

# Glossary

**Afforestation:** Planting of new forests on lands that have not been recently forested.

**Anaerobic lagoon:** A liquid-based manure management system, characterized by waste residing in water to a depth of at least 6 feet for a period ranging between 30 and 200 days.

**Associated natural gas:** See “Associated-dissolved natural gas.”

**Associated-dissolved natural gas:** Natural gas that occurs in crude oil reservoirs either as free gas (associated) or as gas in solution with crude oil (dissolved).

**Baseline period:** The years 1987 through 1990 for which entity-level emissions may be reported.

**Biofuels:** Liquid fuels and blending components produced from biomass (plant) feedstocks, used primarily for transportation.

**Biogas:** Gas produced from the anaerobic decomposition of organic materials in a landfill.

**Biomass:** Organic nonfossil material of biological origin constituting a renewable energy source.

**British thermal unit:** The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

**Carbon dioxide equivalent:** The amount of carbon dioxide by weight emitted into the atmosphere that would produce the same estimated radiative forcing as a given weight of another radiatively active gas. Carbon dioxide equivalents are computed by multiplying the weight of the gas being measured (for example, methane) by its estimated global warming potential (which is 23 for methane). “Carbon equivalent units” are defined as carbon dioxide equivalents multiplied by the carbon content of carbon dioxide (i.e., 12/44).

**Carbon sequestration:** The fixation of atmospheric carbon dioxide in a carbon sink through biological or physical processes.

**Carbon sink:** A reservoir that absorbs or takes up released carbon from another part of the carbon cycle. The four sinks, which are regions of the Earth within which carbon behaves in a systematic manner, are the atmosphere, terrestrial biosphere (usually including freshwater systems), oceans, and sediments (including fossil fuels).

**Chlorofluorocarbon (CFC):** Any of various compounds consisting of carbon, hydrogen, chlorine, and fluorine used as refrigerants. CFCs are now thought to be harmful to the Earth’s atmosphere.

**Climate:** The average course or condition of the weather over a period of years, as exhibited by temperature, humidity, wind velocity, and precipitation. The classical period is 30 years, as defined by the World Meteorological Organization (WMO).

**Climate change:** A term used to refer to all forms of climatic inconsistency in general and, in particular, significant change from one prevailing climatic condition to another. In some cases, “climate change” has been used synonymously with the term “global warming”; however, scientists tend to use the term in its general sense, including natural changes in climate and climatic cooling.

**Cogeneration:** The production of electrical energy and another form of useful energy (such as heat or steam) through the sequential use of energy.

**Commercial scale:** Application of a demonstrated technology at a cost-effective scale.

**Commitment:** An expressed intention to undertake an action or actions that will reduce greenhouse gas emissions, increase carbon sequestration, or achieve a stated emissions goal.

**Conversion factor:** A number that translates units of one measurement system into corresponding values of another measurement system. For specific conversion factors, see EIA data products.

**Deforestation:** The net removal of trees from forested land.

**Emission reduction:** A decrease in annual greenhouse gas emissions.

**Emissions:** Anthropogenic releases of gases to the atmosphere. In the context of global climate change, they consist of radiatively important greenhouse gases (e.g., the release of carbon dioxide during fuel combustion).

**Emissions coefficient:** A unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., pounds of carbon dioxide emissions per Btu of fossil fuel consumed).

**Emissions, direct:** Emissions from sources owned (wholly or in part) or leased by an entity.

**Emissions, fugitive:** Unintended leaks of gas from the processing, transmission, and/or transportation of fossil fuels.

**Emissions, indirect:** Emissions from sources not owned or leased by an entity that occur, wholly or in part, as a result of its activities.

**Energy conservation:** Activities that reduce end-use demand for energy by reducing the service demanded.

**Entity:** For the purposes of the Voluntary Reporting of Greenhouse Gases Program, an individual or organization that is a legal U.S. person (e.g., a U.S. citizen, resident alien, company, organization, or group incorporated under or recognized by U.S. law; or a Federal, State, or local government agency).

**Entity boundary:** Conceptually, a line drawn to encompass the emissions sources and sinks to be evaluated in an entity-level report. An entity boundary should include all the emissions sources and sinks owned (wholly or in part) or leased by the entity and, to the extent possible, other emissions sources and sinks affected by the entity's activities.

**Entity-level reporting:** Reporting of greenhouse gas emissions, emission reductions, and carbon sequestration for an entire entity. See also "Project-level reporting."

**Estimation method:** The techniques, including key assumptions and data sources, used by the reporter to derive the reported emissions, emission reductions, or sequestration.

**Foreign activities:** All actions outside the United States, its territories, and its trusts.

**Forest preservation:** Protecting existing forests from harvest and, in some cases, conversion to another land use as a means of mitigating increases in atmospheric carbon.

**Fossil fuel:** An energy source formed in the Earth's crust from decayed organic material. The common fossil fuels are petroleum, coal, and natural gas.

**Fuel cycle:** The entire set of sequential processes or stages involved in the utilization of fuel, including extraction, transformation, transportation, and combustion. Emissions generally occur at each stage of the fuel cycle.

**Fuel switching:** The substitution of one type of fuel for another. The fuel substitution may be either temporary (as in the case of a power plant that temporarily switches from coal to natural gas) or permanent (as in the case of a fleet operator who replaces gasoline-powered automobiles with electric cars).

**Fugitive emissions:** See "Emissions, fugitive."

**Global warming potential (GWP):** An index used to compare the relative radiative forcing of different gases without directly calculating changes in their atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emission of 1 kilogram of a greenhouse gas to that from the emission of 1 kilogram of carbon dioxide over a fixed period of time, such as 100 years.

