

Section 14

Glossary

14 Glossary

Acoustic	Producing or related to sound.
Advection	The horizontal transfer of a property such as heat, caused by air movement.
Algae	Photosynthetic mainly aquatic organisms that differ from plants in not having true leaves, roots, or stems; includes the seaweeds.
Annulus	The space between the drill stem and the wall of a bore hole.
Appraisal well or drilling	A well drilled after the discovery of new hydrocarbon reserves, in order to obtain more information on their physical extent, quantities and likely production rates.
Assemblage (of organisms)	A group of organisms living together.
Atlantic Frontier/Margin	The region to the west of Orkney, Shetland and the Western Isles where the shallow waters of the UK Continental Shelf meet the deeper waters of the Atlantic Ocean.
Azoic	Without any life or before the appearance of life.
Backscatter	A reflection phenomenon in which a non-reflective surface, which is a surface that does not reflect energy coherently, randomly scatters energy.
Baleen whale	Whales of the Suborder Mysticeti. They have plates of whalebone (a baleen) along the upper jaw for filtering plankton from the water.
Ballast	The weight used by ships and offshore drilling rigs near the bottom of their hulls to make them seaworthy and keep them upright. The ballast can be steel, but is often seawater on an offshore rig.
Baseline study	A study carried out to establish the environmental conditions which prevail at a given site before any human activity is introduced. This provides a 'baseline' against which any future changes in conditions can be compared.
Bathyal zone	The bathyal zone begins at the continental slope and reaches a depth of 2,000 metres in oceans.
Bathymetry	The measurement of depths of water in oceans, seas and lakes. Also the information derived from such measurements.
Beaked whales	Medium sized whales of the family Ziphiidae possessing a distinct beak extending from the skull in most species.
Bedload transport	The movement of sediments along the seabed by water currents.
Benthic	Of or relating to the seabed.
Benthic community	The assemblage of organisms living in or on the seafloor.
Benthic storms	Periods of severe sea bed currents, capable of remobilising and dispersing sediments.
Benzene ring	The hydrocarbon benzene forms a closed ring of 6 carbon atoms and can form parts of larger hydrocarbon compounds.
Best Available Techniques	<p>Under Article 2.11 of the Integrated Pollution Prevention and Control Directive (96/61/EC): means the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole.</p> <ul style="list-style-type: none">- 'techniques' shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned,- 'available' techniques shall mean those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator,- 'best' shall mean most effective in achieving a high general level of protection of the environment as a whole.

Best Environmental Practice	Practices and procedures developed to minimise impact to the environment.
Bioaccumulate	Bioaccumulation is the concentration of a particular substance in a living organism, possibly with harmful effects.
Biocide	A chemical or agent which kills bacteria.
Biodiversity	The number and variety of different organisms in a given environment. This includes genetic diversity, species diversity, and ecological diversity.
Biogenic oxidation (of methane)	Oxidation by chemosynthetic bacteria; provides a food source for other organisms.
Biomass	The mass of living organisms within a given environment, measured in terms of weight per unit of area.
Biota	The animals, plants, and microbes that live in a particular region.
Biotope	An entity that includes the habitat and the community of organisms living on or within it.
Bioturbation	The disturbance and mixing of sediments by burrowing animals.
Bituminous shale	A sedimentary rock that contains solid or very heavy hydrocarbons such as bitumen.
Bivalve	A marine or freshwater organism (often a mollusc, but can be from other phyla also) that has its body contained within two shells joined by a hinge.
Blowout	SINTEF defines a blowout as an incident where formation fluid flows out of the well or between formation layers after all the predefined technical well barriers or the activation of the same have failed. The scale of such well control incidents ranges from the loss of a few litres of hydrocarbon to major events.
Blow-out preventer stack	Or BOP. A hydraulically operated wellhead device that can be actuated to close a well in order to prevent an uncontrolled release of fluids (a blow-out).
Borehole	The hole drilled by the bit.
Box core	A box shaped sampling device sometimes set in a frame, and used to penetrate and gather sediment samples in offshore environmental surveys.
Bunkering	Re-fuelling a ship or drilling rig.
Bycatch	The harvest of fish or shellfish other than the species for which the fishing gear was set.
Caisson	A water-tight chamber.
Carbonate mounds	Large (up to several hundred metres) sea bed structures comprised of accumulated calcium carbonate CaCO_3 . Can be buried, half emergent or emergent above the sea bed. Carbonate mounds in the northwest Atlantic are partly formed by the complex skeletal remains of cold water corals.
Carcinogen	Any cancer-causing substance or agent.
Casing	Steel lining inserted into a well as drilling progresses to prevent the wall of the hole from caving in. It also prevents the inflow of unwanted fluids from surrounding formations and provides a means of extracting oil (and gas) if a well is productive.
Cephalopods	Any member of the mollusc class Cephalopoda which includes the octopus, squid, and cuttlefish.
Cetacean	A member of the order Cetacea, which are aquatic mammals comprising porpoises, dolphins, and whales.
Clean technology	Technology developed to minimise impact to the environment.
Closed chamber well test	A type of drillstem testing conducted with the drillstring in the hole and the surface valve closed to create a closed chamber of known volume into which the reservoir fluid can flow.
Concretions	A solid mass formed by accumulations of encrusting epifauna or seaweeds.
Conductor pipe	First string of casing to be inserted and cemented into the borehole. Its purpose is to prevent the soft formations near the surface from caving in.

