound, has either irregular sound pressure or exponentially increasing sound pressure towards the source, and a high level of acoustic particle velocity because of kinetic energy added directly to the fluid by motion of the source. This additional kinetic energy does not propagate with the sound wave. The extent of the near field depends on the wavelength of the sound and/or the size of the source.
Near-field (Metocean)	The study area lying within Development Area and Offshore Export Cable Corridor.
Net and Cobble	A fishing method using a sweep net paid out from a boat (cobble) and worked from the bank or shore or from waters adjacent to the bank or shore, whereby the fish are surrounded by the net and drawn to the bank or shore.
Not Under Command (NUC)	Under Part A of the International Regulations for Preventing Collisions at Sea (COLREGS), the term “vessel not under command” means a vessel which through some exceptional circumstance is unable to manoeuvre as required by these Rules and is therefore unable to keep out of the way of another vessel.
Nursery grounds	Any grounds where juvenile fish are found.
Offshore Export Cable	The proposed Offshore Export Cable and all associated cable protections.
Offshore Export Cable Corridor/Export Cable Corridor	The area within which the proposed Offshore Export Cables will be laid outside of the Development Area and up to Mean High Water Springs (see Figure 1.2).
Offshore Substation Platforms (OSPs)	The proposed OSFs include transformer platforms and AC to DC convertor platforms.
Offshore Transmission Works (OfTW)	The proposed Offshore Export Cable and OSFs. This includes all permanent and temporary works required.

Offshore Wind Farm/Wind Farm	Includes proposed WTGs, inter-array cables, meteorological masts and other associated and ancillary elements and works (such as metocean buoys). This includes all permanent and temporary works required.
One Sea Winter Salmon	Maturing fish which return to rivers to spawn after one winter at sea.
Onshore Area	The area above Mean Low Water Springs which includes OnTW.
Onshore Transmission Works (OnTW)	All proposed works within the Onshore Area, typically including underground electricity transmission cables connecting to an onshore substation and further underground cables required to facilitate connection to the national grid. This includes all permanent and temporary works required.
OSPAR	The Convention for the Protection of the marine Environment of the North-East Atlantic (the 'OSPAR Convention') was open for signature at the Ministerial Meeting of the Oslo and Paris Commissions in Paris on 22 September 1992. It was adopted together with a Final declaration and an Action Plan.
Otolith	Small calcareous structures in the inner ear of fishes (vertebrates) involved in movement and hearing.
Otter trawl	A device which is pulled along the seabed with large rectangular boards called "otter boards" either side of the mouth that keep the net open.
Over-15 metres	Category of fishing vessels that are greater than 15 metres in length.
Oxidization	Addition of oxygen to a compound with a loss of electrons.
Palaeoenvironmental	Relating to past environmental/climatic conditions.
Palaeolithic	The earliest of three subdivisions of the Stone Age, preceding the Mesolithic and Neolithic. It lasted several million years, from the first appearance of stone tools to the Mesolithic microlith-using hunter-gatherers of the most recent postglacial period (+/- 8,500 years BC), and is normally divided into Lower, Middle and Upper phases.
Particle Tracking (PT)	Particle Tracking – a numerical model used to predict the transport, deposition, and subsequent erosion of a tracer (such as dredged or scoured sediment) released into the marine environment.
Passerine	Birds that are of the order Passeriformes, which includes more than half of all bird species. Referred to as perching birds or songbirds.
Peak pressure	The highest pressure above or below ambient that is associated with a sound wave.
Pelagic (Natural Fish and Shellfish)	Marine species inhabiting the mid and upper layers of the open sea.
Pelagic (Commercial Fish)	Activities or species located in the water column.

