

GLOSSARY

GLOSSARY

AAQS (Ambient Air Quality Standards): Health and welfare based standards for clean outdoor air that identify the maximum acceptable average concentrations of air pollutants during a specified period of time. (See NAAQS)

Acute Health Effect: An adverse health effect that occurs over a relatively short period of time (e.g., minutes or hours).

Aerosol: Particles of solid or liquid matter that can remain suspended in air for long periods of time because of extremely small size and light weight.

Air Pollutants: Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects on humans, animals, vegetation, and/or materials.

Air Quality Simulation Model: A computer program that simulates the transport, dispersion, and transformation of compounds emitted into the air and can project the relationship between emissions and air quality.

Air Toxics: A generic term referring to a harmful chemical or group of chemicals in the air. Typically, substances that are especially harmful to health, such as those considered under EPA's hazardous air pollutant program or California's AB 1807 toxic air contaminant program, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

Airborne Toxic Control Measure (ATCM): A type of control measure, adopted by the ARB (Health and Safety Code Section 39666 et seq.), which reduces emissions of toxic air contaminants from nonvehicular sources.

Alternative Fuels: Fuels such as methanol, ethanol, hydrogen, natural gas, and liquid propane gas that are cleaner burning and help to meet ARB's mobile and stationary emission standards.

Ambient Air: The air occurring at a particular time and place outside of structures. Often used interchangeably with "outdoor" air.

APCD (Air Pollution Control District): A county agency with authority to regulate stationary, indirect, and area sources of air pollution (e.g., power plants, highway construction, and housing developments) within a given county, and governed by a district air pollution control board composed of the elected county supervisors. (Compare AQMD.)

AQMD (Air Quality Management District): A group or portions of counties, or an individual county specified in law with authority to regulate stationary, indirect, and area sources of air pollution within the region and governed by a regional air

pollution control board comprised mostly of elected officials from within the region. (Compare APCD.)

AQMP (Air Quality Management Plan): A Plan prepared by an APCD/AQMD, for a county or region designated as a nonattainment area, for the purpose of bringing the area into compliance with the requirements of the national and/or California Ambient Air Quality Standards. AQMPs are incorporated into the State Implementation Plan (SIP).

ARB (California Air Resources Board): The State's lead air quality agency, consisting of a nine-member Governor-appointed board. It is responsible for attainment and maintenance of the State and federal air quality standards, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

Area-wide Sources (also known as "area" sources): Stationary sources of pollution (e.g., water heaters, gas furnaces, fireplaces, and wood stoves) that are typically associated with homes and non-industrial sources. The CCAA requires districts to include area sources in the development and implementation of the AQMPs.

Atmosphere: The gaseous mass or envelope surrounding the earth.

Attainment Area: A geographic area which is in compliance with the National and/or California Ambient Air Quality Standards (NAAQS OR CAAQS).

Attainment Plan: In general, a plan that details the emission reducing control measures and their implementation schedule necessary to attain air quality standards. In particular, the federal Clean Air Act requires attainment plans for nonattainment areas; these plans must meet several requirements, including requirements related to enforceability and adoption deadlines.

BACT (Best Available Control Technology): The most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. BACT is a requirement of NSR (New Source Review) and PSD (Prevention of Significant Deterioration). BACT as used in federal law under PSD is defined as an emission limitation based on the maximum degree of emissions reductions allowable taking into account energy, environmental & economic impacts and other costs. [(CAA Section 169(3)]. The term BACT as used in state law means an emission limitation that will achieve the lowest achievable emission rates, which means the most stringent of either the most stringent emission limits contained in the SIP for the class or category of source, (unless it is demonstrated that one limitation is not achievable) or the most stringent emission limit achieved in practice by that class in category of source. "BACT" under state law is more stringent than federal BACT and is equivalent to federal LAER (lowest achievable emission rate) which applies to NSR permit actions.