Continental shelf	A relatively flat platform covered with shallow water that surrounds the continents. Extends from the beach to the shelf break (sharp change of slope) at a water depth of ~450 ft.
Continental slope	The ocean bottom slope of 3° to 6° leading from the continental shelf down to the continental rise (peak of accumulated sediment at end of slope).
Copepods	Small free-living or parasitic crustaceans of the subclass Copepoda, living in marine and fresh waters. The free-living forms are an important constituent of plankton.
Crude oil	A general term for unrefined petroleum or liquid petroleum.
Crustaceans	Any invertebrate of the phylum Crustacea. Mostly aquatic animals, including crabs, lobsters, and shrimps, having hard shells, jointed bodies, and antennae.
Cuttings re-injection	A method for the disposal of drill cuttings where they are mixed with water to form a slurry and pumped at high pressure down a separate injection well.
Demersal	Living in the water column at or near seabed. Usually in relation to fish.
Development well or drilling	A well drilled for the purpose of production of gases or liquids (eg hydrocarbons) from a known reservoir, or for the injection or disposal of gaseous or liquid wastes into sub-surface voids (see also appraisal well and exploration well).
Diatoms	Unicellular planktonic algae with silica shells.
Dinoflagellates	Unicellular planktonic organisms of the Order Dinoflagellata, having two flagella and often bearing a tough cellulose shell (theca).
Discharge	To release a substance into the environment or a substance emitted to the environment.
Dredge spoil	The sediment dredged (removed) from the bottom of a body of water.
Drill cuttings	Rock chips produced by chipping and crushing action of the drill bit.
Drilling mud	Drilling muds are fluids circulated down a well during drilling. They are usually water or oil based and contain clay (bentonite or barium sulphate). The main functions of drilling mud/fluid are to lubricate the drill bit, remove cuttings, and to maintain down-hole pressure.
Dynamic position system	A system of computer controlled propulsion units called thrusters that allow the stationing of a vessel without the use of anchors.
Echinoderms	A large group of marine animals characterised by five-fold symmetry and a skeleton of calcite plates. Includes starfish and sea urchins.
Echolocation	The use of sound, like radar, by ships or animals to locate objects in the surrounding environment.
Elasmobranch	Any of numerous fishes of the class Chondrichthyes characterized by a cartilaginous, non-bony skeleton, including sharks, skates and rays.
Emulsion	An intimate mixture of either oil in water or water in oil.
Endocrine disruptor	Substances which interfere with the endocrine system by mimicking, blocking or otherwise disrupting the function of hormones.
Environmental Authorities	Organisations which, under Irish law, must be consulted over a proposed development. Under legislation relating to the SEA Directive, these are the EPA, DoEHLG and DCMNR.
Environmental area assessment (EAA)	Required with any application for drilling. The EAA, using available information and where necessary site-specific surveys, should describe the existing environmental conditions in sufficient detail to permit assessment of spatial and temporal changes in contamination of the sea-bed, water column and biota resulting from subsequent exploration and production development activities. Likely impacts on pelagic organisms and specific natural resources should be described.
Environmental management system (EMS)	A management approach which enables an organisation to identify, monitor and control its environmental aspects; usually conforming to International Standard of Organisation 14001.
Epifauna	Animals living on the seafloor or attached to other objects/animals.
Euphausiids	Shrimp-like planktonic marine invertebrates also known as krill.
European site	Terminology used for conservation sites designated under European Directives.

