

Glossary

A

Adaptation: Adjustment in natural or human systems to a new or changing environment. Adaptation refers to adjustments in natural or human systems, intended to reduce vulnerability to actual or anticipated climate change and variability or exploit beneficial opportunities.

Acre: A unit of land equal to 43,560 square feet.

Alternative Energy: Energy derived from nontraditional sources (e.g., compressed natural gas, solar, hydroelectric, wind)

Atmosphere: The gaseous envelope surrounding the Earth. The dry atmosphere consists almost entirely of nitrogen (78.1% volume mixing ratio) and oxygen (20.9% volume mixing ratio), together with a number of trace gases, such as argon (0.93% volume mixing ratio), helium and radiatively active greenhouse gases such as carbon dioxide (0.035% volume mixing ratio) and ozone. In addition, the atmosphere contains the greenhouse gas water vapor, whose amounts are highly variable but typically around 1% volume mixing ratio. The atmosphere also contains clouds and aerosols.

B

Baseline: A projected level of future emissions against which reductions by project activities might be determined, or the emissions that would occur without policy intervention.

Best Available Control Measure (BACM): A term used to describe the “best” measures (according to U.S. EPA guidance) for controlling small or dispersed sources of particulate matter and other emissions from sources such as roadway dust, woodstoves, and open burning.

Best Available Control Technology (BACT): Under the South Coast Air Quality Management District (SCAQMD) rules, for example, BACT is defined as the most stringent emissions control which for a given air emission source has been 1) achieved in practice; 2) is identified in a State Implementation Plan; or 3) has been found by the SCAQMD to be technologically achievable and cost-effective.

Biofuel: A fuel produced from organic matter or combustible oils produced by plants. Examples of biofuel include alcohol, black liquor from the paper-manufacturing process, wood, and soybean oil.

Biomass: Total dry weight of all living organisms that can be supported at each trophic level in a food chain. Also, materials that are biological in origin, including organic material (both living and dead) from above and below ground, for example, trees, crops, grasses, tree litter, roots, and animals and animal waste.

C

Carbon Dioxide (CO₂): A naturally occurring gas, also a by-product of burning fossil fuels from fossil carbon deposits, such as oil, gas and coal, of burning biomass and of land use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth’s radiative balance. It is the reference gas against which other greenhouse gases are measured and therefore has a Global Warming Potential of 1.

Carbon Dioxide Equivalent (CO₂EMT): A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential. The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP.

Carbon Monoxide (CO): A colorless, odorless, toxic gas produced by incomplete combustion of carbon in fossil fuels.

Carbon Sequestration: The capture and permanent storage of carbon dioxide.

Carbon Sinks: Natural or man-made systems that absorb carbon dioxide from the atmosphere and store them. Trees, plants and the oceans all absorb CO₂ and, therefore, are carbon sinks.

Climate: Climate in a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from

months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system.

Climate Change: Any long-term significant change in the weather patterns of an area, which can occur naturally or by changes people have made to the land or atmosphere.

Composting: The process by which discarded organic materials -- including (for example) tree trimmings, grass clippings, yard waste, agricultural wastes, leaf debris and sewage sludge – are converted to usable products through controlled biological decomposition.

D

Density: The average number of people, families, or housing units on one unit of land. Density is also expressed as dwelling units per acre.

District Improvement Financing: Economic tool that promotes redevelopment by channeling dollars into targeted redevelopment districts.

Distributed Generation : Any small scale electric generation that is located at or near the point of end use.

E

Ecological Footprint: The impact of humans on ecosystems created by their use of land, water, and other natural resources. Ecological footprint used as a complex sustainability indicator that answers the question: How much of the Earth's resources does your lifestyle require?

Ecosystem: The species and natural communities of a specific location interacting with one another and with the physical environment.

Emissions: Unwanted substances released by human activity into air or water.

Energy Efficiency: Using less energy to achieve the same outcome. For example, better insulation would enable a home to stay warm utilizing less energy.

Environmental Protection Agency (EPA): The federal body charged with responsibility for natural resource protection and oversight of the release of toxins and other threats to the environment.

F

Fossil Fuels: Carbon-based fuels from fossil hydrocarbon deposits, including coal, peat, oil, and natural gas.

Fuel Cells: Electro-chemical devices (similar to batteries) that use a continuous supply of hydrogen to produce electricity.

G

Global Warming: Global warming refers to the gradual increase, observed or projected, in global average surface temperature, as one of the consequences of radiative forcing caused by anthropogenic emissions.