BAR (Bureau of Automotive Repair): An agency of the California Department of Consumer Affairs that manages the implementation of the motor vehicle Inspection and Maintenance Program.

CAA (Federal Clean Air Act): A federal law passed in 1970 and amended in 1977 and 1990 which forms the basis for the national air pollution control effort. Basic elements of the act include national ambient air quality standards for major air pollutants, air toxics standards, acid rain control measures, and enforcement provisions.

CAAQS (California Ambient Air Quality Standards): Standards set by the State of California for the maximum levels of air pollutants which can exist in the outdoor air without unacceptable effects on human health or the public welfare. These are more stringent than NAAQS.

CCAA (California Clean Air Act): A California law passed in 1988 which provides the basis for air quality planning and regulation independent of federal regulations. A major element of the Act is the requirement that local APCDs/AQMDs in violation of state ambient air quality standards must prepare attainment plans which identify air quality problems, causes, trends, and actions to be taken to attain and maintain California's air quality standards by the earliest practicable date.

CEQA (California Environmental Quality Act): A California law which sets forth a process for public agencies to make informed decisions on discretionary project approvals. The process aids decision makers to determine whether any environmental impacts are associated with a proposed project. It requires environmental impacts associated with a proposed project to be identified, disclosed, and mitigated to the maximum extent feasible.

CFCs (Chlorofluorocarbons): Any of a number of substances consisting of chlorine, fluorine, and carbon. CFCs are used for refrigeration, foam packaging, solvents, and propellants. They have been found to cause depletion of the atmosphere's ozone layer.

Chronic Health Effect: An adverse health effect which occurs over a relatively long period of time (e.g., months or years).

CMB (Chemical Mass Balance): This receptor model is used for PM₁₀ source apportionment, matching the measured chemical components of the PM₁₀ samples with known chemical profiles, or signatures, of individual sources of PM₁₀ particles. The 1995 PTEP enhanced PM monitoring program results have been used to update the 1986 analysis used in previous AQMPs.

CO (Carbon Monoxide): A colorless, odorless gas resulting from the incomplete combustion of fossil fuels. Over 80% of the CO emitted in urban areas is contributed by motor vehicles. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. CO is a criteria air pollutant.

Conformity: Conformity is a process mandated in the federal Clean Air Act to insure that federal actions do not impede attainment of the federal health standards. General conformity sets out a process that requires federal agencies to demonstrate that their actions are air quality neutral or beneficial. Transportation conformity sets out a process that requires transportation projects that receive federal funding, approvals or permits to demonstrate that their actions are air quality neutral or beneficial.

Congestion Management Program: A state mandated program (Government Code Section 65089a) that requires each county to prepare a plan to relieve congestion and reduce air pollution.

Consumer Products: Products such as detergents, cleaning compounds, polishes, lawn and garden products, personal care products, and automotive specialty products which are part of our everyday lives and, through consumer use, may produce air emissions which contribute to air pollution.

Contingency Measure: Contingency measures are statute-required back-up control measures to be implemented in the event of specific conditions. These conditions can include failure to meet interim milestone emission reduction targets or failure to attain the standard by the statutory attainment date. Both state and federal Clean Air Acts require that District plans include contingency measures.

Electric Motor Vehicle: A motor vehicle which uses a battery-powered electric motor as the basis of its operation. Such vehicles emit virtually no air pollutants. Hybrid electric motor vehicles may operate using both electric and gasoline powered motors. Emissions from hybrid electric motor vehicles are also substantially lower than conventionally powered motor vehicles.

EMFAC: The EMISSION FACTOR model used by ARB to calculate on-road mobile vehicle emissions. This model is part of ARB's overall on-road mobile source Mobile Vehicle Emission Inventory (MVEI) model. The 1997 AQMP is based on the latest version of EMFAC and MVEI, which is 7G. (The 1994 AQMP was based on the previous version, EMFAC7F.)

Emission Inventory: An estimate of the amount of pollutants emitted from mobile and stationary sources into the atmosphere over a specific period such as a day or a year.