Eutrophication	Over-enrichment of a water body with nutrients, resulting in excessive growth of organisms and depletion of oxygen concentration.
Exploration licence	A Standard Exploration Licence is issued for water depths down to 200 m and runs for 6 years in two phases. A Deepwater Exploration Licence is issued for water depths exceeding 200 m and runs for 12 years over three phases. A Frontier Exploration Licence is designated by the Minister for areas with special challenges related to the physical environment, geology or technology, and runs for 16 years over through four phases. For each license phase, the holder is obliged to carry out a work programme which might include the acquisition of a defined quantity of seismic data or the drilling of a least one exploration well. For a Frontier Exploration Licence the holder must commit to at least one exploration well in order to proceed to the second phase. The area of an Exploration Licence shall be expressed in terms of blocks and/or part blocks of the Williams Grid.
Exploration well or drilling	A well drilled in an unproven area. Also known as a wildcat well.
Fathometer	A sonar instrument used to measure depths underwater.
Fecundity	The ability to produce offspring, especially in large numbers.
Flare	The burning of produced gas (or sometimes oil) on a flare stack.
Fluid continuous phase	The fluid (liquid) phase of a drilling mud which facilitates lubrication of the drill bit, transport of cuttings and maintenance of hydrostatic pressure.
Footprint	Used in the sense of an area affected by an activity, eg the area of sea bed affected by seismic survey, or by drilling discharges.
Foraminifera	Unicellular largely marine animals, the shells of which are composed predominantly of CaCO ₃ .
Foraminiferal ooze	Calcareous sediment composed of the shells of dead Foraminifera.
Foreshore	The area of intertidal land between low water and high water levels.
Formation pressure	The pressure of fluids within the pores of a reservoir, normally hydrostatic pressure (defined as the pressure exerted by a column of water extending from sea level down to the formation depth).
Frontier Licensing Round	See exploration licence and licensing round.
Gas condensate	Liquid hydrocarbons of very light crude oil composition that occur as a gas under high temperature and pressure in subsurface reservoirs.
Gas hydrates	Crystalline solids consisting of ice with gas molecules (eg methane) trapped in a cage like structure. Also known as clathrates.
Geomorphology	The study of landforms.
Geophysical	Relating to the application of physics and its methods to geological problems such as the search for petroleum.
Graben	The down-dropped blocks of rock between two normal faults.
Gravity core	Used to obtain core samples from the sea bed. A weighted core tube that is dropped from a ship and which penetrates sediments under its own weight.
Groundfish survey	A survey of bottom dwelling (demersal) fish such as flounder and cod.
Groundtruthing	Survey work designed to confirm the findings of wide-scale remote sensing work. For example, the use of sea bed sampling to confirm information on seabed type derived from sonar surveys. Also used in the context of model verification.
Half-graben	A down-dropped block of rock with a normal fault along just one side, rather than along both sides as with a graben.
Homogenous	Similar or uniform structure or composition throughout.
Hydrocarbon	A compound containing only the elements hydrogen and carbon. May exist as a solid, liquid or gas. The term is mainly used in a catch-all sense for oil, gas and condensate.
Hydrocarbon drop-out	Incomplete combustion of hydrocarbons during flaring resulting in the introduction of hydrocarbons to the marine environment.
Hydrophone	Microphones used at sea to detect sound energy.

