

## GLOSSARY OF AIR POLLUTION TERMS

Have you ever wondered what a baghouse is or what NMOG stands for? That cold ironing is not a new way to get wrinkles out of a shirt or that a SIP isn't a beverage taste-test? You're not alone. ARB has updated its glossary of air pollution terms and lists of [acronyms](#) to help.

Keep in mind that we are not trying to create an exhaustive list, nor are we giving legal terminology. This glossary is simply a resource for the general public.

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### A

#### AB 1807 (Tanner)

A California state law (Health and Safety Code section 39650 et seq.) that became effective in January of 1984 and established the framework for California's [toxic air contaminant](#) identification and control program. For more information, please see our [toxics summary](#).

#### AB 998

Assembly Bill 998 established the Non-Toxic Dry Cleaning Incentive Program to provide the dry cleaning industry with \$10,000 grant funds to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives. The legislation also requires ARB to establish a demonstration program to showcase these non-toxic and non-smog forming technologies.

#### AB 2588 (Connelly) Air Toxics "Hot Spots" Information and Assessment Program

A California program (Health and Safety Code Section 44300 et seq.) that requires certain [stationary sources](#) to report the type and quantity of specific toxic substances they routinely release into the air. The program identifies high priority facilities and requires facilities posing significant risks to notify all exposed individuals. For more information, visit our [AB 2588](#) website.

#### AB 2766 (Sher) Motor Vehicle Fee Program

A program that permits [air districts](#) and local governments to allocate vehicle registration surcharge fees to projects that reduce motor vehicle emissions such as [zero-emission vehicles](#), bike lanes and trip reduction programs.

#### AB 32(The Global Warming Solutions Act of 2006)

The Legislature passed and Governor Schwarzenegger signed AB 32, which set the 2020 greenhouse gas emissions reduction goal into law. It directed ARB to develop discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit on greenhouse gas emissions.

#### Abatement

The reduction or elimination of pollution.

#### Acceptable Daily Intake (ADI)

The highest daily amount of a substance that may be consumed over a lifetime without adverse effects.

#### Acid Deposition

A comprehensive term for the various ways acidic compounds precipitate from the atmosphere and deposit onto surfaces. It can include: 1) wet deposition by means of acid rain, fog and snow; and, 2) dry deposition of acidic particles (aerosols).

## Acid Rain

Rain that is especially acidic (pH is less than 5.2). Principal components of acid rain typically include nitric and sulfuric acid. These may be formed by the combination of nitrogen and sulfur oxides with water vapor in the [atmosphere](#).

## Acronyms

The ARB uses many acronyms and we hope this [list of acronyms lists](#) will be of assistance to users of this website.

## Acute Exposure

One or a series of short-term exposures generally lasting less than 24 hours.

## Acute Health Effect

A health effect that occurs over a relatively short period of time (e.g., minutes or hours). The term is used to describe brief exposures and effects which appear promptly after [exposure](#).

## Add-On Control Device

An air pollution control device such as carbon absorber or incinerator that reduces the pollution in exhaust gas. The control device usually does not affect the process being controlled and thus is "add-on" technology, as opposed to a scheme to control pollution through altering the basic process itself. See also [pollution prevention](#).

## Adsorber

An emissions control device that removes [VOCs](#) from a gas stream as a result of the gas attaching (adsorbing) onto a solid matrix such as activated carbon.

## Advanced Technology Partial Zero Emission Vehicle (AT PZEV)

A vehicle that meets the Partial Zero Emission Vehicle (PZEV) standard and includes zero emission vehicle enabling technologies.

## Adverse Health Effect

A health effect from exposure to air contaminants that may range from relatively mild temporary conditions, such as eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions, such as birth defects, cancer or damage to lungs, nerves, liver, heart, or other organs.

## Aerosol

Particles of solid or liquid matter that can remain suspended in air from a few minutes to many months depending on the particle size and weight.

## AFIP(Alternative Fuel Incentive Program)

Pursuant to Assembly Bill 1811, ARB with the California Energy Commission, developed a joint plan to spend \$25 million for the purposes of incentivizing biofuels and high-efficiency, low-emitting vehicle technology. The funds were for developing specific measures to reduce air pollution and greenhouse gas emissions from fuels and mobile sources. AB 1811 required the funds to be encumbered by June 30, 2007, and expended by June 30, 2009.

## Afforestation

The planting of new forests on lands where the preceding vegetation or land did not contain forests.

## Afterburner

An air pollution abatement device that removes undesirable organic gases through incineration.

## Agricultural Burning

The intentional use of fire for vegetation management in areas such as agricultural fields, orchards, rangelands and forests. The regulation is described in the Agricultural Burning Guidelines, Title 17, California Code of Regulations. For more information, see our [smoke management program](#) website.

## Air

So-called "pure" air is a mixture of gases containing about 78 percent nitrogen; 21 percent oxygen; less than 1 percent of [carbon dioxide](#), argon and other gases; and, varying amounts of water vapor. See also [ambient air](#).

## Air Basin

A land area with generally similar meteorological and geographic conditions throughout. To the extent possible, air basin boundaries are defined along political boundary lines and include both the [source](#) and receptor areas. California is currently divided into 15 air basins.

## Airborne Toxic Control Measure (ATCM)

A control measure adopted by the ARB (Health and Safety Code Section 39666 et seq.), that reduces emissions of [toxic air contaminants](#). For more information, see our [ATCM](#) webpage.

## Air District

A political body responsible for managing air quality on a regional or county basis. California is currently divided into 35 air districts. (See also [air pollution control district](#) and [air quality management district](#)). For more information, see our [local air district directory](#).

## Air Monitoring

Sampling for and measuring of pollutants present in the [atmosphere](#).

## Air Pollutants

Amounts of foreign and/or natural substances occurring in the atmosphere that may result in adverse effects to humans, animals, vegetation and/or materials. (See also [air pollution](#).)

## Air Pollution

Degradation of air quality resulting from unwanted chemicals or other materials occurring in the air. (See also [air pollutants](#).)

## Air Pollution Control District (APCD)

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. (See also [air quality management district](#) or [Air pollution control district](#)).

## Air Quality Index (AQI)

A numerical index used for reporting severity of air pollution levels to the public. It replaces the formerly used Pollutant Standards Index (PSI). Like the PSI, the AQI incorporates five criteria pollutants -- ozone, particulate matter, carbon monoxide, sulfur dioxide and nitrogen dioxide -- into a single index. The new index also incorporates the 8-hour ozone standard and the 24-hour PM<sub>2.5</sub> standard into the index calculation. AQI levels range from 0 (Good air quality) to 500 (Hazardous air quality). The higher the index, the higher the level of pollutants and the greater the likelihood of health effects. The AQI incorporates an additional index category -- unhealthy for sensitive groups -- that ranges from 101 to 150. In addition, the AQI comes with more detailed cautions. For more information, see our [air quality index](#) page.

## Air Quality Management District (AQMD)

A group of counties 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. (See also [air pollution control district](#)). For more information, please see our [local air district directory](#).

## Air Quality Management Plan (AQMP)

A plan prepared by an APCD/AQMD, for a county or region designated as a [non-attainment 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 \(SIP\)](#).

## Air Quality Manager

An individual employed by the local, state, or federal government to manage air quality.

## Air Quality Simulation Model

A mathematical relationship between emissions and air quality which simulates on a computer the transport, dispersion and transformation of compounds emitted into the air. For more information, please see our [software](#) webpage.

## Air Quality Standard(AQS)

The prescribed level of a pollutant in the outside air that should not be exceeded during a specific time period to protect public health. Established by both federal and state governments. (See also [ambient air quality standards](#).) For more information please see our [ambient air quality standards](#).

## Air Quality Working Groups (AQWG)

Advisory groups that provide forums for communication, cooperation and coordination in the development and implementation of air quality control measures. They may be comprised of representatives from the ARB, citizen groups, environmental groups, industry, local air districts and the U.S. EPA.

## Air Resources Board(ARB)

(See [California Air Resources Board](#).)

## Airshed

A subset of [air basin](#), the term denotes a geographical area that shares the same air because of topography, meteorology and climate.

## Air Toxics

A generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA's [hazardous air pollutant program](#) or California's [AB 1807](#) and/or [AB 2588](#) air toxics programs, 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. For more information, visit our [toxics](#) website.

## Allowances

An authorization to emit, during a specified year, up to one ton of carbon dioxide equivalent.

## Alternative Fuels

Fuels such as methanol, ethanol, natural gas and liquid petroleum gas that are cleaner burning and help to meet ARB's mobile and stationary [emission standards](#). These fuels may be used in place of less clean fuels for powering motor vehicles. For more information, visit our [alternative fuels](#) website.

## Ambient Air

The air occurring at a particular time and place outside of structures. Often used interchangeably with "outdoor air." (See also [air](#).)

## Ambient Air Quality Standards (AAQS)

Health- and welfare-based standards for outdoor air which identify the maximum acceptable average concentrations of air pollutants during a specified period of time. (See also [CAAQS](#) and [NAAQS](#) and [Criteria Air Pollutant](#).) For more information, visit our [ambient air quality standards](#) website.

## American Society for Testing and Materials (ASTM)

A non-profit organization that provides a forum for producers, consumers and representatives of government and industry to write laboratory test standards for materials, products, systems and services. ASTM publishes standard test methods, specifications, practices, guides, classifications and terminology. For more information, visit our [ASTM](#) website.

## Ammonia (NH<sub>3</sub>)

A pungent colorless gaseous compound of nitrogen and hydrogen that is very soluble in water and can easily be condensed into a liquid by cold and pressure. Ammonia reacts with NO<sub>x</sub> to form ammonium nitrate -- a major PM<sub>2.5</sub> component in the western United States.

## Anaerobic Digestion

A biochemical process in which bacteria break down biodegradable organic material, such as manure, in an oxygen-free environment. Temperature, moisture, nutrient content and pH, can be controlled through the use of an airtight chamber (digester). The break-down of the organic material results in biogas, a mixture of methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>) and trace amounts of other gases.

## Area Sources

Those sources for which a methodology is used to estimate emissions. This can include area-wide, mobile and natural sources and also groups of stationary sources (such as dry cleaners and gas stations). The [California Clean Air Act](#) requires [air districts](#) to include area sources in the development and implementation of the [AQMP](#). In the California emission inventory all sources that are not reported as individual point sources are included as area sources. The federal air toxics program defines a source that emits less than 10 tons-per-year of a single [hazardous air pollutant \(HAP\)](#) or 25 tons-per-year of all HAPs as an area source. For more information, visit our [area-wide source methodologies](#) website.

