

# Glossary of Sustainability Terms

**Abandoned Well** – A well that has had one or more permanent plugs installed to ensure that there is no flow between porous geologic formations or to/from surface. An abandoned well can no longer produce oil or natural gas and has been left in a permanently safe and secure condition.

**Air Emissions** – The release or discharge of a pollutant into the air.

**Air Pollutants** – Air pollution describes a collection of airborne pollutants that contribute to our air quality. The term “pollutants” recognizes that these substances are undesirable because of their impact on human health, the environment and the economy. These air pollutants are all very different. They differ in their chemical composition, reaction properties, emission sources, how long they last in the environment before breaking down, their ability to move long or short distances and their eventual impacts.

**Air-to-Fuel Ratio** – Most engines in the upstream oil and gas industry use natural gas as fuel. The air-to-fuel-ratio defines the amount of air which needs to be mixed with this fuel-gas to allow the engine to operate properly.

**Ambient Air Monitoring** – Any type of system used to measure the concentration of select pollutants in the ambient air. This may include active or passive monitoring systems.

**Aquifer** – An underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt, or clay) from which groundwater can be extracted using a water well.

**Barrel of Oil Equivalent (bbls OE)** – A unit of measure that converts petroleum products, like natural gas, bitumen and condensate, to an oil equivalence based on heating value.

**Baseline Emissions** – Part of the Kyoto Protocol – this system has no specific emissions cap but instead uses an emissions performance profile (the baseline) that facilities must equal, or perform better than, in order to comply with the scheme. Those that perform better (produce fewer

emissions) than their baseline generate emission credits (the difference between actual and baseline emissions). These credits can then be sold to other entities that are unable to meet their emission compliance commitments.

**Benzene** – Benzene is part of the group of substances called volatile organic compounds (VOCs) and is a known human carcinogen (cancer-causing substance). Benzene can be harmful to the environment. Motor vehicle emissions are often the main source of benzene, followed by industrial emissions and other combustion sources. Benzene also enters the air through evaporation from handling and storing fuels, the use of solvents, and cigarette smoke. Natural sources include volcanoes and forest fires.

**Biodiversity** – Biodiversity is the variation of life at the species, genetic and geographic levels.

**Bitumen** – Bitumen is a thick, sticky and dense type of crude oil resembling cold molasses (at room temperature). It requires upgrading before it can be refined and is so viscous that it must be heated or diluted with lighter hydrocarbons to be transported by pipeline.

**Capacity Building** – Activities undertaken to ensure members of local communities can participate in and benefit from the industrial activity going on around them. This includes education and training initiatives and working closely with local contractors to create opportunities, put in place health and safety policies and procedures, and clearly communicate the contract bidding process.

**Capital Project Management System** – A project management system codified in a set of documents that define requirements and provide guidance.

**Carbon Footprint** – A carbon footprint is a measure of the impact our activities have on the environment, and in particular climate change. It relates to the amount of greenhouse gas produced in our day-to-day lives through burning fossil fuels for electricity, heating and transportation, etc.

**CDP** – An independent not-for-profit organization that acts as an intermediary between shareholders and corporations

on all climate change related issues, providing primary climate change data from the world's largest corporations to the global market place.

**Climate Change** – A long-term shift in climate measured by changes in temperature, precipitation, winds, and other indicators. Climate change can involve both changes in average conditions and changes in variability, including, for example, changes in extreme conditions. Climate change can be caused by both natural processes and human activities, in particular those that alter the chemical composition of the atmosphere. The build-up of greenhouse gases in the atmosphere is the primary cause for concern about climate change now and into the immediate future. Particularly important is the increase in atmospheric carbon dioxide, which is released through the combustion of fossil fuels.

**Community Investment** – Financial contributions, volunteer hours and services in kind, all of which promote the well-being of communities and our employees.

**Completion (of wells)** – Once a well is considered commercially viable, it must be completed to allow for the flow of oil or natural gas to the surface. Completion can include additional stimulation of the reservoir, such as fracturing and requires the installation of downhole pipe and equipment required to enable safe and efficient production from the well. Following completion, wells are “tied in” to production systems through installation of pipelines, surface batteries or other facilities.