Hydrostatic pressure	The pressure exerted by overlying water.
Immiscible	Liquids which are insoluble in one another, eg oil and water.
Infauna	Animals that live within the seabed sediments (see macrofauna and meiofauna).
Injection well	A well used to pump fluid into a subsurface formation in order to dispose of fluid or to maintain/increase subsurface reservoir pressure.
Interfaces	The boundaries between two immiscible fluids such as oil and water.
Interstitial	Pertaining to material in the pores of rock or in the spaces between sediment particles.
Invertebrate	An animal without a backbone.
Jack-up rig	Essentially a barge with legs that can be lowered to the sea bed.
Lead time	Period of time between the initiation of a process and its completion.
Licensing Round (oil and gas industry context)	A system of encouraging and regulating exploration for hydrocarbon reserves, where governments invite applications from commercial companies to undertake exploratory work programmes in order to evaluate the hydrocarbon-bearing potential within defined unlicensed areas.
Littoral zone	The area between high and low tide.
Macrofauna	Referring to Defined as those animals retained on a 0.5 mm mesh when a sample is sieved.
Maerl	Maerl is a collective term for several species of calcified red seaweed. It can form extensive accumulations on the sea bed that provides a habitat for a wide diversity of other marine organisms.
Mariculture	Fish farming or aquaculture of marine animals or plants.
Marine riser	A 16 to 20" diameter tube made of several joints that connects the cellar deck of a drillship or rig to the blowout-preventer stack of a subsea well.
Megafauna	Larger seabed animals, normally defined as those which are large enough to be seen on seabed photographs and which can be collected in trawls and dredges.
Meiofauna	Interstitial animals (ie living between sediment grains) that mostly pass through a 0.5 mm mesh.
Metadata	Data that are used to describe other data. Metadata describes how and when and by whom a particular set of data was collected, and how the data are formatted.
Metocean	Term for meteorological and oceanographic data.
Microflagellates	A general term for microscopic planktonic organisms bearing flagella.
Molluscs	Invertebrates of the phylum Mollusca with a soft unsegmented body usually protected by a shell. Many diverse forms including snails, clams and squid.
Morphology	The form and structure of an organism or the study of the form of things.
MPA	Marine Protected Areas (MPAs) are designated under the Oslo Paris Convention to help protect endangered species and habitats.
Natura 2000 sites	Natura 2000 is a European network of protected sites which represent areas of the highest value for natural habitats and rare species (see SAC and SPA).
Natural Heritage Area	Natural Heritage Areas (NHAs) are conservation areas designated for wildlife under the Irish Wildlife Amendment Act (2000).
Nephrops	The Norway lobster, <i>Nephrops norvegicus</i> (also called Dublin Bay Prawn or Langoustine); a slim orange-pink lobster.
Oil-based fluid	See drilling mud. Another term for oil-based drilling mud.
Organic-phase drilling fluid	Oil-based as opposed to water-based drilling fluid (mud).
Organometal	One of the forms in which a metal can occur in the sea; contains carbon to metal bonds and therefore has an organic nature.
Passive acoustic surveys	Or passive acoustic monitoring. The use of hydrophones to detect noise and/or monitor for the presence of marine mammals.
Passive diffusion	Diffusion of substances across a membrane or barrier without the aid of other molecules or energy inputs.

Pelagic	Inhabiting the water column of the sea.
Petrochemical	Pertaining to chemical derivatives of natural gas or petroleum.
Petrogenic	Derived from petroleum.
Photic zone	The layer of the ocean that is penetrated by sunlight; extends to a depth of about 200 metres.
Photodetritus	The organic remnants of dead photosynthetic organisms.
Phytoplankton	Free floating microscopic plants.
Phytoplankton blooms	A phytoplankton bloom is a relatively rapid increase in the population of phytoplankton in an aquatic system.
Pinnipeds	Of, relating to or belonging to the Pinnipedia, an order of aquatic mammals including seals, sea lions, and walrus.
Piscivorous	Feeding on fishes.
Pockmarks	Pockmarks are small depressions in the sea bed associated with areas of soft mud; formed by fluid/gas escape at the sea bed.
Polychaetes	Marine worms with a segmented body and bristled fleshy appendages of the class Polychaeta.
Polychlorinated biphenyls	A group of biologically persistent organic compounds containing chlorine. Also known as PCBs.
Polycyclic aromatic hydrocarbons	Class of large aromatic molecules composed of several benzene rings fused together. Also known as PAHs.
Primary producer	An organism capable of using energy derived from light or a chemical substance to produce organic material.
Propeller cavitation	The formation of partial vacuums in the water surrounding a propeller; generated by its own motion.
Ramsar sites	Ramsar sites are wetlands of international importance particularly for bird species designated under the Ramsar Convention.
Recruitment	Survival of juveniles until they become members of the spawning population.
Remotely operated vehicle	Or ROV. An unmanned submersible vehicle controlled from surface.
Reservoir	A single continuous accumulation of gas and/or oil in the pores of a reservoir rock.
SAC	Special Areas of Conservation (SACs) are protected sites designated under the EC Habitats Directive in order to conserve important habitats and species (excluding birds). Part of Natura 2000 (see above).
Sea mount	Sea mounts are undersea mountains.
Sedimentology	The science of the production, composition, transport, and deposition of sediment.
Seismic air gun	A loud sound source used in seismic surveys which produces a pulse of sound energy.
Seismic array	A geometrical arrangement of seismic sound sources and receivers on streamers towed behind a seismic survey vessel.
Seismic survey	A technique for determining the structure of underground rock formations by sending energy waves or sound waves into the earth and recording the wave reflections. Three-dimensional seismic surveys provide enhanced data for determining well locations.
Sessile	Permanently attached or fixed; not free-moving. Often applied to plants or animals living on the sea bed.
Shelf break	The sharp change in sea bed incline between the continental shelf and the continental slope.
Sidescan survey	A means of obtaining images the seafloor over a wide area, using bursts of high-frequency sound.
SPA	Special Protected Areas (SPAs) are sites designated by the UK Government to protect certain rare, vulnerable, and regularly occurring migratory species of birds. Part of Natura 2000 (see above).
Spawning	The production and release of gametes (eggs or sperm) by animals.