## Area-Wide Sources

Sources of pollution where the emissions are spread over a wide area, such as consumer products, fireplaces, road dust and farming operations. Area-wide sources do not include [mobile sources](#) or [stationary sources](#).

## Aromatic

A type of [hydrocarbon](#), such as benzene or toluene. Some aromatics are toxic.

## Asbestos

A mineral fiber that can pollute air or water and cause [cancer](#) or asbestosis when inhaled. The U.S. EPA has banned or severely restricted its use in manufacturing and construction and the ARB has imposed limits on the amount of asbestos in serpentine rock that is used for surfacing applications. For more information, visit our [website](#).

## Asthma

A chronic inflammatory disorder of the lungs characterized by wheezing, breathlessness, chest tightness and cough.

## Atmosphere

The gaseous mass or envelope of [air](#) surrounding the Earth. From ground-level up, the atmosphere is further subdivided into the [troposphere](#), stratosphere, mesosphere and the thermosphere.

## Attainment Area

A geographical area identified to have air quality as good as, or better than, the national and/or California [ambient air quality standards \(NAAQS/CAAQS\)](#). An area may be an attainment area for one pollutant and a nonattainment area for others. For more information, visit our [area designations](#) website.

## Authority to Construct (A/C)

A pre-construction permit issued by an [air district](#).

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# B

## Baghouse

An air pollution control device that traps [particulates](#) by forcing gas streams through large permeable bags usually made of glass fibers. For more information, visit our [baghouse training](#) website.

## Banking

A provision in [air district](#) permit regulations that allows a facility to accumulate credits for reducing emissions beyond regulatory limits (emission reduction credits) and then use or sell those credits at a later date. For more information, visit our [New Source Review](#) website.

## Battery Electric Vehicle (BEV)

A vehicle that runs on electricity stored in batteries and has an electric motor rather than an internal combustion engine. These vehicles also meet the requirements of the [Zero Emission Vehicle Regulation](#).

## 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)

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 \(Prevention of Significant Deterioration\)](#). For more information, visit our [BACT](#) website.

## Best Available Retrofit Control Technology (BARCT)

An air emission limitation that applies to existing [sources](#) and is based on the maximum degree of reduction achievable, taking into account environmental, energy and economic impacts by each class or category of source. (See also [Best Available Control Technology](#).) For more information, visit our [BARCT](#) website.

## Biogenic Source

Biological sources such as plants and animals that emit air pollutants such as [volatile organic compounds](#). Examples of biogenic sources include animal management operations and oak and pine tree forests. (See also [natural sources](#).) For more information, visit our [Ecosystems Impact website](#).

## Bulk Plant

An intermediate gasoline distribution facility where delivery of gasoline to and from the facility is solely by truck.

## Bureau of Automotive Repair (BAR)

An agency of the California Department of Consumer Affairs that manages the implementation of the motor vehicle [Inspection and Maintenance Program](#). For more information, visit our [the Smog Check](#) website.

## Burn Day

A day that is not officially determined by meteorologists and [air quality managers](#) to be a no-burn day. Burn days vary by air basin on any given day. For more information, visit our [smoke management program](#) website.

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# C

## California Air Pollution Control Officers Association (CAPCOA)

A nonprofit association of the air pollution control officers from all 35 air quality agencies throughout California. CAPCOA was formed in 1975 to promote clean air and to provide a forum for sharing of knowledge, experience and information among the air quality regulatory agencies around the state. CAPCOA is an organization of air quality professionals -- leaders in their field -- who promote unity and efficiency and strive to encourage consistency in methods and practices of air pollution control. For more information, visit our [CAPCOA's](#) website.

## California Air Resources Board (ARB or CARB)

The state's lead air quality agency consisting of an 11-member board appointed by the Governor, and just over thousand employees. ARB is responsible for attainment and maintenance of the state and federal [air quality standards](#), California climate change programs, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

## California Ambient Air Quality Standard (CAAQS)

A legal limit that specifies the maximum level and time of exposure in the outdoor air for a given air pollutant and which is protective of human health and public welfare. CAAQSs are recommended by the [OEHHA](#) and adopted into regulation by the ARB. CAAQSs are the standards which must be met per the requirements of the [California Clean Air Act \(CCAA\)](#). For more information, visit our [AAQS](#) website.

## California Clean Air Act (CCAA)

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 [air districts](#) in violation of the [CAAQS](#) must prepare attainment plans that 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.

## California Environmental Protection Agency (Cal/EPA)

A state government agency established in 1991 for unifying environmental activities related to public health protection in the State of California. There are five boards, departments and offices under the organization of [Cal/EPA](#) including the [California Air Resources Board \(ARB\)](#), State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB), Department of Pesticide Regulation (DPR), Department of Toxic Substances Control (DTSC) and [Office of Environmental Health Hazard Assessment \(OEHHA\)](#). The Cal/EPA boards, departments and offices are directly responsible for implementing California environmental laws, or play a cooperative role with other regulatory agencies at regional, local, state and federal levels. For a full list of Cal/EPA organizations, see [Cal/EPA's home page](#).

## California Environmental Quality Act (CEQA)

A California law that 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 eliminated or reduced and that air quality mitigation measures are implemented.

## California Hydrogen Highway Network (CaH<sub>2</sub>Net)

An initiative to add hydrogen fueling infrastructure in California to meet the demands of hydrogen vehicles deployed in the state. For more information, visit the [California Hydrogen Highway Network](#) website.

## California Phase 2 Reformulated Gasoline (CaRFG Phase 2 or CaRFG2)

Gasoline sold, intended for sale, or made available for sale as a motor vehicle fuel in California subject to the California Phase 2 reformulated gasoline standards. Learn more at the [fuels website](#).

## California Phase 3 Reformulated Gasoline (CaRFG Phase 3 or CaRFG3)

Gasoline sold, intended for sale, or made available for sale as a motor vehicle fuel in California subject to the California Phase 3 reformulated gasoline standards. Learn more at the [fuels website](#).

## California Solar Initiative (CSI)

A California Public Utilities Commission investor-owned utility program initiated on January 1, 2007, to provide incentives for installing solar distributed generation projects.

## Cancer

A group of diseases characterized by uncontrolled invasive growth of body cells leading to the formation of malignant tumors that tend to grow rapidly and spread (i.e., metastasize).

## Cap

An enforceable limit on total emissions for the facilities covered under the cap-and-trade program. The cap is set for each compliance period of the program by the state and emissions are reduced as the cap declines over time.

## Cap-and-Trade



**Cap-and-trade** is a regulatory approach used to control pollution by setting a firm cap on allowed emissions while employing market mechanisms to achieve emissions reductions while driving costs down. In a cap-and-trade program, a limit, or cap is put on the amount of greenhouse gases that can be emitted.

## **CARB gasoline, California Reformulated Gasoline (CaRFG)**

Gasoline sold, intended for sale, or made available for sale as a motor vehicle fuel in California subject to the California reformulated gasoline standards. Learn more at the [fuels website](#).

## **CARBOB (California reformulated gasoline blendstock for oxygenate blending)**

A petroleum-derived liquid that is intended to be a product that will become California reformulated gasoline upon the addition of an oxygenate, such as ethanol. Learn more at the [fuels website](#).

## **Carbon Capture and Sequestration (CCS)**

The process of capturing CO<sub>2</sub> from a stationary source, followed by compressing, transporting and injecting it into a suitable geologic formation where it will be sequestered.

## **Carbon Dioxide (CO<sub>2</sub>)**

A colorless, odorless gas that occurs naturally in the Earth's [atmosphere](#). Significant quantities are also emitted into the air by fossil fuel [combustion](#). (See also [ClimateChange.ca.gov gloss](#).)

## **Carbon Dioxide Equivalent (CO<sub>2</sub>E)**

The amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

## **Carbon Monoxide (CO)**

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

## **Carbon Sequestration**

The process of removing carbon dioxide (CO<sub>2</sub>) from the atmosphere by storing it in a carbon reservoir other than the atmosphere. Sequestration enhances carbon storage in trees and soils, preserves existing tree and soil carbon and reduces emissions of CO<sub>2</sub>, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

## **Carcinogen**

A cancer-causing substance. (See also [cancer](#).)

## **Carl Moyer Fund**

A multi-million dollar incentive grant program designed to encourage reduction of emissions from heavy-duty engines. The grants cover the additional cost of cleaner technologies for on-road, off-road, marine, locomotive and agricultural pump engines, as well as forklifts and airport ground support equipment. Visit our [Carl Moyer Program website](#).

## **CAS Registry Number**

The Chemical Abstracts Service Registry Number (CAS) is a numeric designation assigned by the American Chemical Society's Chemical Abstract Service and uniquely identifies a specific compound. This entry allows one to conclusively identify a material regardless of the name or naming system used.

## Catalyst

A substance that can increase or decrease the rate of a chemical reaction between the other chemical species without being consumed in the process.

## Catalytic Converter

A motor vehicle pollution control device designed to reduce emissions such as [oxides of nitrogen](#), [hydrocarbons](#) and [carbon monoxide](#). Catalytic converters have been required equipment on all new motor vehicles sold in California since 1979.

## Continuous Emission Monitor (CEM)

CEM involves determining compliance of stationary sources with their emission limitations on a continuous basis by installing a system to operate continuously inside of the smokestack or other emission source. CEM are also used for process control and to monitor the operations of the control equipment.

## Certified, Certification

The formal process where the manufacturer of a vehicle, product, or process demonstrates compliance with all applicable regulations and is granted permission to market, sell, or deliver the item in California. Certification in California is usually indicated by the granting of an [Executive Order \(EO\)](#).

## Chlorofluorocarbons (CFCs)

Any of a number of substances consisting of chlorine, fluorine and carbon. CFCs are used for refrigeration, foam packaging, solvents and propellants.

## CHP

See [Combined Heat and Power](#).

## Chronic Exposure

Long-term exposure, usually lasting one year to a lifetime.

## Chronic Health Effect

A health effect that occurs over a relatively long period of time (e.g., months or years). (See also [acute health effect](#).)