Perception (of Landscape)	The psychology of seeing and possibly attaching value or meaning to the landscape.
Permanent threshold shift (PTS)	A total or partial permanent loss of hearing caused by some kind of acoustic or drug trauma.
Piscivorous	Species which exclusively feed on fish.
Policy Woodlands	A diverse and multi purpose woodland, historically associated with plantings around country houses.
Polychaete	A general term for members of the Class Polychaeta (segmented worms of the Phylum Annelida).
Precision Approach Radar	A type of radar guidance system designed to provide lateral and vertical guidance to an aircraft pilot prior to landing.
Prehistoric	The period prior to written records for any given area which is revealed by archaeological methods and interpreted with the help of anthropological and historical analogies.
Primary Surveillance Radar	A radar system used in Air Traffic Control (ATC) that detects objects by means of reflected radio signals.
Priority Marine Feature	Habitats and species which are considered to be marine nature conservation priorities in Scottish waters.
Project	The "Project" includes the proposed: <ul style="list-style-type: none">• Wind Farm;• Offshore Transmission Works; and• Onshore Transmission Works.
Pulse	A transient sound wave having finite time duration. A pulse may consist of one to many sinusoidal cycles at a single frequency, or it may contain many frequencies and have an irregular waveform.
Quarry Species	A legally defined game bird, e.g. one which can be shot at certain times of the year.
Quota	A measure of the quantity of a species that can legally be landed within a set period.
Radar	Radio Detection And Ranging - an object-detection system which uses radio waves to determine the range, altitude, direction, or speed of objects.
Radar Mitigation Scheme	A scheme involving the implementation of appropriate measures designed to Mitigate the impact of Wind Turbine Generators (WTGs) on radar.
Ramsar	Status of a site indicating it as an important wetland area

Receptor (Seascape, Landscape and Visual)	Physical landscape resource, special interest or individual or group experiencing the view liable to change as a result of the proposed development.
Receptor	Means any sites or objects which may be affected by activities related to the Project.
Receptor Location	Location occupied by identified receptors.
Regional Population	The regional population estimate for each species as per the SMP database and Mitchell et al. (2004). Region was defined for each species separately based on foraging range (Thaxter et al. 2012).
Residual Effects	Effect of development after mitigation proposals are taken into account.
Resonance frequency	The frequency at which a system or structure will have maximum motion when excited by sound or an oscillatory force.
Rod and Line	A method of fishing using a single rod or line with lawful bait or lure.
Roosting	Resting or sleeping.
SACFOR Scale	A commonly used scale to measure abundance of species (Super Abundant, Abundant, Common, Frequent, Occasional, Rare).
Safety Zone	A marine zone demarcated for the purposes of safety around a possibly hazardous installation or works/ construction area. It may exclude other vessels.
Salmonids	Fish from the salmon family including Sea Trout and Salmon.
Seabird	Species group which inhabit offshore areas (where they forage, rest or loaf and may roost). The term is customarily applied to petrels, gannets, cormorants, skuas, gulls and terns, and auks. Some species of ducks, divers and grebes may also inhabit offshore areas, and may sometimes be considered as seabirds, although they tend to use areas closer to shore than the seabird groups described above.
Scoping	The process of identifying likely significant effects of a development on the environment – which may be carried out in a formal or informal way.
Search and Rescue	The search for and provision of aid to people who are in distress or imminent danger. The general field of search and rescue is typically determined by the type of terrain the search is conducted over.
Seascape	An area of sea, coastline and land, as perceived by people, whose character results from the actions and interactions of land with sea, by natural and/or human factors (definition from An Approach to Seascape Character Assessment, Natural England, 2012).
Seascape Character	Seascape character is a distinct and recognisable pattern of elements in the seascape that makes one seascape different from another, rather than better or worse (definition from An Approach to Seascape Character Assessment, Natural England, 2012).

Seascape Sensitivity	The ability of a seascape to respond to and accommodate change. It reflects seascape character, the nature of change and the way both are perceived and experienced by people (definition from An Approach to Seascape Character Assessment, Natural England, 2012).
Secondary Surveillance Radar	A radar system used in ATC that detects aircraft position through communication with an onboard radar transponder. It also requests additional information from the aircraft such as identity and altitude.
Sessile	Permanently attached to a substratum.
Shock wave	A propagating sound wave that contains a discontinuity in pressure, density, or particle velocity.
Significant Effect	An effect which is considered by the assessor to be “significant” in terms of the Environmental Impact Assessment Regulations (85/337/EEC) which require the identification of significant effects.
Significant Wave Height	A statistical representation of a wave train to represent the mean trough to crest distance. It is defined as four times the standard deviation of the surface elevation.
Smolt	A young salmon (or trout) after the parr stage, when it becomes silvery and migrates to the sea for the first time.
Soft start	Commencement of a noisy procedure (i.e. piling) with low energy release and building gradually and uniformly to operational levels.
Sorptive	The process in which one substance takes up or holds another; adsorption or absorption.
Sound attenuation	Reduction of the level of sound pressure. Sound attenuation occurs naturally as a wave travels in a fluid or solid through dissipative processes (e.g., friction) that convert mechanical energy into thermal energy and chemical energy.
Sound exposure	The integral over all time of the square of the sound pressure of a transient waveform.
Sound exposure level (SEL)	The constant sound level acting for one second, which has the same amount of acoustic energy, as indicated by the square of the sound pressure, as the original sound. It is the time-integrated, sound-pressure-squared level, or the accumulated exposure to sound by a receptor over a period of time. SEL is typically used to compare transient sound events having different time durations, pressure levels, and temporal characteristics.
Sound exposure spectral density	The relative energy in each narrow band of frequency that results from the Fast Fourier Transform (FFT - a mathematical operation that is used to express data recorded in the time domain as a function of frequency) of a transient waveform. It is a measure of the frequency distribution of a transient signal.