**COSIA** – Canadian Oil Sands Innovation Alliance. A group of 13 oil companies comprising 90 percent of all oil sands production. Participants share knowledge and experience to address GHG emissions.

**Cumulative Effects** – The effect on the environment or community which results from effects of a project when combined with those of other past, current and future projects and activities. These may occur over a certain period of time and distance.

**Desalination** – Desalination refers to any of several processes that remove excess salt or other minerals from water.

**Disposal Well** – A well, often a depleted oil or gas well, into which waste fluids can be injected for safe disposal.

**Domestic Security Alliance Council (DSAC)** – A group that creates a strategic partnership between the Federal Bureau of Investigation (FBI) and the U.S. private commercial sector to enhance communications and promote the timely and effective exchange of information.

**Ecosystem Function** – Essential services that support human needs such as food, shelter, clothing, medicines and fuel.

**Endangered Species** – A wildlife species that is facing imminent extirpation or extinction.

**Exploratory Well** – A well drilled either in search of a new, as yet undiscovered accumulation of oil and gas, or in an attempt to significantly extend the limits of a known reservoir.

**Extractive Industries Transparency Initiative (EITI)** – A global Standard to promote openness and accountable management of natural resources. It seeks to strengthen government and company systems, inform public debate, and enhance trust. In each implementing country it is supported by a coalition of governments, companies and civil society working together.

**Flaring** – The burning of unwanted or uneconomic quantities of gas through a pipe (also called a flare). Flaring is a means of disposal used when there is no way to capture and transport the gas to market and the gas cannot be used for any other purpose. The practice of flaring is being steadily reduced because of the high value of gas and environmental concerns.

**Fossil Fuels** – A general term for buried combustible geologic deposits of organic materials, formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the Earth's crust over a period of hundreds of millions of years.

**Fracturing (Fracking)** – The practice of pumping special fluids down the well under high pressure; fracturing causes the formation to crack open, creating passages for the reservoir fluids to more easily flow into the wellbore.

**Freshwater** – Non-saline groundwater, which is groundwater that has total dissolved solids less than or equal to 4000 milligrams per liter.

**Fugitive Emissions** – Natural gas leaks released to the atmosphere from processing equipment other than those from stacks or vents. These emissions may be intentional (venting) or unintentional (equipment wear and tear, faulty components).

**Global Reporting Initiative** – A leading organization in the sustainability field that promotes reporting as a way for organizations to become more sustainable and contribute to sustainable development.

**Greenhouse Gas Emissions** – Gases in the Earth's atmosphere that trap heat. The main greenhouse gases are water vapor, carbon dioxide, methane, nitrous oxide and a group of chlorine and fluorine-containing gaseous compounds such as hydro fluorocarbons, per fluorocarbons and Sulphur hexafluoride.

**Groundwater** – Water found below the surface in the spaces between particles of rock and soil, or in crevices and cracks in rock. The water filling these openings is usually within 325 feet (100 meters) of the surface and much of the earth's freshwater is found in these spaces. Groundwater flows slowly through water-bearing formations (aquifers) at different rates. In some places, where groundwater has dissolved limestone to form caverns and large openings, its rate of flow can be relatively fast but this is exceptional.

**Habitat** – A habitat is a geographical unit that effectively supports the survival and reproduction of a given species or individuals of a given species.

**Horizontal Well** – Horizontal drilling is the process of drilling a well that begins as a vertical (or inclined) wellbore which extends from the surface to a subsurface location just above the target oil or gas reservoir, called the "kickoff point." The wellbore then veers off on an arc, using special downhole tools, to intersect the reservoir and continues at a near-horizontal attitude through the reservoir until the desired bottom hole location is reached.

**HSE Management System** – A system that supports implementation of HSE and SD policies by providing a consistent framework and approach to managing vital issues.