## Clean Vehicle Rebate Project (CVRP)

CVRP is intended to encourage and accelerate [zero-emission vehicle](#) deployment and technology innovation by providing grants to eligible vehicles. For more details see the [ARB](#) website.

## Cleaner-Burning Gasoline

Gasoline fuel that results in reduced emissions of [carbon monoxide](#), [nitrogen oxides](#), reactive organic gases and particulate matter, in addition to toxic substances such as benzene and 1,3-butadiene. Visit our [cleaner-burning gasoline](#) website or an overview of [ARB's fuels program](#).

## Climate Action Team (CAT)

The Secretary of Cal/EPA leads the Climate Action Team made up of representatives from state agencies, boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the state's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide greenhouse gas targets that were established by [Executive Order S-3-05](#) and further defined under [AB 32](#).

## Climate Change

see [Global Warming](#) and/or its own [glossary](#).

## Coating

A layer of any substance such as paint, lacquer, or varnish applied over a surface for protection. For more information, visit our [coatings website](#).

## Coefficient of Haze (COH)

A measurement of the quantity of dust and smoke in the atmosphere in a theoretical 1,000 linear feet of air. A COH of less than three is considered clean air and more than five is of some concern. COH readings of 20 or more can occur in urban areas.

## Cold Ironing

Cold Ironing or Shore power refers to providing electrical power to a vessel that is docked. The purpose of shore power is to allow the vessel operator to turn off the vessel's auxiliary engines, which would normally be providing the necessary electricity. Although there are emissions associated with the generation of electricity used for shore power, those emissions are much less than those from the auxiliary engines, which burn diesel fuel.

## Combined Heat and Power (CHP)

An approach to generating power and thermal energy from a single fuel source. CHP application involves the recovery of otherwise wasted thermal energy to produce additional power or useful thermal energy.

## Combustion

The act or instance of burning some type of fuel, such as gasoline, to produce energy. Combustion is typically the process that powers automobile engines and power plant generators.

## Compressed Natural Gas (CNG)

(See [alternative fuels](#).)

## Conformity

A demonstration of whether a federally-supported activity is consistent with the [State Implementation Plan \(SIP\)](#) -- per Section 176 (c) of the [Clean Air Act](#). Transportation conformity refers to plans, programs and projects approved or funded by the Federal Highway Administration or the Federal Transit Administration. General conformity refers to projects approved or funded by other federal agencies.

## Congestion Management Program

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

## Consumer Products

Products such as hairspray, detergents, cleaning compounds, polishes, lawn and garden products, personal care products and automotive specialty products that are part of our everyday lives and, through consumer use, may produce volatile organic air emissions which contribute to air pollution. Visit our [consumer products website](#).

## Continuous Sampling Device

An air analyzer that measures air quality components continuously. (See also [Integrated Sampling Device](#).)

## Control Techniques Guidelines (CTG)

Guidance documents issued by [U.S. EPA](#) that define reasonably available control technology ([RACT](#)) to be applied to existing facilities that emit excessive quantities of air pollutants; they contain information both on the economic and technological feasibility of available techniques.

## COPD (Chronic Obstructive Pulmonary Disease)

COPD is a lung disease characterized by chronic obstruction of airflow that interferes with normal breathing and is generally progressive, but may be partially reversible. The more familiar terms 'chronic bronchitis' and 'emphysema' are included within the COPD diagnosis. COPD is strongly associated with tobacco smoking but can occur in non-smokers as well and is a serious, life-threatening lung disease.

## Cost-Effectiveness

The cost of an emission control measure assessed in terms of dollars-per-pound, or dollars-per-ton, of air emissions reduced.

## Criteria Air Pollutant

An air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include: [ozone](#), [carbon monoxide](#), [nitrogen dioxide](#), [sulfur dioxide](#), [PM10](#) and [PM2.5](#). The term "criteria air pollutants" derives from the requirement that the [U.S. EPA](#) must describe the characteristics and potential health and welfare effects of these pollutants. The U.S. EPA and ARB periodically review new scientific data and may propose revisions to the standards as a result. View our health and [air pollution](#) website.

## Cyclone

An air pollution control device that removes larger particles -- generally greater than one micron -- from an air stream through centrifugal force.

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# D

## Deciview

A measurement of visibility. One deciview represents the minimal perceptible change in visibility to the human eye.

## Degreaser

Equipment that removes grease, dirt, or unwanted materials from any part or product. Degreasers typically use aqueous or nonaqueous solvents, as liquid baths or condensing vapors, to remove such material.

## Deposit Control Additives

Substances added to motor vehicle fuel to reduce and prevent deposits in the fuel delivery system and engine intake valves.

## Design Value

The pollutant concentration used by [air quality managers](#) as the basis for determining [attainment](#) of an [air quality standard](#), generally by using an [air quality model](#). The design value may or may not be the same as the [designation value](#).

## Designation Value

The pollutant concentration used by [air quality managers](#) for designating [attainment](#) status of an [air district](#) with respect to the state and federal [ambient air quality standards](#). Generally, the designation value is the highest concentration that remains after excluding certain qualifying values. For a specific pollutant, the designation value for the state and federal standards may not be the same.

## Diesel Engine

A type of internal combustion engine that uses low-volatility petroleum fuel and fuel injectors and initiates [combustion](#) using compression ignition (as opposed to spark ignition that is used with gasoline engines).

## Discrete Early Action Items

[AB 32](#) directed ARB to identify and adopt climate change regulations for discrete early actions that could be enforceable on or before January 1, 2010. ARB identified nine discrete early action measures including regulations affecting landfills, motor vehicle fuels, refrigerants in cars, tire pressure, port operations and other sources in 2007 that included ship electrification at ports and reduction of high [GWP](#) gases in consumer products.

## Dispersion Model

See [air quality simulation model](#).

## Dose

The amount of a pollutant that is absorbed. A level of exposure which is a function of a pollutant's concentration, the length of time a subject is exposed and the amount of the pollutant that is absorbed. The concentration of the pollutant and the length of time that the subject is exposed to that pollutant determine dose.

## Dose-Response

The relationship between the [dose](#) of a pollutant and the response (or effect) it produces on a biological system.

## Dust

Solid [particulate matter](#) that can become airborne.

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# E

## E85

A nominal blend of 85 volume percent denatured ethanol and 15 volume percent unleaded gasoline that is used in flexible fuel vehicles.

## EAAC (Economic and Allocation Advisory Committee)

The Cal/EPA Secretary and ARB Chairman created an Economic and Allocation Advisory Committee to advise ARB on the design of a greenhouse gas [cap-and-trade](#) program. EAAC evaluated and provided recommendations on the implications of different allowance allocation strategies such as free allocation, auction, or a combination of both. EAAC also provided advice to ARB on its revised [AB 32](#) economic analysis.

## EJAC (Environmental Justice Advisory Committee)

[AB 32](#) directed ARB to convene an Environmental Justice Advisory Committee to advise ARB on the implementation of [AB 32](#). EJAC is comprised of representatives from communities in the state with the

most significant exposure to air pollution, including, but not limited to, communities with minority populations or low-income populations.

## Electric Vehicle

A motor vehicle that uses an electric motor as the basis of its operation. Such vehicles emit virtually no air pollutants. (See also [hybrid electric vehicle](#).) For more information, please see our [zero emission vehicles](#) website.

## Electrostatic Precipitator (ESP)

An air pollution control device that removes [particulate matter](#) from an air stream by imparting an electrical charge to the particles for mechanical collection at an electrode. For more information, visit our associated [training class](#) on this subject.

## Emission Factor

For [stationary sources](#), the relationship between the amount of pollution produced and the amount of raw material processed or burned. For [mobile sources](#), the relationship between the amount of pollution produced and the number of vehicle miles traveled. By using the emission factor of a pollutant and specific data regarding quantities of materials used by a given source, it is possible to compute emissions for the source. This approach is used in preparing an emissions inventory. Visit [U.S. EPA emission factors](#), or [ARB's emission factors and toxic air contaminants](#).

## Emission Inventory

An estimate of the amount of pollutants emitted into the [atmosphere](#) from major mobile, stationary, area-wide and natural source categories over a specific period of time such as a day or a year. For more information, visit our [emissions inventory](#) website.

## Emission Offsets (also known as Emissions Trading)

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 [best available control technology](#). For information see our New Source Review [Emission Reduction Credit Offsets](#) website.

## Emission Permit

A non-transferable or tradable allocation of entitlements by a government to an individual firm to emit a specified amount of a substance.

## Emission Rate

The weight of a pollutant emitted per unit of time (e.g., tons/year).

## Emissions

Released or discharged air contaminants in the ambient air from any source.

## 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.

## Energy Content

The amount of energy available for doing work. For example, the amount of energy in fuel available for powering a motor vehicle.

## Enhanced AT PZEV

Emissions certification standard for motor vehicles; vehicle meets the requirements of an [AT PZEV](#) and has some all electric range, such as a plug-in hybrid, or has an internal combustion engine (ICE) that runs on hydrogen.

## Environmental Justice (EJ)

The fair treatment of people of all races and incomes with respect to development, implementation and enforcement of environmental laws, regulations and policies.

## Environmental Performance Label (EP Label)

A label that provides a Global Warming Score and Smog Score, both on a scale from 1 to 10 (10 being cleanest). The [Environmental Performance](#) Label is required on all new cars sold in California that are manufactured after January 1, 2009.

## Environmental Tobacco Smoke (ETS)

Primarily a combination of sidestream smoke from the burning end of a cigarette, pipe or cigar and exhaled mainstream smoke from the smoker. Other components include smoke emitted at the mouthpiece during puff drawing. For more information, visit our [environmental tobacco smoke](#) website.

## Epidemiology

The study of the occurrence and distribution of disease within a population.

## ETAAC (Economic and Technology Advancement Advisory Committee)

The committee was formed as directed by [AB 32](#) to advise ARB on activities that will facilitate investment in and implementation of technological research and development opportunities including, but not limited to, identifying new technologies, research, demonstration projects, funding opportunities, developing state, national and international partnerships and technology transfer opportunities; and, identifying and assessing research and advanced technology investment and incentive opportunities that will assist in the reduction of greenhouse gas emissions. The committee may also advise the ARB on state, regional, national and international economic and technological developments related to greenhouse gas emission reductions.

## Ethanol (ETOH)

Ethyl-alcohol, a volatile alcohol containing two carbon groups (CH<sub>3</sub>CH<sub>2</sub>OH). For fuel use, ethanol is produced by fermentation of corn or other plant products.