**Gob:** A zone of rubble created when the roof of a coal mine collapses behind the mining operations.

**Greenhouse effect:** The result of water vapor, carbon dioxide, and other atmospheric gases trapping radiant (infrared) energy, thereby keeping the Earth's surface warmer than it would otherwise be. Greenhouse gases within the lower levels of the atmosphere trap infrared radiation that would otherwise escape into space, and subsequent re-radiation of some of the energy back to the Earth maintains higher surface temperatures than would occur if the gases were absent. See "Greenhouse gases."

**Greenhouse gases:** Those gases, such as water vapor, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>), that are transparent to solar (short-wave) radiation but opaque to long-wave (infrared) radiation, thus preventing long-wave radiant energy from leaving Earth's atmosphere. The net effect is a trapping of absorbed radiation and a tendency to warm the planet's surface.

**Halogenated substance:** A volatile compound containing halogens, such as chlorine, fluorine, or bromine.

**Horizon year:** The year in which a commitment to reduce greenhouse gas emissions or increase sequestration (reported on Schedule IV) is expected to be met.

**Intergovernmental Panel on Climate Change (IPCC):** A panel established jointly in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess scientific information related to climate change and to formulate realistic response strategies.

**Life cycle:** The progression of a product through its service life. For most products, emissions and energy-consuming characteristics will be altered as they age.

**Longwall mining:** An automated form of underground coal mining characterized by high recovery and extraction rates, feasible only in relatively flat-lying, thick, and uniform coalbeds. A high-powered cutting machine is passed across the exposed face of coal, shearing away broken coal, which is continuously hauled away by a floor-level conveyor system. Longwall mining extracts all machine-minable coal between the floor and ceiling

within a contiguous block of coal, known as a panel, leaving no support pillars within the panel area. Panel dimensions vary over time and with mining conditions but currently average about 900 feet wide (coal face width) and more than 8,000 feet long (the minable extent of the panel, measured in direction of mining). Longwall mining is done under movable roof supports that are advanced as the bed is cut. The roof in the mined-out area is allowed to fall as the mining advances.

**Manure management:** The method used to dispose of the solid waste produced by livestock and poultry.

**Modified forest management:** The modification of the management regimes of existing forests to increase their carbon capture rates.

**Municipal solid waste:** Residential solid waste and some nonhazardous commercial, institutional, and industrial wastes.

**Ozone:** A molecule made up of three atoms of oxygen. Ozone occurs naturally in the stratosphere and provides a protective layer shielding the Earth from harmful ultraviolet radiation. In the troposphere, it is a chemical oxidant, a greenhouse gas, and a major component of photochemical smog.

**Photosynthesis:** The manufacture of carbohydrates and oxygen from carbon dioxide and water in the presence of chlorophyll, with sunlight as the energy source. Carbon is sequestered and oxygen and water are released in the process.

**Pilot project:** A small-scale trial designed to test or demonstrate the efficiency or efficacy of a project.

**Project:** An action undertaken to reduce greenhouse gas emissions or sequester carbon.

**Project boundary:** Conceptually, a line drawn to encompass the emissions sources and sinks affected by a project. A project boundary should include all the significant and quantifiable effects of the project.

**Project ID code:** A unique code assigned by the Energy Information Administration to a reported project for tracking purposes.

**Project-level reporting:** Reporting on emission reductions or carbon sequestration achieved as a result of a specific action or group of actions.

**Reconductoring:** Replacement of existing conductors with large-diameter conductors to reduce line losses. Conductors (including feeders and transmission lines)

are a major source of transmission and distribution system losses. In general, the smaller the diameter of the conductor, the greater its resistance to the flow of electric current, and the greater the consequent line losses.

**Reference case:** The emissions level to which current actual emissions levels are compared when emission reductions are calculated.

**Reference case, basic:** A reference case using actual historical emissions or sequestration values.

**Reference case, modified:** A reference case using projected emissions or sequestration values, representing the emissions level that would have occurred in the absence of reduction or sequestration efforts.

**Reforestation:** Replanting of forests on lands that have recently been harvested or otherwise cleared of trees.

**Reporter:** An entity completing either Form EIA-1605 or Form EIA-1605EZ and submitting it to the Voluntary Reporting of Greenhouse Gases Program. See "Entity."

**Room-and-pillar mining:** The most common method of underground mining in which the mine roof is supported mainly by coal pillars left at regular intervals. Rooms are places where the coal is mined; pillars are areas of coal left between the rooms. Room-and-pillar mining is done by either conventional or continuous mining.

**Sequestered carbon:** Carbon that is removed from the atmosphere and retained in a carbon sink (such as a growing tree) or in soil.

**Sequestration:** See "Carbon sequestration."

**Sink:** See "Carbon sink."

**Third-party reporter:** An authorized party that submits a report on behalf of two or more entities that have engaged in emissions-reducing or sequestration-increasing activities. Possible third-party reporters include trade associations reporting on behalf of members that have undertaken reduction projects.

**Urban forestry:** The planting of trees individually or in small groups in urban or suburban settings.

**Vhar metering:** Phase shifters on watt-hour meters that measure reactive volt ampere hours or varhours.

**Watt (W):** The unit of electrical power equal to 1 ampere under a pressure of 1 volt. A watt is equal to 1/746 horsepower.



Appendix A

# **The Voluntary Reporting Program: A Developmental Overview**