Sound pressure level (SPL)	The sound pressure level is an expression of the sound pressure using the decibel (dB) scale and the standard reference pressures of 1 μ Pa for water and biological tissues, and 20 μ Pa for air and other gases.
Southern Bight	The southern extent of the North Sea bounded by the coasts of the Netherlands, Belgium, France and Great Britain.
SPEAR Modelling	SPEAR (Sound Propagation Estimation and Ranking) model and provides an indication of the typical levels of underwater noise generated by wind farm related activities. The model allows the significance of a wide range of sources of underwater noise to be rank-ordered for a wide range of marine animals.
Spectral Wave (SW)	Spectral Wave – a numerical model used to predict wave heights, periods and directions throughout a model domain.
Spectrum	A graphical display of the contribution of each frequency component contained in a sound.
Sponge	Any of numerous aquatic, chiefly marine invertebrate animals of the phylum Porifera, characteristically having a porous skeleton composed of fibrous material or siliceous or calcareous spicules and often forming irregularly shaped colonies attached to an underwater surface.
SS.SCS.CCS	Circalittoral coarse sediment.
SS.SCS.CCS.MedLumVen	Venerid bivalves in circalittoral coarse sand or gravel.
SS.SCS.OCS	Offshore circalittoral coarse sediment.
SS.SMu.CFiMu.SpMmeg	Seapens and burrowing megafauna in circalittoral fine mud.
SS.SMx.CMx	Circalittoral mixed sediment.
SS.SMx.CMx.FluHyd	Flustra foliacea and Hydrallmania falcata on tide-swept circalittoral mixed sediment.
SS.SMx.CMx.MysThyMx	Mysella bidentata and Thyasira spp. in circalittoral muddy mixed sediment.
SS.SSa.CMuSa	Circalittoral muddy sand.
Standard Instrument Departure	A published flight procedure followed by some aircraft immediately after take-off from an airport.
Sub Adult	An individual that has passed through the juvenile period but not yet attained typical adult characteristics.
Sub-tidal	A physical term for the seabed below the mark of Lowest Astronomical Tide.
Suspended Sediment Concentrations (SSC)	Suspended Sediment Concentrations – a measure of the amount of particulate matter (such as sand or silt) held suspended within the water column.

Swimbladder	An internal gas filled organ which enables a fish to regulate hydrostatic pressure and maintain buoyancy.
Tactical Aid to Navigation	A navigation system used by military aircraft which provides the bearing and distance to a ground station.
Technical and Operational Assessment	A pre-planning service offered by NATS which determines at an early stage whether there is likely to be an aviation objection to a wind farm.
Technology Demonstration	A procedure for showcasing the method or features of a product and the viability of a chosen approach.
Teleost	A fish which possesses a large bony skeleton such as cod, herring, and plaice.
Temporary Reserved Airspace	Airspace of defined dimensions allocated for a specific user during a determined period of time.
Temporary threshold shift (TTS)	Temporary loss of hearing as a result of exposure to sound over time. Exposure to high levels of sound over relatively short time periods is thought to cause the same amount of TTS as exposure to lower levels of sound over longer time periods. The mechanisms underlying TTS are not well understood, but there may be some temporary damage to the sensory cells. The duration of TTS varies depending on the nature of the stimulus, but there is generally recovery of full hearing over time.
Threshold	The threshold generally represents the lowest signal level an animal will detect in some statistically predetermined percent of presentations of a signal. Most often, the threshold is the level at which an animal will indicate detection 50 per cent of the time. Auditory thresholds are the lowest sound levels detected by an animal at the 50 per cent level.
Tolerable	Risks in this category are ‘intermediate risk’ and risk reduction measures should be put in place to reduce their level of risk. Risks in the ‘tolerable’ category should be periodically reviewed to ensure they are being kept ‘as low as reasonably practicable’ (ALARP).
Total energy dose	The total cumulative energy received by an organism or object over time in a sound field.
Trophic	Involving the feeding habits or food relationship of different organisms in a food chain.
UK Integrated Aeronautical Information Package	A publication, updated every 28 days, which contains information of lasting (permanent) character essential to air navigation.
Unacceptable	Risks in this category are ‘high risk’ and the activity should be ruled out unless modifications can be made to reduce the risk ranking.
Under-10 metre	Category of fishing vessels that are less than 10 metres in length