## ETO

The chemical ethylene oxide (1,2-epoxyethane) which has been identified by the ARB and listed as a toxic air contaminant in title 17, California Code of Regulations, section 93000.

## Evaporative Emissions

Emissions from evaporating gasoline, which can occur during vehicle refueling, vehicle operation and even when the vehicle is parked. Evaporative emissions can account for two-thirds of the hydrocarbon emissions from gasoline-fueled vehicles on hot summer days.

## Exhaust Gas Recirculation (EGR)

An emission control method that involves recirculating exhaust gases from an engine back into the intake and [combustion](#) chambers. This lowers combustion temperatures and reduces NOx. (See also [nitrogen oxides](#).)

## Executive Order (EO)

The legal document that indicates that a product subject to ARB regulations has in fact meet those requirements and can be offered for sale in California. The Executive Order, or EO, also lists important compliance information such as the legal description of the product and manufacturer, the actual standards met, when the executive order was granted and any conditions of the certification.

## Exceedance

A measured level of an air pollutant higher than the national or state [ambient air quality standards](#). (See also [NAAQS](#) and [CAAQS](#).)

## Expected Peak Day Concentration (EPDC)

A calculated value that represents the concentration expected to occur at a particular site once per year, on average. The calculation procedure uses measured data collected at the site during a three-year period. Measured concentrations that are higher than the EPDC are excluded from the state area designation process.

## Exposure

The concentration of the pollutant in the air multiplied by the population exposed to that concentration over a specified time period.

## Exposure Assessment

Measurement or estimation of the magnitude, frequency, duration and route of exposure to a substance for the populations of interest.

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# F

## FED (Functional Equivalent Environmental Document)

The [California Environmental Quality Act \(CEQA\)](#) allows public agencies to prepare a plan or other written documentation in lieu of an environmental impact report (i.e., a functional equivalent environmental document) which outlines the environmental analyses as part of any regulatory process. Prior to taking final action on any proposal for which significant environmental issues have been raised, the decision maker will provide a written response to each such issue.

## Federal Clean Air Act (FCAA)

A federal law passed in 1970 and amended in 1974, 1977 and 1990 that 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, mobile and stationary control measures, air toxics standards, acid rain control measures and enforcement provisions. For more information, visit the [Federal Clean Air Act](#).

## Federal Implementation Plan (FIP)

In the absence of an approved [State Implementation Plan \(SIP\)](#), a plan prepared by the [U.S. EPA](#) that provides measures that nonattainment areas must take to meet the requirements of the Federal Clean Air Act.

## Feebate

A market-based emission fee in which the fee is levied on projected lifecycle vehicle emissions and is refunded according to an allocation formula.



## Flexible Fuel Vehicle (FFV)

Vehicles that can use a combination of fuels such as alcohol fuel and unleaded gasoline.

## Fly Ash

Air borne solid particles that result from the burning of coal and other solid fuel.

## Foreign Military Officer

Any active duty military personnel of a foreign country assigned to a California military installation as part of an exchange or joint training agreement authorized or sponsored by the U.S. Department of Defense. Foreign Military Officers are not subject to California direct import vehicle requirements for registration and have the same privileges as out-of-state military personnel.

## Fossil Fuels

Fuels such as coal, oil and natural gas; so-called because they are the remains of ancient plant and animal life.

## Fuel Cell

An electrochemical cell that captures the electrical energy of a chemical reaction between fuels such as liquid hydrogen and liquid oxygen and converts it directly and continuously into the energy of a direct electrical current. For more information, see the ARB's [fuel cell portal](#).

## Fuel Cell Electric Vehicle (FCEV)

A zero-emission vehicle that runs on compressed hydrogen fed into a fuel cell "stack" that produces electricity to power the vehicle.

## Fugitive Dust

Dust particles that are introduced into the air through certain activities such as soil cultivation, or vehicles operating on open fields or dirt roadways. This is a subset of [fugitive emissions](#).

## Fugitive Emissions

Emissions not caught by a capture system; which are often due to equipment leaks, evaporative processes and windblown disturbances.

## Fume

Solid particles under 1 micron in diameter formed as vapors condense, or as chemical reactions take place.

## Furnace

A [combustion](#) chamber; an enclosed structure in which fuel is burned to heat air or material.

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# G

## Gas Turbine

An engine that uses a compressor to draw in air and compress it. Fuel is then added to the air and combusted in a combustor. Hot combustion gases exiting the engine turn a turbine which also turns the compressor. The engine's power output can be delivered from the compressor or turbine side of the engine.

## Gasoline Volatility

The evaporative properties of gasoline. Gasoline vapor is a [volatile organic compound](#). (See also [Reid Vapor Pressure](#).)

## Global Warming

An increase in the temperature of the Earth's [troposphere](#). Global warming has occurred in the past as a result of natural influences, but the term is most often used to refer to the warming predicted by computer models to occur as a result of increased emissions of greenhouse gases. For more information, go to ARB's [climate change website](#) or check out its own [glossary](#).

## Global Warming Potential (GWP)

The relative warming of a greenhouse gas over a specified period of time as compared to carbon dioxide (GWP of 1). GWP allows for the conversion of different greenhouse gas emissions into the same emissions unit, [carbon dioxide equivalents](#) (CO<sub>2</sub>E).

## Global Warming Score

A score that ranks each vehicle's CO<sub>2</sub>-equivalent value on a scale of 1-10 (10 being the cleanest) relative to all other vehicles. All vehicles manufactured after January 1, 2009, must display this score on the [Environmental Performance Label](#).

## Goods Movement

The processes and activities involved in the pickup, movement and delivery of goods (agricultural, consumer, industrial products and raw materials) from producers/points of origin to consumers/point of use or delivery. '[Goods movement](#)' relies on a series of transportation, financial and information systems for this to occur, that involves an international, national, state, regional and local networks of producers and suppliers, carriers and representative agents from the private sector, the public sector (federal, state, regional and local governmental agencies) and the general public.

## Greenhouse Effect

The warming effect of the Earth's [atmosphere](#). Light energy from the sun which passes through the Earth's atmosphere is absorbed by the Earth's surface and re-radiated into the atmosphere as heat energy. The heat energy is then trapped by the atmosphere, creating a situation similar to that which occurs in a car with its windows rolled up. A number of scientists believe that the emission of [CO<sub>2</sub>](#) and other gases into the atmosphere may increase the greenhouse effect and contribute to global warming. (Climate Change: see [ClimateChange.ca.gov gloss](#).)

## Greenhouse Gases (GHG)

Atmospheric gases such as carbon dioxide, methane, chlorofluorocarbons, nitrous oxide, ozone and water vapor that slow the passage of re-radiated heat through the Earth's [atmosphere](#). (See also [ClimateChange.ca.gov gloss](#).)

## GREET

Greenhouse Gases, Regulated Emissions and Energy Use in Transportation model used to determine emissions from various vehicle and fuel combinations.

## 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.

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# H

## Hazardous Air Pollutant (HAP)

An air pollutant listed under section 112 (b) of the Federal Clean Air Act as particularly hazardous to health. Emission sources of hazardous air pollutants are identified by [U.S. EPA](#) and [emission standards](#) are set accordingly. For more information, visit our [Title III website](#) area.

## Haze (Hazy)

A phenomenon that results in reduced visibility due to the scattering of light caused by [aerosols](#). Haze is caused in large part by man-made air pollutants.

## Heavy-Duty Vehicle Inspection Program (HDVIP)

This regulation authorizes random roadside smoke opacity testing of heavy-duty diesel trucks and buses. The opacity of exhaust emitted from these engines must not exceed 40 percent (1991 and newer engine model years) or 55 percent (all pre-1991 engines). Gasoline and diesel trucks and buses are also inspected for tampering and for engine certification label compliance.

## Health-Based Standard (Primary Standard)

A dosage of air pollution scientifically determined to protect against human health effects such as asthma, emphysema and cancer.

## Health Risk Assessment (HRA)

A document that identifies the risks and quantities of possible [adverse health effects](#) that may result from [exposure](#) to emissions of [toxic air contaminants](#). A health risk assessment cannot predict specific health effects; it only describes the increased possibility of adverse health effects based on the best scientific information available.

## "Hot Spot"

(See [toxic hot spot](#).)

## Hybrid Electric Vehicle (HEV)

A vehicle that combines an internal combustion engine with a battery and electric motor. This combination offers the range and refueling capabilities of a conventional vehicle, while providing improved fuel economy and lower emissions.

## Hydrocarbons

Compounds containing various combinations of hydrogen and carbon atoms. They may be emitted into the air by natural sources (e.g., trees) and as a result of fossil and vegetative fuel combustion, fuel volatilization and solvent use. Hydrocarbons are a major contributor to [smog](#). (See also [Reactive Organic Gases](#)).

## Hydrogen Sulfide (H<sub>2</sub>S)

A colorless, flammable, poisonous compound having a characteristic rotten-egg odor. It is used in industrial processes and may be emitted into the air.

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# I

## ICAT (Innovative Clean Air Technologies program)

ICAT is an ARB program that co-funds the demonstration of innovative technologies that can reduce air pollution. Its purpose is to advance such technologies toward commercial application, thereby reducing emissions and helping the economy of California.

## Incremental Reactivity (IR)

The additional [ozone](#) formed in the [atmosphere](#) with the incremental addition of a certain amount of a [volatile organic compound](#).

## Incineration

The act of burning a material to ashes.

## 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. [Indirect source](#) control programs include regulatory strategies such as transportation control measures (e.g., South Coast's Regulation XV for employer-based trip reduction); parking charges; land use controls that reduce the need for vehicle travel and increase transit, bicycle and pedestrian access; and, source-specific regulations such as truck idling and travel schedule requirements.

## Indirect Source Review

A major component of an [indirect source](#) control program which applies to new and modified indirect sources. Strategies for indirect source review include permit programs, review and comment on new and modified indirect source projects through the [California Environmental Quality Act \(CEQA\)](#) process and coordination of air quality, transportation and land use policies through local government general plans. Indirect source review reduces emissions from new and modified sources through best available mitigation measures and additional offsite mitigation such as offsets and mitigation fees.

## Individual Cancer Risk

The probability, expressed as chances in a million, that a person experiencing 70 years of continuous area-wide outdoor exposure to a toxic air contaminant will develop cancer.