Global Warming Potential (GWP): The cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas. The GWP-weighted emissions of direct greenhouse gases in the U.S. Inventory are presented in terms of equivalent emissions of carbon dioxide (CO₂), using units of teragrams of carbon dioxide equivalents (Tg CO₂E_{MT}).

Conversion: Tg = 109 kg = 106 metric tons = 1 million metric tons

The molecular weight of carbon is 12, and the molecular weight of oxygen is 16; therefore, the molecular weight of CO₂ is 44 (i.e., 12+[16 x 2]), as compared to 12 for carbon alone. Thus, carbon comprises 12/44ths of carbon dioxide by weight.

Gray Water: Non-industrial wastewater generated from domestic processes such as washing dishes and laundry.

Green Building or Green Design: Building design that yields environmental benefits, such as savings in energy, building materials, and water consumption, or reduced waste generation.

Greenfield: Previously undeveloped land.

Greenhouse Gas: Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include, but are not limited to, water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), ozone (O₃), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Groundwater: Water below the land surface.

H

Hydrocarbons: Substances containing only hydrogen and carbon. Fossil fuels are made up of hydrocarbons.

Hydropower: The force of flowing water moving downstream creates energy that can be harnessed and turned into electricity. This is called hydroelectric power or hydropower. Hydropower is produced for mechanical power or electricity generation. Often stored and controlled by dams, hydropower is created when the kinetic energy of moving water (rivers, waterfalls) is converted by turbines and generators into electricity, which is then fed into the electrical grid to be accessed by homes, businesses, and industry.

I

Impact Fees: Costs imposed on new development to fund public facility improvements required by new development and ease fiscal burdens on localities.

Impervious Surface: Ground surface that cannot be penetrated by water. Includes paved and compacted surfaces, as well as those covered by buildings.

Infill Development: Development projects that use vacant or underutilized land in previously developed areas for buildings, parking, and other uses.

Infrastructure: Water and sewer lines, roads, urban transit lines, schools and other public facilities needed to support developed areas.

Intermodal: Those issues or activities which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes. Also known as “multimodal.”

L

Landfill Gas: Methane gas that forms in landfills from the decay of organic materials. The gas can be collected and used for power generation.

Land Use: The manner in which a parcel of land is used or occupied.

LEED: Leadership in Energy and Environmental Design Green Building Rating System is a nationally accepted benchmark for the design, construction, and operation of high performance green buildings. Administered by the U.S. Green Building Council LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water

savings, energy efficiency, materials selection, and indoor environmental quality.

Light-emitting Diode (LED): This very energy efficient lighting technology uses 80 to 90% less energy than conventional lights.

Live-Work Unit: An integrated housing unit and working space, occupied and utilized by a single household in a structure that has been designed or structurally modified to accommodate joint residential occupancy and work activity, and which includes:

1. Complete kitchen space and sanitary facilities in compliance with the Building Code; and
2. Working space reserved for and regularly used by one or more occupants of the unit.

In a live-work unit, the “work” component is secondary to its residential use, and may include only commercial activities and pursuits that are compatible with the character of a quiet residential environment.

Low Impact Development (LID): An approach to environmentally friendly land use planning. It includes a suite of landscaping and design techniques that attempt to maintain the natural, pre-developed ability of a site to manage rainfall. LID techniques capture water on site, filter it through vegetation, and let it soak into the ground where it can recharge the local water table rather than being lost as surface runoff. An important LID principle includes the idea that stormwater is not merely a waste product to be disposed of, but rather that rainwater is a resource.

M

Methane (CH₄): A hydrocarbon that is a greenhouse gas with a global warming potential most recently estimated at 23 times that of carbon dioxide (CO₂). Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Metric Tonne: Common international measurement for the quantity of greenhouse gas emissions. A metric ton is equal to 2205 lbs or 1.1 short tons.

Mixed Use Development: Development that is created in response to patterns of separate uses that are typical in suburban areas necessitating reliance on cars. Mixed use developments include residential, commercial, and business accommodations in one area.

N

Nitrogen oxides (NO_x): Gases consisting of one molecule of nitrogen and varying numbers of oxygen molecules. Nitrogen oxides are produced in the emissions of vehicle exhausts and from power stations. In the atmosphere, nitrogen oxides can contribute to formation of photochemical ozone (smog), can impair visibility, and have health consequences; they are thus considered pollutants.

Nitrous Oxide (N₂O): A powerful greenhouse gas with a global warming potential of 296 times that of carbon dioxide (CO₂). Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

O

Open Space: Used to describe undeveloped land or land that is used for recreation. Farmland as well as all natural habitats (forests, fields, wetlands etc.) is lumped in this category.