United Kingdom Low Flying System	The UK low flying system covers the open airspace of the whole UK below 2,000 ft above ground level. Low Flying by military aircraft is permitted within established low flying areas which exclude large urban areas.
Unweighted sound levels	Sound levels which are 'raw' or have not been adjusted in any way, for example to account for the hearing ability of a species.
Venerid	The common name for members of the Order Veneroida of bivalve molluscs (Class Bivalvia, Phylum Mollusca). They are characterized by a shell composed of two equal sized valves, with umbones forward of the midline (anterior), and a hinge bearing central (cardinal) and lateral teeth.
Viewpoint Sensitivity	The extent to which a view would be altered by change of a particular type and scale, assessed in relation to the following: <ul style="list-style-type: none">• Location and land use (receptor activity) at the viewpoint or context of the view;• Landscape character and quality at the viewpoint;• Landscape character and quality of the intervening landscape; and• Importance of the view (which may be determined with respect to its popularity or number of affected people, its appearance in guidebooks, on tourist maps and the facilities provided for its enjoyment and references to it in literature and/or art.
Visibility Analysis	The process of identifying theoretical (based on digital modelling) and/or actual predicted areas from where any given development may be seen.
Visual Amenity	Particular composition of landscape elements that contribute to a view, or views. The value of a particular area or view in terms of what is seen (as defined in the GLVIA).
Visual Effect	The consequence of change in the appearance of the landscape as a result of a development, which may be positive or negative.
Visual Flight Rules	A set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to operate the aircraft with visual reference to the ground and by visually avoiding obstructions and other aircraft.
Visual Impact	The change in the appearance of the landscape and nature of views which may be adverse or beneficial.
Wave Buoy	A floating anchored device that is used to measure the movement of the water surface which can be analysed to determine wave statistics such as significant wave height, period and direction.
Weighted sound levels	A sound level which has been adjusted with respect to a 'weighting envelope' in the frequency domain, typically to make an unweighted level relevant to a particular species. Examples of this are the dB(A), where the overall sound level has been adjusted to account for the hearing ability of humans, or dBht(Species) for fish and marine mammals.

**Wind Turbine
Generators (WTG)**

The installation that converts energy from the wind to electrical power.

**Zone of Theoretical
Visibility**

The area predicted to have views of a proposed development on the basis of a digital terrain model or digital surface model, which may/may not take account of land cover features.

Abbreviations and Acronyms

°	Degrees
μT	Micro Tesla
μV	Microvolts
μV/m	Microvolts per metre (used to measure electric E and iE fields)
1 μPa	micropascal, an SI unit of pressure and stress
1SW	One-sea-winter Salmon
A	Amps
AA	Appropriate Assessment
AC	Alternating Current
ADCP	Acoustic Doppler Current Profiler
ADR	Air Defence Radar
AGLV	Area of Great Landscape Value
AIS	Automatic Identification System
AL	Action Level
ALARP	As Low As Reasonably Practicable
ALB	All-weather Lifeboat
AOD	Above Ordnance Datum
ASA	Archaeological Study Area
ASCOBANS	Agreement on the conservation of small cetaceans of the Baltic, Northeast Atlantic, Irish and North Seas
ASFB	Association of Salmon Fishery Boards
AST	Atlantic Salmon Trust
ATC	Air Traffic Control
AtoN	Aid to Navigation
AWAC	Acoustic Wave and Current
BGS	British Geological Survey
BOU	British Ornithologists' Union
BTO	British Trust for Ornithology

CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAPEX	Capital expenditure during the development, manufacturing and construction phases of a project
CBD	Convention on Biological Diversity
CD	Chart Datum
Cefas	Centre for Environment, Fisheries and Aquaculture Science
CEH	Centre for Ecology and Hydrology
CFWG	Commercial Fisheries Working Group
CMS	Convention on Migratory Species
COWRIE	Collaborative Offshore Wind Research Into the Environment
CSLVIA	Cumulative Seascape, Landscape and Visual Impact Assessment
dB	Decibel
dB(A)	Decibel (a weighted sound pressure level)
dB(ht)	Decibel (hearing threshold)
DC	Direct Current
DDV	Drop Down Video
DECC	Department of Energy and Climate Change
Defra	Department for Environment, Food and Rural Affairs
DFO	District Fishery Officer
DIO	Defence Infrastructure Organisation
DS	Deconfliction Service
DSFB	District Salmon Fishery Board
DTI	Department of Trade and Industry
EC	European Commission
ECMA	East Coast Management Area
EIA	Environmental Impact Assessment
EMF	Electromagnetic Field
EPS	European Protected Species
ES	Environmental Statement

ESAS	European Seabirds at Sea
ESS	Energy Security Strategy
EU	European Union
FAD	Fish Aggregating Device
FCS	Favourable Conservation Status
FF	Far-field
FIR	Fisheries Industry Representative
FLO	Fisheries Liaison Officer
FMA	Fishermen's Mutual Association Ltd. (Pittenweem)
FoF	Firth of Forth Phase 1
FTE	Full Time Equivalent
FTMS	Forth and Tay Modelling System
FTOWDG	Forth and Tay Offshore Wind Developers Group
FWPM	Freshwater Pearl Mussels
GBS	Gravity Base Substructures
GDL	Garden and Designed Landscape
GDP	Gross Domestic Product
GES	Good Environmental Status
GHG	<i>greenhouse-gas</i>
GIS	Geographical Information System
GLVIA	Guidelines for Landscape and Visual Impact Assessment
Gt	Gigatonnes
GT	Gross Tonnage
GVA	Gross Value Added
GW	Gigawatt
HAT	Highest Astronomical Tide
HAWG	<i>Herring Assessment Working Group</i>
HD	Hydrodynamic
HE	High Explosive
HMR	Helicopter Main Route

HRA	Habitats Regulation Appraisal
HS	Historic Scotland
HSA	Horizontal Subtended Angle
Hz	Hertz
IALA	International Association of Lighthouse Authorities
IBTS	International Bottom Trawl Survey
IECS	Institute of Estuarine and Coastal Studies
ICES	International Council for the Exploration of the Sea
ICOL	Inch Cape Offshore Limited
IEA	International Energy Agency
IEEM	Institute of Ecology and Environmental Management
IFG	Inshore Fisheries Group
IHLS	International Herring Larvae Survey
IMO	International Maritime Organisation
INSPIRE	Impulse Noise Sound Propagation and Impact Range Estimator
IPCC	Intergovernmental Panel on Climate Change
IWC	International Whaling Commission
JNAPC	Joint Nautical Archaeology Policy Committee
JNCC	Joint Nature Conservation Committee
kHz	kilohertz
kJ	kilojoules (unit of energy)
km	Kilometre
KV	Kilavolts
LARS	Lower Airspace Radar Service
LAT	Lowest Astronomical Tide
LCA	Landscape Character Assessment
LLA	Local Landscape Area
LNR	Local Nature Reserve
LSE	Likely Significant Effect
m	meter

m/hr	Metres per hour
m/s	Metres per second
MAIB	Marine Accident Investigation Branch
MarLIN	The Marine Life Information Network
MARPOL	International Convention for the Prevention of Pollution from Ships
MCA	Maritime and Coastguard Agency
MCEU	Marine Consents and Environment Unit
MCZ	Marine Conservation Zone
MEHRA	Marine Environmental High Risk Area
MESH	Mapping European Seabed Habitats
MHWS	Mean High Water Springs
Mil AIP	Military Aeronautical Information Publication
ML	Most Likely
MLS	Minimum Landing Size
MLWS	Mean Low Water Springs
MMO	Marine Management Organisation
MOD	Ministry of Defence
MORL	Moray Offshore Renewables Ltd
MPA	Marine Protected Area
MS	Marine Scotland
MSA	Minimum Safety Altitude
MSFD	Marine Strategy Framework Directive
MS-LOT	Marine Scotland Licencing Operations Team
MSS	Marine Scotland Science
MSW	Multi-sea-winter Salmon
mV	Millivolts
MW	Megawatts
NATS	National Air Traffic Service
NCN	National Cycle Network
NERL	NATS En Route Ltd