## Indoor Air Pollution

Air pollutants that occur within buildings or other enclosed spaces, as opposed to those occurring in outdoor, or ambient air. Some examples of indoor air pollutants are nitrogen oxides, smoke, asbestos, formaldehyde and carbon monoxide. For more information, visit our [indoor air quality](#) website.

## Industrial Source

Any of a large number of sources -- such as manufacturing operations, oil and gas refineries, food processing plants and energy generating facilities -- that emit substances into the atmosphere.

## Inert Gas

A gas that does not react with the substances coming in contact with it.

## Inspection and Maintenance Program (I/M Program)

A motor vehicle inspection program implemented by the [California Bureau of Automotive Repair](#). The purpose of the I/M is to reduce emissions by assuring that cars are running properly. 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.)

## Integrated Sampling Device

An air sampling device that allows estimation of air quality components over a period of time through laboratory analysis of the sampler's medium. (See also [Continuous Sampling Device](#).)

## Internal Combustion Engine

An engine in which both the heat energy and the ensuing mechanical energy are produced inside the engine. Includes gas turbines, spark ignition gas and compression ignition diesel engines.

## International Agency for Research on Cancer (IARC)

An expert international agency of the World Health Organization which publishes evaluations of evidence on the carcinogenicity of a wide range of chemicals. For more information, visit our [IARC](#) website.

## Inversion

A layer of warm air in the atmosphere that prevents the rise of cooling air and traps pollutants beneath it.

## Intergovernmental Panel on Climate Change (IPCC)

A scientific intergovernmental body set up by the World Meteorological Organization (WMO) and by the United Nations Environment Programme (UNEP) to provide the decision-makers and others interested in climate change with an objective source of information about climate change.

## Investor Owned Utilities (IOUs)

Private companies that provide a utility, such as water, natural gas or electricity, to a specific service area.

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## L

### Lead

A gray-white metal that is soft, malleable, ductile and resistant to corrosion. Sources of lead resulting in concentrations in the air include industrial sources and crustal weathering of soils followed by [fugitive dust](#) emissions. Health effects from exposure to lead include brain and kidney damage and learning disabilities. Lead is the only substance which is currently listed as both a [criteria air pollutant](#) and a [toxic air contaminant](#).

### Leakage

A reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside the state.

### Light-Duty Vehicle (LDV)

Any motor vehicle with a gross vehicle weight of 6,000 pounds or less.

### Limit of Detection (LOD)

The lowest concentration of a substance that can be reliably measured.

## Liquefied Natural Gas (LNG)

(See [Alternative Fuels](#).)

## Liquefied Petroleum Gas (LPG)

(See [Alternative Fuels](#).)

## Low Carbon Fuels Standard (LCFS)

LCFS is a discreet early action measure of the [Global Warming Solutions Act](#) of 2006. This regulation reduces the carbon intensity (greenhouse gas emissions per unit of energy in the fuel) of transportation fuels by 10 percent by 2020.

## Low Emission Vehicle (LEV)

A vehicle that meets the ARB's low emission vehicle standards. For more information, please go to our [low emission vehicle](#) website.

## Low Emission Vehicle II (LEV II)

California exhaust emission standards for 2004 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles. Find more information at "[Drive Clean](#)."

## Lowest Achievable Emission Rate (LAER)

Under the [Clean Air Act](#), the rate of emissions that reflects, the most stringent emission limitation in the [State Implementation Plan](#) of any state for a given source unless the owner or operator demonstrates such limitations are not achievable; or, the most stringent emissions limitation achieved in practice, whichever is more stringent.

## Low NOx Burners

One of several [combustion](#) technologies used to reduce emissions of [nitrogen oxides](#).

## Lubricity

A measure of the ability of an oil or other compound to lubricate (reduce friction) between two surfaces in contact.

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# M

## Major Source

A stationary facility that emits a regulated pollutant in an amount exceeding the threshold level depending on the location of the facility and attainment with regard to air quality status. (See [Source](#).)

## Market-Based Approaches

A system of market-based declining annual aggregate emissions limitations for sources, or categories of sources, that emit greenhouse gases. Market-based can also refer to greenhouse gas emissions exchanges, banking, credits and other transactions, governed by rules and protocols established by the ARB, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the ARB.

## Maximum Achievable Control Technology (MACT)

Federal emissions limitations based on the best demonstrated control technology or practices in similar sources to be applied to major sources emitting one or more federal [hazardous air pollutants](#). For more information, visit our [Title III](#) website.

## Maximum Incremental Reactivity (MIR)

A measure of the increase in [ozone](#) formation per unit weight of a [hydrocarbon](#) when added to the [atmosphere](#).

## Mean

Average.

## Median

The middle value in a population distribution, above and below which lie an equal number of individual values; midpoint.

## Melting Point

The temperature at which a solid becomes a liquid. At this temperature, the solid and the liquid have the same vapor pressure.

## Mesosphere

The layer of the Earth's [atmosphere](#) above the [stratosphere](#) and below the [thermosphere](#). It is between 35 and 60 miles from the Earth.

## Methyl Tertiary Butyl Ether (MTBE)

An ether compound added to gasoline to provide oxygen and enhance complete [combustion](#). MTBE has been phased out of California's gasoline. See our fuels website, for more [information](#).

## Military Personnel

Active duty members of the U.S. armed forces or reserves assigned to California facilities and active duty.

## Miscible

Capable of being mixed with other substances.

## MMTCO<sub>2</sub>E

Million metric tons of [carbon dioxide](#) equivalents.

## Mobile Sources

Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes. (See also [stationary sources](#).) For more information, please go to our [mobile sources](#) portal page.

## Monitoring

The periodic or continuous sampling and analysis of air pollutants in ambient air or from individual pollution sources.

## Motor Vehicle Fee Program

See [AB 2766](#).

## Morbidity

Rate of disease incidence.

## Mortality

Death rate.

## Multimedia Exposure

Exposure to a toxic substance from multiple pathways such as air, water, soil, food and breast milk.

## Mutagenic

The ability of a chemical or physical agent to produce heritable changes in the DNA of living cells.

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# N

## National Ambient Air Quality Standards (NAAQS)

Standards established by the U.S. EPA that apply for outdoor air throughout the country. There are two types of NAAQS. Primary standards set limits to protect public health and secondary standards set limits to protect public welfare. For more information, visit our [AAQS](#) website.

## NESHAP

The National Emissions Standards for Hazardous Air Pollutants (NESHAPs) are set by the U.S. EPA for an air pollutant not covered by [National Ambient Air Quality Standards](#) that may cause an increase in fatalities or in serious, irreversible, or incapacitating illness.

## Natural Sources

Non-manmade emission sources, including biological and geological sources, wildfires and windblown dust.

## New Solar Home Partnership (NSHP)

Part of the comprehensive statewide solar program. The NSHP program provides financial incentives and other support to home builders, encouraging the construction of new, energy efficient solar homes that save homeowners money on their electric bills and protect the environment.

## New Source Performance Standards (NSPS)

Uniform national U.S. EPA air emission standards that limit the amount of pollution allowed from new sources or from modified existing sources. For more information, see our [Title V](#) website.

## New Source Review (NSR)

[A Clean Air Act](#) requirement that State Implementation Plans must include a permit review, which applies to the construction and operation of new and modified stationary sources in [nonattainment areas](#), to ensure attainment of [National Ambient Air Quality Standards](#). The two major requirements of NSR are [Best Available Control Technology](#) and [Emission Offsets](#). For more information, see our [New Source Review](#) website.

## New Vehicle



Any vehicle transferred with less than 7,500 miles, or any vehicle that has not yet been issued a title (regardless of mileage).

## NIST Cert of Standards

The [National Institute of Standards and Technology \(NIST\)](#) provides standard reference materials used to confirm the accuracy and traceability of standards for calibrating instrumentation used to measure atmospheric concentrations of air pollutants.

## Nitric Oxide (NO)

A Precursor of [ozone](#), NO<sub>2</sub> and nitrate; nitric oxide is usually emitted from [combustion](#) processes. Nitric oxide is converted to nitrogen dioxide (NO<sub>2</sub>) in the [atmosphere](#) and then becomes involved in the photochemical processes and/or particulate formation. (See [Nitrogen Oxides](#).)

## Nitrogen Oxides (Oxides of Nitrogen, NOx)

A general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>) and other oxides of nitrogen. [Nitrogen oxides](#) are typically created during [combustion](#) processes and are major contributors to [smog](#) formation and [acid deposition](#). NO<sub>2</sub> is a [criteria air pollutant](#) and may result in numerous [adverse health effects](#).

## NOA

Naturally occurring asbestos (NOA) is the six asbestos minerals that have been identified as toxic air contaminants and occur naturally in rocks and soils. During many earth-disturbing activities, asbestos minerals may be released from rocks and soils, become airborne and inhaled deep into the lung.

## Nonattainment Area

A geographic area identified by the [U.S. EPA](#) and/or [ARB](#) as not meeting either [NAAQS](#) or [CAAQS](#) standards for a given pollutant. For more information, visit our [designated areas](#) website.

## Nonattainment Transitional

A subcategory of the [nonattainment](#) designation category for state standards that signals progress and implies the area is nearing attainment. Districts with nonattainment-transitional status may revise their attainment plans to delay adoption of control measures anticipating attainment without the measures.

## Non-carcinogenic Effects

Non-cancer health effects which may include birth defects, organ damage, morbidity and death.

## Non-Industrial Source

Any of a large number of sources -- such as mobile, area-wide, indirect and natural sources -- which emit substances into the [atmosphere](#).

## Non-Methane Hydrocarbon (NMHC)

The sum of all [hydrocarbon](#) air pollutants except methane. NMHCs are significant precursors to [ozone](#) formation.

## Non-Methane Organic Gas (NMOG)

The sum of [non-methane hydrocarbons](#) and other organic gases such as aldehydes, ketones and ethers.

## Non-Point Sources

Diffuse pollution sources that are not recognized to have a single point of origin.

## Non-Road Emissions

Pollutants emitted by a variety of non-road sources such as farm and construction equipment, gasoline-powered lawn and garden equipment, power boats and outboard motors. For more information, see our [offroad](#) website.

## No-Observed-Adverse-Effect-Level (NOAEL)

A term used in risk assessment. An exposure level at which there are no statistically or biologically significant increases in the frequency or severity of adverse effects between an exposed population and a comparable non-exposed population.