Spud mud	Drilling mud used to drill the initial section (or top hole) of a well; often consisting of sea water and bentonite clay.
Static fishing gear	Pots, creels and other fixed fishing apparatus.
Steering Group	A panel of experts representing interested key organisations or stakeholder groups, overseeing the progression of the SEA.
Strata	Layers of sediment or layers of sedimentary rock. The plural of 'stratum'.
Stratification	The accumulation of material in layers or beds.
Stratigraphy	The study of the history, composition, relative ages and distribution of strata.
Streamer	A flexible clear plastic tube containing groups of hydrophones used for marine seismic surveys (see also 'seismic array').
Sublittoral	Below the level of low tide.
Substrata	The sediments or rocks upon which benthic organisms live (singular substratum).
Surface sediment	The top few centimetres of seabed sediment.
Surficial	Relating to or occurring on a surface.
Sustainable development	A socio-economic concept, the central tenet of which is: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."
Swimbladder	A gas or oil-filled structure in bony fish that is used to regulate buoyancy.
Synergistic impact	When the interaction of two or more factors has a greater total impact than the sum of their individual effects.
Tectonic activity	Shifting of the Earth's crust as a result of movements within the body of the planet. Gives rise to earthquakes, volcanoes and other seismic phenomena.
Thermocline	Or temperature discontinuity. A zone in the water column where temperature changes rapidly with depth forming a boundary between warm water above and cold water below.
Thruster	An auxiliary propulsion unit used on a drillship or semisubmersible to maintain position.
Top hole	The initial hole or well section drilled in the sea bed into which the conductor pipe is cemented.
Topography	The graphic representation of a surface on a map by the use of contour lines.
Trace element	A chemical found in very small amounts in a given substance. Organisms need certain trace elements to survive.
Tributyltin	A very toxic organic compound containing tin. It was formerly used in antifouling paints on vessels and fixed marine structures.
Turbid	Clouded or opaque with suspended sediment.
Turbidity currents	A quick-moving mixture of water and sediments that travels downslope, scouring the substratum and depositing sediments as it goes.
Upwelling	A process in which cold, often nutrient-rich waters from the ocean depths rise to the surface.
Volatile	A substance that will evaporate at a relatively low temperature.
Water column	The open water of the ocean between the surface and the floor.
Water-based fluid/mud	See drilling mud. Drilling mud with water as opposed to oil as the fluid continuous phase.
Weathering	The natural chemical or physical alteration of an object or deposit through time.
Weighting agent (barium sulphate)	A clay additive, also known as bentonite, used to control the density of a drilling mud/fluid.
Wellbore	The hole drilled by the bit.
Wellhead	The portion of an oil well that is above ground or above the sea bed.
Well/poorly sorted	Refers to the extent to which sediments contain particles all of a similar size.
Wetlands	A lowland area, such as a marsh or swamp, saturated with water.

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Wildcat	See exploration well.
Williams Grid	A spatial delineation system used in Ireland where offshore waters are divided into numbered quadrants measuring 1 degree of latitude by 1 degree of longitude. Each quadrant is in turn sub-divided into 30 numbered blocks, measuring 10 minutes latitude by 12 minutes longitude.
Zonation	Distribution of plants or animals arranged along an environmental gradient such as water depth.
Zooplankton	Free floating mostly microscopic animals.