Emission Offset (also known as an emission trade-off): A rule-making concept whereby approval of a new or modified stationary source of air pollution is conditional on the reduction of emissions from other existing stationary sources of air pollution. These reductions are required in addition to reductions required by BACT.

Emission Standard: The maximum amount of a pollutant that is allowed to be discharged from a polluting source such as an automobile or smoke stack.

EPA (Environmental Protection Agency): The United States agency charged with setting policy and guidelines, and carrying out legal mandates for the protection of national interests in environmental resources.

FIP (Federal Implementation Plan): In the absence of an approved State Implementation Plan (SIP), a plan prepared by the EPA which provides measures that nonattainment areas must take to meet the requirements of the Federal Clean Air Act.

Fugitive Dust: Dust particles which are introduced into the air through certain activities such as soil cultivation, off-road vehicles, or any vehicles operating on open fields or dirt roadways.

Growth Management Plan: A plan for a given geographical region containing demographic projections (i.e., housing units, employment, and population) through some specified point in time, and which provides recommendations for local governments to better manage growth and reduce projected environmental impacts.

Hydrocarbon: Any of a large number of compounds containing various combinations of hydrogen and carbon atoms. They may be emitted into the air as a result of fossil fuel combustion, fuel volatilization, and solvent use, and are a major contributor to smog. (Also see VOC.)

Indirect Source: Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages.

Indirect Source Control Program: Rules, regulations, local ordinances and land use controls, and other regulatory strategies of air pollution control districts or local governments used to control or reduce emissions associated with new and existing indirect sources.

Inspection and Maintenance Program: A motor vehicle inspection program implemented by the BAR. It is designed to identify vehicles in need of maintenance and to assure the effectiveness of their emission control systems on a biennial basis. Enacted in 1979 and strengthened in 1990. (Also known as the "Smog Check" program.)

LEV (Low Emission Vehicle): A vehicle which is certified to meet the ARB 1994 emission standards for low emission vehicles.

Maintenance Plan: In general, a plan that details the actions necessary to maintain air quality standards. In particular, the federal Clean Air Act requires maintenance plans for areas that have been redesignated as attainment areas.

Mobile Sources: Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes. (Contrast with stationary sources.)

NAAQS (National Ambient Air Quality Standards): Standards set by the federal EPA for the maximum levels of air pollutants which can exist in the outdoor air without unacceptable effects on human health or the public welfare.

Nitrogen Oxides (Oxides of Nitrogen, NO_x): A general term pertaining to compounds of nitric acid (NO), nitrogen dioxide (NO₂), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO₂ is a criteria air pollutant, and may result in numerous adverse health effects; it absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

NonAttainment Area: A geographic area identified by the EPA and/or ARB as not meeting either NAAQS or CAAQS standards for a given pollutant.

NSR (New Source Review): A program used in development of permits for new or modified industrial facilities which are in a nonattainment area, and which emit nonattainment criteria air pollutants. The two major requirements of NSR are Best Available Control Technology and Emission Offset.

Ozone: A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy. Ozone exists in the upper atmosphere ozone layer as well as at the earth's surface. Ozone at the earth's surface causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

Ozone Precursors: Chemicals such as hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog.

Permit: Written authorization from a government agency (e.g., an air quality management district) that allows for the construction and/or operation of an emissions generating facility or its equipment within certain specified limits.

PIC (Particle-in-Cell) Model: An air quality simulation model that is used to apportion sulfate and nitrate PM₁₀ concentrations to their precursor emissions sources. The PIC model uses spatially and temporally resolved sources of NO_x and SO_x emissions, with meteorological, physical, and simplified chemical processes, to calculate the contributions from various emission source categories.

PM (Particulate Matter): Solid or liquid particles of soot, dust, smoke, fumes, and aerosols.

PM₁₀ (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the air sacs in the lungs where they may be deposited, resulting in adverse health effects. PM₁₀ also causes visibility reduction and is a criteria air pollutant.