## No-Observed-Effect-Level (NOEL)

A term used in risk assessment. An exposure level at which there are no statistically or biologically significant difference or severity of any effect between an exposed population and a comparable non-exposed population.

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# O

## Octane Number

A numerical measure of the antiknock properties of gasoline used as a motor fuel. The higher the octane number, the greater the antiknock properties.

## Office of Environmental Health Hazard Assessment (OEHHA)

A department within the California Environmental Protection Agency that is responsible for evaluating chemicals for adverse health impacts and establishing safe exposure levels. OEHHA also assists in performing health risk assessments and developing risk assessment procedures for air quality management purposes. Visit the [OEHHA's](#) home page.

## Offsets

Offsets are tradable credits that represent greenhouse gas emissions reductions that are made in areas or sectors not covered by a cap-and-trade program. Under a greenhouse gas [cap-and-trade program](#), covered entities could buy [offset credits](#) in lieu of buying [allowances](#) or reducing their greenhouse gas emissions on-site. One offset credit would be equal to one metric ton of greenhouse gas emissions. Offsets must meet rigorous criteria that demonstrate that the emissions reductions are real, permanent, verifiable, enforceable and quantifiable.

## Olefin

A class of unsaturated [hydrocarbons](#) having the general formula  $C_nH_{2n}$ . Olefins in gasoline are responsible for the formation of deposits in storage tanks, fuel ducts and injectors. Therefore, their volume is limited by the reformulated gasoline regulation.

## Onboard Diagnostics (OBD)

Devices that are incorporated into the computer systems of new motor vehicles to monitor components and systems that affect emissions when malfunctioning. If a problem is detected, the OBD system illuminates a warning lamp on the vehicle instrument panel to alert the driver. This warning lamp typically contains the phrase Check Engine or Service Engine Soon. The system will also store important information about the detected malfunction so that a repair technician can accurately find and fix the problem. For more information, visit our [on-board diagnostics](#) website.

## Onboard Vapor Recovery

Devices placed on vehicles to capture gasoline vapor during refueling and then route the vapors to the engine when the vehicle is started so that they can be efficiently burned.

## On-Road, On-Road Vehicle

Vehicles that are intended by their manufacturer for use on public highways. On-road vehicles must be certified by their manufacturer with the U.S. Department of Transportation (DOT), National Highway Traffic Administration (NHTSA), as compliant with on-highway safety standards as well as certified to all applicable ARB and U.S. EPA on-road emission standards. Compliance with these standards is indicated by separate safety and emissions labels on the vehicle.

## Opacity

The amount of light obscured by particle pollution in the atmosphere. Opacity is used as an indicator of changes in performance of particulate control systems.

## Organic Compounds

A large group of chemical compounds containing mainly carbon, hydrogen, nitrogen and oxygen. All living organisms are made up of organic compounds.

## Outer Continental Shelf (OCS)

The OCS is all submerged lands lying seaward of state coastal waters (3 miles offshore) which are under U.S. jurisdiction.

## Oxidant

A substance that brings about oxidation in other substances. Oxidizing agents (oxidants) contain atoms that have suffered electron loss. In oxidizing other substances, these atoms gain electrons. **Ozone**, which is a primary component of **smog**, is an example of an oxidant.

## Oxidation

The chemical reaction of a substance with oxygen or a reaction in which the atoms in an element lose electrons and its valence is correspondingly increased.

## Oxygenate

An organic molecule that contains oxygen. Oxygenates are typically ethers and alcohols. The most common oxygenate is ethanol in gasoline, which now runs about 10 percent by volume. The purpose of the oxygenate is to help the gasoline burn more completely, reducing carbon monoxide emissions. This is especially important during the winter months.

## 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 and **ozone precursors**, such as **hydrocarbons** and **oxides of nitrogen**. Ozone exists in the upper **atmosphere ozone layer** (stratospheric ozone) as well as at the Earth's surface in the troposphere (ozone). Ozone in the troposphere causes numerous **adverse health effects** and is a **criteria air pollutant**. It is a major component of **smog**.

## Ozone Depletion

The reduction in the stratospheric ozone layer. Stratospheric ozone shields the Earth from ultraviolet radiation. The breakdown of certain chlorine and/or bromine-containing compounds that catalytically destroy ozone molecules in the stratosphere can cause a reduction in the ozone layer. For more information, go to **U.S. EPA's** website on this subject.

## Ozone-Forming Potential

(See [Reactivity](#).)

## Ozone Generator

Some indoor "air purifiers" or air cleaners emit ozone, a major component of outdoor smog, either intentionally or as a by-product of their design. Those that intentionally emit ozone are often called "ozone generators."

## Ozone Layer

A layer of ozone in the lower portion of the [stratosphere](#) -- 12 to 15 miles above the Earth's surface -- which helps to filter out harmful ultraviolet rays from the sun. It may be contrasted with the ozone component of photochemical [smog](#) near the Earth's surface, which is harmful.

## Ozone Precursors

Chemicals such as [non-methane 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](#).

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# P

## Partial Zero Emission Vehicle (PZEV)

Vehicles that meet the ARB super ultra low emissions standard, have zero evaporative emissions and have a 15 year/150,000 mile warranty. See our [Drive Clean](#) website.

## Particulate Matter (PM)

Any material, except pure water, that exists in the solid or liquid state in the [atmosphere](#). The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle [combustion](#) products. For more information, see ARB's [PM brochure](#).

## Peak Levels

A level of airborne pollutants that is much higher than average. They can occur over a short period of minutes or hours in response to sudden releases, or they can occur due to a longer term build-up over several days.

## Perchloroethylene (Perc)

The substance with the chemical formula 'C<sub>2</sub>Cl<sub>4</sub>,' also known by the name 'tetrachloroethylene' which has been identified by the ARB and listed as a toxic air contaminant (title 17, California Code of Regulations, section 93000).

## Periodic Smoke Inspection Program (PSIP)

Regulation requiring fleet owners of two or more heavy-duty diesel powered trucks or buses to perform annual smoke opacity inspections on each vehicle's engine that is four years old or older. Engines that exceed opacity standards must be repaired to be brought into compliance. Fleet owners must keep records of the annual smoke test for two years and make these records available to ARB upon request.

## 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. For more information, visit our [permitting activities](#) portal page.

## Permit to Operate (P/O)

An operational permit issued yearly by an [air district](#) to [sources](#) that meet specified regulations.

## Peroxyacetyl Nitrate (PAN)

A group of compounds formed from the photochemical reactions of nitrogen and organic compounds. PANs are components of smog and known to cause eye irritation.

## Persistence

Refers to the length of time a compound stays in the [atmosphere](#), once introduced. A compound may persist for less than a second or indefinitely.

## Personal Watercraft (PWC)

Watercraft that do not have outboard, inboard, or stern drive engines. This encompasses the watercraft typically referred to as Jet Skis, Waverunners, etc. For more information, see our [recreational marine](#) website.

## Photochemical Reaction

A term referring to chemical reactions brought about by the light energy of the sun. The reaction of [nitrogen oxides](#) with [hydrocarbons](#) in the presence of sunlight to form [ozone](#) is an example of a photochemical reaction.

## Photolysis

Chemical decomposition induced by light or other energy.

## Plug-in Hybrid Electric Vehicle (PHEV)

A vehicle that is similar to traditional hybrids but is also equipped with a larger, more advanced battery that allows the vehicle to be plugged in and recharged in addition to refueling with gasoline. This larger battery allows you to drive on a combination of electric and gasoline fuels. See our [Drive Clean](#) website.

## Plume

A visible or measurable discharge of a contaminant from a given point of origin that can be measured according to the Ringelmann scale. (See [Ringelmann Chart](#).)

## PM

See [Particulate Matter](#).

## PM2.5

Includes tiny particles with an aerodynamic diameter less than or equal to a nominal 2.5 microns. This fraction of particulate matter penetrates most deeply into the lungs. For more information, see our [particulate matter](#) website.

## PM10 (Particulate Matter)

A criteria air pollutant consisting of small particles with an aerodynamic diameter less than or equal to a nominal 10 microns (about 1/7 the diameter of a single human hair). Their small size allows them to make their way to the air sacs deep within the lungs where they may be deposited and result in [adverse health effects](#). PM10 also causes [visibility](#) reduction. For more information, see our [particulate matter brochure](#).

## Point Sources

Specific points of origin where pollutants are emitted into the [atmosphere](#) such as factory smokestacks. (See also [Area-Wide Sources](#) and [Fugitive Emissions](#).)

## Pollutant Standards Index (PSI)

A numerical index formerly used for reporting severity of air pollution levels to the general public. The PSI incorporated the five criteria pollutants -- [ozone](#), [PM10](#), [carbon monoxide](#), [sulfur dioxide](#) and nitrogen dioxide -- into one single index. The PSI was based on the 1-hour ozone standard. PSI levels ranged from 0 (Good air quality) to 500 (Hazardous air quality). The higher the index, the higher the level of pollutants and the greater likelihood of health effects. For more information, see our [Air Quality Index](#) website.

## Pollution Prevention

The use of materials, processes, or practices to reduce, minimize, or eliminate the creation of pollutants or wastes. It includes practices that reduce the use of toxic or hazardous materials, energy, water and/or other resources. For more information, see our [Pollution Prevention Program](#) website.

## Polycyclic Aromatic Hydrocarbons (PAHs)

Organic compounds which include only carbon and hydrogen with a fused ring structure containing at least two benzene (six-sided) rings. PAHs may also contain additional fused rings that are not six-sided. The combustion of organic substances is a common source of atmospheric PAHs.

## Polymer

Natural or synthetic chemical compounds composed of up to millions of repeated linked units, each of a relatively light and simple molecule.

## Positive Crankcase Ventilation (PCV)

An emission control system for a reciprocating internal combustion engine that involves recirculating gases that blow by the piston rings during combustion from the crankcase back into the intake manifold so they can be more completely burned.

## POTW

Publically Owned Treatment Works (POTW) are facilities designed to collect, transmit and treat wastewater that may be generated by industrial, commercial and/or domestic sources. Treatment works include the wastewater treatment units themselves, as well as intercepting sewers, outfall sewers, sewage collection systems, pumping, power and other equipment.

## Precipitator

Pollution control device that collects particles from an air stream. (See [Electrostatic Precipitator](#).)