Ozone (O₃): A molecule of three oxygen atoms. A colorless gas formed by a complex series of chemical and photochemical reaction of reactive organic gases, principally hydrocarbons, with the oxides of nitrogen, which is harmful to the public health, the biota, and some materials.

P

Particulate matter (PM): Very small pieces of solid or liquid matter such as particles of soot, dust, fumes, mists or aerosols. The physical characteristics of particles, and how they combine with other particles, are part of the feedback mechanisms of the atmosphere.

Parts per Million (ppm): Number of parts of a chemical found in one billion parts of a particular gas, liquid, or solid mixture.

Parts per Billion (ppb): Number of parts of a chemical found in one million parts of a particular gas, liquid, or solid.

Permeability: The measurement of a material's ability to allow the passage of moisture. For landfill applications, it is usually expressed in centimeters per second.

Photovoltaic: Literally, "light" (photo) and "electricity" (voltaic). The class of equipment used to generate electricity directly from sunlight.

Recharge: Water that infiltrates into the ground, usually from above, that replenishes groundwater reserves, provides soil moisture, and affords evapotranspiration.

Recycling: The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new products. Does not include the conversion of waste into energy.

Renewable Energy: Generation of power from naturally replenished resources such as sunlight, wind, and tides. Renewable energy technologies include solar power, wind power, hydroelectric power, geothermal, and biomass.

Renewable Energy Certificate (REC): A tradable certificate representing the generation attributes of energy derived from a qualified renewable energy source. In the U.S., formal markets for RECs are established in New England and Texas, and are developing elsewhere. Informal and voluntary markets are active or emerging in several other U.S. regions. RECs are also called renewable energy certificates, tradable renewable certificates (TRCs), "green tags", and other names.

S

Solar Power (or Energy): Use of sunlight, or solar energy, to heat and light buildings, generate electricity (using solar photovoltaic systems - PV cells/panels), heat hot water, and for a variety of commercial and industrial uses.

Sprawl: Development patterns where rural land is converted to urban/suburban uses more quickly than needed to house new residents and support new businesses, and people become more dependent on automobiles. Sprawl defines patterns of urban growth that includes large acreage of low-density residential development, rigid separation between residential and commercial uses, residential and commercial development in rural areas away from urban centers, minimal support for non-motorized transportation methods, and a lack of integrated transportation and land use planning.

Streetscape: The space between the buildings on either side of a street that defines its character. The elements of a streetscape include: building frontage/façade; landscaping (trees, yards, bushes, plantings, etc.); sidewalks; street paving; street furniture (benches, kiosks, trash receptacles, fountains, etc.); signs; awnings; and street lighting.

Sulfur oxides (SO_x): The group of compounds formed during combustion or thereafter in the atmosphere of sulfur compounds in the fuel, each having various levels of oxidation, ranging from two oxygen atoms for each sulfur atom to four oxygen atoms.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

T

Tax Increment Financing (TIF): A program designed to leverage private investment for economic development projects in a manner that enhances the benefits accrued to the public interest.

Transit-Oriented Development (TOD): The development of housing, commercial space, services, and job opportunities in close proximity to public transportation. Reduces dependency on cars and time spent in traffic, which protects the environment and can ease traffic congestion, as well as increasing opportunity by linking residents to jobs and services.

Transportation demand management strategies (TDM): TDM is a general term for strategies that result in more efficient use of transportation resources, including incentives to reduce driving, use alternative options, and improve transit.

W

Weather: Atmospheric condition at any given time or place. It is measured in terms of such things as wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation. In most places, weather can change from hour-to-hour, day-to-day, and season-to-season. Climate in a narrow sense is usually defined as the “average weather”, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period is 30 years, as defined by the World Meteorological Organization (WMO). These quantities are most often surface variables such as temperature, precipitation, and wind. Climate in a wider sense is the state, including a statistical description, of the climate system. A simple way of remembering the difference is that climate is what you expect (e.g. cold winters) and ‘weather’ is what you get (e.g. a blizzard).

Wind Power: Harnessing the wind to generate electricity. Wind turbines produce electricity when wind turns blades that are connected to a shaft that drives a generator.

Wind Turbine: A machine that converts the kinetic energy in wind into mechanical energy. If the resulting energy is used directly by machinery, such as a pump, the machine is usually called a windmill. If the energy is converted to electricity, the machine is called a wind generator.

Work/Live Unit: An integrated housing unit and working space, occupied and utilized by a single household in a structure that has been designed or structurally modified to accommodate joint residential occupancy and work activity, and which includes:

1. Complete kitchen space and sanitary facilities in compliance with the Building Code; and
2. Working space reserved for and regularly used by one or more occupants of the unit.

In a work-live unit, the work component is the primary use, to which the residential component is secondary.

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