PM_{2.5} (Particulate Matter less than 2.5 microns): A major air pollutant consisting of tiny solid or liquid particles, generally soot and aerosols. The size of the particles (2.5 microns or smaller, about 0.0001 inches or less) allows them to easily enter the air sacs deep in the lungs where they may cause adverse health effects, as noted in

several recent studies. PM_{2.5} also causes visibility reduction, but is not considered a criteria air pollutant at this time.

PSD (Prevention of Significant Deterioration): A program used in development of permits for new or modified industrial facilities in an area that is already in attainment. The intent is to prevent an attainment area from becoming a non-attainment area. This program, like NSR, can require BACT and, if an AAQS is projected to be exceeded, Emission Offsets.

PTEP (PM₁₀ Technical Enhancement Program): A cooperative study to improve the technical knowledge base for PM₁₀, particularly ambient PM measurements (mass and composition), improved emission inventory estimates, and improved PM modeling tools.

Public Workshop: A workshop held by a public agency for the purpose of informing the public and obtaining its input on the development of a regulatory action or control measure by that agency.

RME (Regional Mobility Element): The Regional Mobility Element (RME) is the principal transportation policy, strategy, and objective statement of the Southern California Association of Governments, proposing a comprehensive strategy for achieving mobility and related air quality mandates. The impacts of RME are included in the AQMP.

ROG (Reactive Organic Gas): A reactive chemical gas, composed of hydrocarbons, that may contribute to the formation of smog. Also sometimes referred to as Non-Methane Organic Compounds (NMOCs). (Also see VOC.)

SIP (State Implementation Plan): A document prepared by each state describing existing air quality conditions and measures which will be taken to attain and maintain national ambient air quality standards (see AQMP).

Smog Check Program: (See Inspection and Maintenance Program.)

Smog: A combination of smoke, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

Smoke: A form of air pollution consisting primarily of particulate matter (i.e., particles). Other components of smoke include gaseous air pollutants such as hydrocarbons, oxides of nitrogen, and carbon monoxide. Sources of smoke may include fossil fuel combustion, agricultural burning, and other combustion processes.

SO₂ (Sulfur Dioxide): A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major sources of SO₂. SO₂ and other sulfur oxides contribute to the problem of acid deposition. SO₂ is a criteria pollutant.

Stationary Sources: Non-mobile sources such as power plants, refineries, and manufacturing facilities which emit air pollutants. (Contrast with mobile sources.)

Toxic Air Contaminant: An air pollutant, identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code Section 39650 et seq.) than pollutants subject to CAAQS. Health effects due to TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects.

Transportation Control Measure (TCM): Any control measure to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. TCMs can include encouraging the use of carpools and mass transit.

UAM (Urban Airshed Model): The three-dimensional photochemical grid model used to simulate ozone formation. Used to project episodic ozone concentrations. (See also air quality simulation model.)

UAM/Aero (Urban Airshed Model with Aerosol Chemistry): A three-dimensional photochemical grid model used to simulate PM and ozone formation, based on the UAM. Additional chemical mechanism modules are used to simulate PM aerosol components. Used to project episodic PM concentrations.

UAM/LC (Urban Airshed Model with Linear Chemistry): A three-dimensional photochemical grid model used to simulate PM formation, particularly particulate sulfates and nitrates. The complex, non-linear chemical mechanism used in UAM and UAM/Aero is replaced by a simplified, linear chemistry that uses empirical relationships to determine particulate nitrate and sulfate levels. Used to project annual average PM component concentrations.

Ultrafine Particles: Particles with a diameter less than 0.1 μm (or 100nm).

Visibility: The distance that atmospheric conditions allow a person to see at a given time and location. Visibility reduction from air pollution is often due to the presence of sulfur and nitrogen oxides, as well as particulate matter.

VOCs (Volatile Organic Compounds): Hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and/or may themselves be toxic. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.