## Prescribed Burning

The planned application of fire to vegetation to achieve any specific objective on lands selected in advance of that application. In California, prescribed burning is governed under the [Agricultural Burning Guidelines](#).

## Prevention of Significant Deterioration (PSD)

A permitting program for new and modified stationary sources of air pollution located in an area that attains or is unclassified for national ambient air quality standards ([NAAQS](#)). The PSD program is designed to ensure that air quality does not degrade beyond those air quality standards or beyond specified incremental amounts. The PSD permitting process requires new and modified facilities above a specified size threshold to be carefully reviewed prior to construction for air quality impacts. PSD also requires those

facilities to apply [BACT](#) to minimize emissions of air pollutants. A public notification process is conducted prior to issuance of final PSD permits.

## Primary Particles

Particles that are directly emitted from combustion and fugitive dust sources. (Compare with [Secondary Particle](#).)

## Propellant

A gas with a high vapor pressure used to force formulations out of aerosol spray cans. Among the gases used are butanes, propanes and nitrogen.

## Proposition 65

Safe Drinking and Toxic Enforcement Act of 1986, also known as Proposition 65. This act is codified in California Health and Safety Code section 25249.5, et seq. No person in the course of doing business shall knowingly discharge or release a chemical known to the state to cause cancer or reproductive toxicity into water or into land where such chemical passes or probably will pass into any source of drinking water, without first giving clear and reasonable warning to such individual. For more information, visit the OEHHA's [Prop 65](#) website.

## Public Owned Utilities (POUs)

Non-profit utility providers owned by a community and operated by municipalities, counties, states, public power districts, or other public organizations. Within POUs, residents have a say in decisions and policies about rates, services, generating fuels and the environment.

## 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.

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# R

## Radon

A colorless, naturally occurring, radioactive, inert gaseous element formed by radioactive decay of radium atoms in soil or rocks.

## Reactive Organic Gas (ROG)

A photochemically reactive chemical gas, composed of [non-methane hydrocarbons](#), that may contribute to the formation of [smog](#). Also sometimes referred to as [Non-Methane Organic Gases \(NMOGs\)](#). (See also [Volatile Organic Compounds](#) and [Hydrocarbons](#).)

## Reactivity (or Hydrocarbon Photochemical Reactivity)

A term used in the context of air quality management to describe a hydrocarbon's ability to react (participate in photochemical reactions) to form [ozone](#) in the [atmosphere](#). Different hydrocarbons react at different rates. The more reactive a hydrocarbon, the greater potential it has to form ozone.

## Reasonably Available Control Measures (RACM)

A broadly defined term referring to technologies and other measures that can be used to control pollution. They include [Reasonably Available Control Technology](#) and other measures. In the case of [PM10](#), RACM

refers to approaches for controlling small or dispersed source categories such as road dust, woodstoves and open burning.

## Reasonably Available Control Technology (RACT)

Control techniques defined in [U.S. EPA](#) guidelines for limiting emissions from existing sources in [nonattainment](#) areas. RACTs are adopted and implemented by states. For more information, visit our [RACT](#) website.

## Reasonably Available Retrofit Control Technology (RARCT)

(See also [Best Available Control Technology](#).)

## Reciprocating Internal Combustion Engine

An engine in which air and fuel are introduced into cylinders, compressed by pistons and ignited by a spark plug or by compression. Combustion in the cylinders pushes the pistons sequentially, transferring energy to the crankshaft, causing it to rotate.

## Reference Dose (RfD)

An estimate delivered by the [U.S. EPA](#) (with uncertainty spanning perhaps an order of magnitude) of the daily [exposure](#) to the human population, (including sensitive subpopulations) that is likely to be without deleterious effects during a lifetime. The RfD is reported in units of mg of substance/kg body weight/day for oral exposures.

## Reference Exposure Concentration (RfC)

An estimate, derived by the [U.S. EPA](#) with an uncertainty spanning perhaps an order of magnitude) of a daily [exposure](#) to the human population, (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a lifetime of exposure. The RfC is derived from a no or lowest observed adverse effect level from human or animal exposures, to which uncertainty or "safety" factors are applied.

## Reference Exposure Level (REL)

A term used in risk assessment. It is the concentration at or below which no adverse health effects are anticipated for a specified exposure period.

## Refinery

A facility that produces liquid fuels by distilling petroleum.

## Reformulated Gasoline (RFG)

Also called [Cleaner Burning Gasoline \(CBG\)](#). Gasoline with a different composition from conventional gasoline (e.g., lower [aromatics](#) content) that results in the production of lower levels of air pollutants. For more information, see our [cleaner burning gasoline](#) website.

## Reformulated Gasoline Predictive Model

A set of mathematical equations that predict the emissions likely to occur from the [combustion](#) of a given formulation of gasoline. For more information, see our [predictive model](#) website area.

## Reforestation

Establishing native tree cover on lands that were previously forested, but that have had less than 10 percent tree canopy cover for a minimum time of 10 years.

## Regional Haze



The haze produced by a multitude of sources and activities which emit fine particles and their precursors across a broad geographic area. National regulations require states to develop plans to reduce the regional haze that impairs visibility in national parks and wilderness areas.

### **Registration Stop (or VLT Stop)**

A hold placed on a motor vehicle or motor vehicle engine to prevent registration or title being issued. Registration stops may be placed by DMV, ARB or CHP staff. Stops are placed because of illegal registration attempts, illegal sales, or placed on heavy-duty vehicles that have been retired by their previous owners. Registration stops do not expire; however, a vehicle with a stop may be dropped from the DMV computer record after 7-10 years.

### **Reid Vapor Pressure (RVP)**

Refers to the vapor pressure of the fuel expressed in the nearest hundredth of a pound per square inch (psi) with a higher number reflecting more gasoline evaporation. (See also [Gasoline Volatility](#).)

### **Renewable Fuel Standard (RFS)**

A federal program to increase the volume of renewable fuels used in transportation fuels. Created under the Energy Policy Act of 2005, and revised by the Energy Independence and Security Act of 2007, the RFS program requires increasing annual volumes of renewable fuel, starting from 9 billion gallons in 2008 to 36 billion gallons by 2022. Within those total volumes, the RFS also requires certain volumes of specific fuels, such as cellulosic and advanced biofuels.

### **Ringelmann Chart**

A series of charts, numbered 0 to 5, that simulate various [smoke](#) densities by presenting different percentages of black. A Ringelmann No. 1 is equivalent to 20 percent black; a Ringelmann No. 5 is 100 percent black. They are used for measuring the [opacity](#) or equivalent obscuration of smoke arising from stacks and other [sources](#) by matching the actual effluent with the various numbers, or densities, indicated by the charts.

### **Research Screening Committee (RSC)**

The Board's legislatively mandated committee consists of scientists, engineers and others knowledgeable, technically qualified and experienced in air pollution problems. The committee meets approximately four times a year to review proposed and completed research projects.

### **Residual Risk**

The quantity of health risk remaining after application of emission control.

### **Risk Assessment**

An evaluation of risk which estimates the relationship between exposure to a harmful substance and the likelihood that harm will result from that exposure.

### **Risk Management**

An evaluation of the need for and feasibility of reducing risk. It includes consideration of magnitude of risk, available control technologies and economic feasibility.

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## **S**

### **Sanctions**

Actions taken against a state or local government by the federal government for failure to plan or to implement a [State Implementation Plan \(SIP\)](#). Examples include withholding of highway funds and a ban on construction of new [sources](#) of potential pollution.

## **SB 25 (Children's Environmental Health Protection Act)**

Changes to state law (Senate Bill 25, Escutia, 1999) established requirements for the ARB and the OEHHA to examine the impacts of air pollution on children's health. Specifically, the act required the state to evaluate all ambient air quality standards to determine whether these standards adequately protect human health, particularly that of infants and children; and, to identify toxic air contaminants that disproportionately impact children.

## **Scientific Review Panel (SRP)**

Mandated by [AB 1807](#), this nine-member panel advises the [ARB](#), [OEHHA](#) and the California Department of Pesticide Regulation on the scientific adequacy of the risk assessment portion of reports issued by those three agencies in the process of identifying substances as [toxic air contaminants](#). For more information, visit our [SRP](#) website.

## **Scoping Plan**

[AB 32](#) directed ARB to prepare a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions by 2020. The scoping plan provides the outline for actions to reduce greenhouse gases in California. The approved scoping plan indicates how these emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

## **Scrubber**

An air pollution control device that uses a high energy liquid spray to remove [aerosol](#) and gaseous pollutants from an air stream. The gases are removed either by absorption or chemical reaction.

## **Secondhand Smoke**

[Environmental tobacco smoke \(ETS\)](#), or secondhand smoke, is a complex mixture of thousands of gases and fine particles emitted by the burning of tobacco products from the smoke exhaled by the smoker. Other minor contributors to ETS are from the smoke that is emitted from the smoldering end of the tobacco product and the vapor-phase related compounds that diffuse from the wrapper of the tobacco product.

## **Secondary Particle**

Particles that are formed in the atmosphere. Secondary particles are products of the chemical reactions between gases, such as nitrates, [sulfur oxides](#), ammonia and organic products.

## **Senate Bill 1731 (Calderon, 1993)**

SB 1731 amended the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, "Hot Spots" or Program; 1987, Connelly) by adding two major elements. The first element required the [OEHHA](#) to adopt risk assessment guidelines for the program using a full public review process. These new risk assessment guidelines superseded the previous guidelines and include "supplemental" exposure information. Second, facilities determined to have a significant risk by the district, must conduct an airborne toxic risk reduction audit and develop a plan to implement airborne toxic risk reduction measures. The ARB is required to provide assistance to smaller businesses for developing and applying risk reduction techniques. As part of that assistance, the ARB developed guideline documents on how to conduct an audit, including a self-conducted checklist for certain industries.

## **Selective Catalytic Reduction (SCR) System**

An emission control system that reduces NO<sub>x</sub> emissions through the catalytic reduction of NO<sub>x</sub> in diesel exhaust to N<sub>2</sub> and H<sub>2</sub>O by injecting nitrogen-containing compounds into the exhaust stream, such as ammonia or urea.

## Sensitive Groups

Identifiable subsets of the general population that are at greater risk than the general population to the toxic effects of a specific air pollutant (e.g., infants, asthmatics, elderly).

## Sequestration

see [Carbon Sequestration](#).