**Hydrocarbons** – A large class of liquid, solid or gaseous organic compounds containing only carbon and hydrogen atoms, the basis of almost all petroleum products.

**Indicators** – Measures or statistics that provide information about condition or direction.

**In-situ** – A well-based extraction technology used for extracting deep deposits of bitumen from oil sands without removing the soil and materials above it.

**Issue Discussion Forums** – Forums, which are open to all employees, designed to educate and inform attendees on both external and internal sustainable development issues of general interest.

**Issue Working Groups** – Internal, international, cross-functional groups of leaders and practitioners who meet periodically to share learning, understand and address issues. There are IWG's for topics above and cross-cutting issues such as Hydraulic Fracturing.

**Job Safety Analysis** – A safety tool for analyzing potential safety hazards for work tasks. Workers must conduct a job safety analysis for activities that have potential significant risk to personnel, the environment, equipment, or production stability. Before performing the task, hazards are identified, and either eliminated or controlled. The analysis reinforces workers' accountability for their own safety, as the person doing the work is involved with planning how a task will be performed.

**Land Footprint** – Consists of the area occupied on the land by an oil and gas activity or structure as well as any additional impacts to land, water or wildlife, resulting from the structure or activity.

**Land Management** – This strategy is focused on reducing the footprint of human activities. Land management promotes responsible use of public lands by influencing land-user behavior, improving stewardship and encouraging acceptance and adoption of integrated land management principles that reduce industrial footprint on the land as a way of doing business.

**Life Cycle Assessment (LCA)** – A tool that provides business units with a quantitative estimate of potential environmental and social impacts over the life of a project.

**Linear Footprint** – Relating to, or resulting from the influence of human beings on nature as well, has some degree of influence on pre-disturbance ecological function(s);

examples include roads, pipelines, seismic lines, delineation test-hole lines, survey lines and power lines.

**Methane** – The lightest and most abundant of the hydrocarbon gases and the principal component of natural gas. Methane is a colorless, odorless, non-poisonous and flammable gas that is stable under a wide range of pressure and temperature conditions in the absence of other compounds. Methane is created by anaerobic decomposition of organic compounds. Methane is a greenhouse gas and has a global warming potential of 21.

**Natural Gas** – A mixture of light hydrocarbons found naturally in the earth's crust, often in association with oil and coal. Methane is the main component.

**NoEs** – Networks of Excellence. Groups that support cross-business and cross-function communication relating to sustainable development implementation. These networks include over 900 practitioners and leaders who are working on social and environmental issues. Task work-groups within the NoE's collaborate to co-create guidance documents and tools, and share best practices.

**Non-potable Water** – Water that is unsafe or unpalatable to drink because it contains objectionable pollution, contamination, minerals, or infective agents.

**Oil Reservoir** – An oil reservoir is an underground pool of liquid consisting of hydrocarbons, Sulphur, oxygen, and nitrogen trapped within a geological formation and protected from evaporation by the overlying mineral strata.

**Oil Sands** – Naturally occurring mixtures of sand or clay, water and an extremely dense and viscous form of petroleum (bitumen). In Alberta the composition is 10-12 % bitumen, 80-85 % sand and clay and 4-6 % water.

**Overseas Security Advisory Council (OSAC)** – A federal advisory committee of public-sector entities and U.S. government. It is chartered by congress to promote security cooperation between American business and private-sector interests worldwide.

**Pads/Wellpads** – A flat site constructed for a drilling rig or operational facilities. Wellpads can be constructed of soil, rig mats, gravel, logs or other materials.

**Particulate Matter** – Particulate matter consists of airborne particles in solid or liquid form. It may be classified as primary or secondary, depending on the compounds and processes involved during its formation. Primary particulate matter is emitted at the emissions source in particle form; for example, the smokestack of an electrical power plant or a recently tilled field subject to wind erosion. Secondary particulate matter formation results from a series of chemical and physical reactions involving different precursor gases, such as Sulphur and nitrogen oxides, and ammonia reacting to form sulphate, nitrate and ammonium particulate matter. The size of particulate matter particles largely determines the extent of environmental and health damage caused.