NF	Near-field
NIS	Non indigenous species
NLB	Northern Lighthouse Board
nm	nautical mile
NnG	Neart na Gaoithe
NNR	National Nature Reserve
NOMIS	The Office for National Statistics website
NPC	Natural Power Consultants
NRA	Navigational Risk Assessment
O&M	Operations and Maintenance
OECD	Organisation for Economic Co-operation and Development
OfTW	Offshore Transmission Works
OnTW	Onshore Transmission Works
OPEX	Expenditure on operation and maintenance
OS	Ordnance Survey
OSP	Offshore Substation Platform
OSPAR	The Convention for the Protection of the marine Environment of the North-East Atlantic (the 'OSPAR Convention')
OWF	Offshore wind farm
P	Pascal SI unit of pressure and stress
PAH	Polycyclic Aromatic Hydrocarbons
PAM	Passive Acoustic Monitoring
PAR	Precision Approach Radar
PBR	Potential Biological Removal
PCB	Polychlorinated Biphenyl
PEXA	Practice and Exercise Areas
PMF	Priority Marine Feature
ppm	Parts per Million
PSA	Particle Size Analysis
PSD	Particle Size Distribution

PSR	Primary Surveillance Radar
PT	Particle Tracking
PTS	Permanent Threshold Shift
PVA	Population Viability Analysis
RCAHMS	Royal Commission on the Ancient and Historical Monuments of Scotland
RMS	Radar Mitigation Scheme
RNLI	Royal National Lifeboat Institution
RSPB	Royal Society for the Protection of Birds
RYA	Royal Yachting Association
SA	Scallop Association
SAC	Special Area of Conservation
SAR	Search and Rescue
SCA	Seascape Character Assessment
SCOS	Special Committee on Seals
SD	Standard Deviation
SE	Standard Error
SEA	Strategic Environmental Assessment
SEL	Sound Exposure Level
SFF	Scottish Fishermen's Federation
SFI	Sea Fisheries Inspectorate
SID	Standard Instrument Departure
SL	Source Level
SLV	Seascape, Landscape and Visual
SLVIA	Seascape, Landscape and Visual Impact Assessment
SMP	Survey Monitoring Plan
SMRU	Sea Mammal Research Unit
SNCB	Statutory Nature Conservation Bodies
SNH	Scottish Natural Heritage
SOSS	Strategic Ornithological Support Services
SPA	Special Protection Area

SPEAR	Simple Propagation Estimator and Ranking
SSC	Suspended Sediment Concentrations
SSSI	Site of Special Scientific Interest
STW	Scottish Territorial Waters
SW	Spectral Wave
T	Telsa (unit used to measure magnetic fields)
TAC	Total Allowable Catch
TACAN	Tactical Aid to Navigation
TCE	The Crown Estate
TD	Technology Demonstration
TOC	Total Organic Carbon
TOPA	Technical and Operational Assessment
TRA	Temporary Reserved Airspace
TS	Transmission Loss
TTS	Temporary Threshold Shifts
UK	United Kingdom
UK IAIP	UK Integrated Aeronautical Information Package
UKBAP	UK Biodiversity Action Plan
UKCIP	UK Climate Impacts Programme
UKHO	United Kingdom Hydrographic Office
UKLFS	UK Low Flying System
UKMO	UK Meteorological Office
URD	User Requirement Document
UXO	Unexploded ordnance
V	Volts
V/m	Volts per m
VFR	Visual Flight Rules
VMS	Vessel Monitoring System (satellite tracking data)
VOR	Valued Ornithological Receptor
WA	Wessex Archaeology

WC	Worst Case
WeBS	Wetland Bird Survey
WTG	Wind Turbine Generators
WWI	World War 1
WWII	World War 2
WWT	Wildfowl and Wetlands Trust
ZTV	Zone of Theoretical Visibility