**Produced Water** – Water generated from the production of oil and natural gas and generally considered to be saline.

**Reclamation** – The restoration of disturbed land to equivalent land-use capability. Reclamation involves restoring the soil profile, topography and vegetation on a disturbed site (e.g. an oil and gas wellsite) to a condition equivalent to that of the surrounding, undisturbed land.

**Remediation** – The reduction, removal or containment of contaminants in soil or water for the purpose of preventing deleterious effects on the environment.

**Shale Gas** – Natural gas stored in organic rich rocks. Shale gas is considered an unconventional source, as the gas may be attached to or absorbed onto organic matter.

**Stakeholders** – Those individuals or groups who could be impacted by our business or who have the ability to impact our business.

**Steam-assisted gravity drainage (SAGD)** – A process used to recover bitumen that is too deep to mine. A pair of horizontal wells is drilled from a central wellpad. In a plant nearby, steam generators powered by natural gas heat water and transform it into steam. The steam then travels through above-ground pipelines to the wells. It enters the ground via the steam injection (top) well. The steam heats the bitumen to a temperature at which it can flow by gravity into the producing (bottom) well. The steam injection and oil production happen continuously and simultaneously. The resulting bitumen and condensed steam

emulsion is then piped from the producing well to the plant, where it is separated and treated. The water is then recycled for generating new steam.

**Supplier Inclusion** – A proactive approach to providing suppliers access to business opportunities, fostering capacity building activities, and delivering innovation and value through long-term relationships that benefit ConocoPhillips, our suppliers, and the communities in which we operate.

**Surface Water** – Water collecting on the ground or in a stream, river, lake, wetland or ocean is called surface water.

**Sustainable Development Scorecard** – A consistent process to ensure proper evaluation and documentation of sustainability issues at key stages, measuring alignment with our sustainable development approach and requirements. The scorecard is initiated in the early stage of the project, when a single location has been identified, as the team begins planning design details. The scorecard uses a qualitative risk-based scoring system to assess whether our 9 sustainable development commitments have been properly addressed during planning. It enables decision-makers to assess a project's readiness to proceed to the next stage from a sustainable development perspective.

**Sustainable Development Standard** – The minimum requirements for ConocoPhillips Project Management Teams for applying Sustainable Development principles in the management of capital projects. The standard also refers to the ConocoPhillips HSE Due Diligence standard for further guidance on how to account for Sustainable Development issues in new business ventures, joint ventures, or real property transactions.

**Tundra** – A treeless zone between the ice cap and the tree line of North America and Eurasia, characterized by a short growing season and permanently frozen subsoil. Tundra refers both to the region and to the vegetation growing within it.

**Unconventional Oil and Gas** – Reserves that cannot be produced using conventional production methods. These include coal bed methane, oil sands, shale oil and shale gas.

**Venting** – The intentional controlled release of un-combusted gas.

**Volatile Organic Compounds** – Volatile organic compounds (VOCs) are carbon-containing gases and vapors such as gasoline fumes and solvents (excluding carbon dioxide, carbon monoxide, methane, and chlorofluorocarbons). Many individual VOCs are known or suspected of having direct toxic effects on humans, ranging from carcinogenesis to neurotoxicity. The more reactive VOCs combine with nitrogen oxides (NOx) in photochemical reactions in the atmosphere to form ground-level ozone, a major component of smog. VOCs are also a precursor pollutant to the secondary formation of fine particulate matter (PM2.5).

**Washington Department of Ecology's Exceptional Compliance Program (ECOPRO)** – A voluntary program for tankers and tank barges, recognizes operator commitment to environmental stewardship through compliance with standards exceeding regulatory requirements.

**Wastewater** – Leftover water containing oil, sand and other debris.

**Well** – A hole drilled into the earth to find or produce crude oil or natural gas.

**Wellhead** – The assembly of fittings and valve equipment used for producing a well and maintaining surface control of a well.