## SF6 (Sulfur Hexafluoride)

SF<sub>6</sub> is a colorless, non-toxic and non-flammable gas under standard conditions. It is used in many applications including as a gaseous dielectric medium in the electrical industry, an inert gas for the casting of magnesium, a tracer gas and an etchant in the semiconductor industry. SF<sub>6</sub> is the most potent greenhouse gas with a global warming potential of 23,900 times that of carbon dioxide when compared over a 100-year period.

## Shore Power

"Shore power", also known as [Cold Ironing](#), refers to providing electrical power to a vessel that is docked. The purpose of shore power is to allow the vessel operator to turn off the vessel's auxiliary engines, which would normally be providing the necessary electricity. Although there are emissions associated with the generation of electricity used for shore power, those emissions are much less than those from the auxiliary engines, which burn diesel fuel.

## Smog

A combination of smoke and other particulates, [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.

## Smog Check Program

(See [Inspection and Maintenance Program](#)).

## Smog Score

A score that ranks each vehicle's smog emissions on a scale of 1-10 (10 being the cleanest) relative to all other vehicles. All vehicles manufactured after January 1, 2009, must display this score on the Environmental Performance Label. For more information, visit our [Drive Clean](#) website.

## Smoke

A form of air pollution consisting primarily of [particulate matter](#) (i.e., particles released by combustion). 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.

## Solvent Base

[Hydrocarbon](#)-containing compounds such as paint thinner used for the purpose of thinning various types of [coatings](#) such as paint.

## Soot

Very fine carbon particles that have a black appearance when emitted into the air.

## Source

Any place or object from which air pollutants are released. Sources that are fixed in space are [stationary sources](#) and sources that move are [mobile sources](#).

## Speciation

Speciation is the analytical activity of identifying and/or measuring the quantities of one or more individual chemical species in a sample.

## Spray Booth

A power ventilated structure enclosing a coating operation, to confine and limit the escape of spray, vapor and residue and to safely conduct or direct them to an exhaust system. The spray booth contains and captures particulate emissions and vents them to a control device.

## Stakeholders

Residents, environmentalists, businesses and government representatives that have a stake or concern about how air quality is managed.

## State Implementation Plan (SIP)

A plan prepared by states and submitted to U.S. EPA describing how each area will attain and maintain national [ambient air quality standards](#). SIPs include the technical foundation for understanding the air quality (e.g., emission inventories and air quality monitoring), control measures and strategies and enforcement mechanisms. (See also [AQMP](#).) For more information, visit our [SIP](#) website.

## Stationary Sources

Non-mobile sources such as power plants, refineries and manufacturing facilities which emit air pollutants.

## Storage Tank

Any stationary container, reservoir, or tank, used for storage of liquids.

## Stratosphere

The layer of the Earth's [atmosphere](#) above the [troposphere](#) and below the [mesosphere](#). It extends between 10 and 30 miles above the Earth's surface and contains the [ozone](#) layer in its lower portion. The stratospheric layer mixes relatively slowly; pollutants that enter it may remain for long periods of time.

## Suggested Control Measure (SCM)

A model rule developed by air quality managers for local [air districts](#) to use to control the emissions from certain [stationary sources](#) of air pollution.

## Sulfates

(See [Sulfur Oxides](#).)

## Sulfur Dioxide (SO<sub>2</sub>)

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 SO<sub>2</sub> and other sulfur oxides contribute to the problem of acid deposition. SO<sub>2</sub> is a [criteria air pollutant](#).

## Sulfur Oxides

Pungent, colorless gases (sulfates are solids) formed primarily by the [combustion](#) of sulfur-containing [fossil fuels](#), especially coal and oil. Considered major air pollutants, sulfur oxides may impact human health and damage vegetation.

## Super Ultra Low Emission Vehicle (SULEV)

A vehicle that meets the ARB's super ultra-low emission vehicle standard of 0.03 grams per mile of [NMOG](#) + [NOx](#). See our [Drive Clean](#) website.

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# T

## Terminal

An intermediate gasoline distribution facility where delivery of gasoline to and from the facility is solely by pipeline.

## Thermal Spraying

A process in which metallic or nonmetallic materials are heated to a molten or nearly molten state and are sprayed onto a surface to form a coating. The material may originate in the form of powder, rod, or wire before it is heated, prior to spraying and deposition. Materials can be heated by combustion of fuel gases (similar to welding) or by using electricity. Thermal spraying includes processes such as flame spraying, plasma spraying, high velocity oxyfuel (HVOF) spraying and twin wire electric arc spraying.

## Thermosphere

The outermost layer of the Earth's [atmosphere](#) extending from about 60 miles to several hundred miles above the planet's surface. The temperature of this layer varies from many hundreds to thousands of degrees Celsius.

## Title III

A section of the 1990 amendments to the federal [Clean Air Act](#) that addresses the control of toxic air emissions. For more information, visit our [Title III](#) website.

## Title V

A section of the 1990 amendments to the federal [Clean Air Act](#) that requires a federally enforceable operating permit for [major sources](#) of air pollution. For more information, visit our [Title V](#) website.

## Topography

The configuration of a surface, especially the Earth's surface, including its relief and the position of its natural and man-made features.

## Total Organic Gases (TOG)

Gaseous organic compounds, including [reactive organic gases](#) and the relatively unreactive organic gases such as methane.

## Total Suspended Particulate (TSP)

Particles of solid or liquid matter -- such as soot, dust, aerosols, fumes and mist -- up to approximately 30 microns in size.

## Toxic Air Contaminant (TAC)

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 [CAAQSS](#). Health effects 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. For more information, visit our [toxics](#) website.

## Toxic Best Available Control Technology (T-BACT)

The most effective emission limitation or control technique which has been achieved in practice or found by the ARB Executive Officer or Air Pollution Control Officer of the local districts to be technologically feasible.

## Toxic Hot Spot

A location where emissions from specific sources may expose individuals and population groups to elevated risks of [adverse health effects](#) -- including but not limited to cancer -- and contribute to the cumulative health risks of emissions from other sources in the area. For more information, visit our [toxics hot spots](#) website.

## Transfer Efficiency

For [coatings](#), a measure of the percent of the total amount of coating used which is transferred to a unit surface by a spray gun or other device.

## Transport Refrigeration Unit (TRU)

Refrigeration systems powered by integral internal combustion engines designed to control the environment of temperature-sensitive products that are transported in trucks and refrigerated trailers. TRUs may be capable of both cooling and heating.

## 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.

## Troposphere

The layer of the Earth's [atmosphere](#) nearest to the surface of the Earth. The troposphere extends outward about five miles at the poles and about 10 miles at the equator.

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## U

### Ultra Low Emissions Vehicle (ULEV)

A vehicle that meets the ARB's ultra-low emission standards of 0.125 grams per mile of NMOG + NOx. The average 2010 car sold in California is a ULEV. See our [Drive Clean](#) website.

### Underground Storage Tank (UST)

Refers to tanks used to store gasoline underground. For more information, visit the [underground storage tank](#) website.

### United States Environmental Protection Agency (U.S. EPA)

The federal agency charged with setting policy and guidelines and carrying out legal mandates for the protection of national interests in environmental resources. For more information, visit the [U.S. EPA website](#).

## Unit Risk Number

The number of potential excess cancer cases from a lifetime [exposure](#) to one microgram per cubic meter ( $\mu/m^3$ ) of a given substance. For example, a unit risk value of  $5.5 \times 10^{-6}$  would indicate an estimated 5.5 cancer cases per million people exposed to an average concentration of  $1 \mu/m^3$  of a specific carcinogen for 70 years.

## Upstream Emissions

Emissions from processes that take place up to when the fuel enters a vehicle---typically during extraction, production, distribution and dispensing of the fuel.

## Urban Airshed Model

A three-dimensional photochemical grid model designed to calculate the concentrations of both inert and chemically reactive pollutants in the [atmosphere](#). It simulates the physical and chemical processes that affect pollution concentrations.

## Used Vehicle

Any vehicle that has been transferred after being issued a title and has over 7,500 miles. (Reference statute: H&S code 43150-43156.)

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# V

## Vapor

The gaseous phase of liquids or solids at atmospheric temperature and pressure.

## Vapor Density

The vapor density is expressed in grams per liter (g/L) and is compared to the density of air (air=1).

## Vapor Pressure

The pressure, often expressed in millimeters of mercury (mm Hg) or pounds per square inch (PSI), that is characteristic at any given temperature of a vapor in equilibrium with its liquid or solid form.

## Vapor Recovery Systems

Mechanical systems that collect and recover chemical vapors resulting from transfer of gasoline from operations such as tank-to-truck systems at refineries, tanker-to-pipeline systems at offshore oil operations and pump-to-vehicle systems at gasoline stations. For more information, visit our [vapor recovery](#) website.

## Variance

Permission granted for a limited time (under stated conditions) for a person or company to operate outside the limits prescribed in a regulation.

## Vehicle Miles Traveled (VMT)

The miles traveled by motor vehicles over a specified length of time (e.g., daily, monthly or yearly) or over a specified road or transportation corridor.

## Vessel Speed Reduction (VSR)

A way to reduce emissions of [NOx](#), [SOx](#), [diesel PM](#) and [CO<sub>2</sub>](#) from oceangoing vessels. Emissions are decreased when vessels slow their speeds, thereby reducing the energy requirements of the main engine. The Ports of Los Angeles (POLA), Long Beach (POLB), and San Diego (POSD) currently have a voluntary VSR program in place which requests that vessels slow to 12 knots from certain distances from port (20 nautical miles (nm) for POSD and 20 or 40 nm for POLA and POLB). Ports typically offer incentives for complying.

## Viscosity

The degree to which a fluid resists flow under an applied force.

## Visibility

A measurement of the ability to see and identify objects at different distances. Visibility reduction from air pollution is often due to the presence of sulfur and [nitrogen oxides](#), as well as [particulate matter](#).

## Visibility Reducing Particles (VRP)

Any particles in the [atmosphere](#) that obstruct the range of [visibility](#).

## Volatile

Any substance that evaporates readily.

## Volatile Organic Compounds (VOCs)

Carbon-containing compounds that evaporate into the air (with a few exceptions). 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.

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# W

## Water Base

Water used as the solvent for coatings such paint.

## Water Solubility

The solubility of a substance in water provides information on the fate and transport in the environment. The higher the water solubility, the greater the tendency to remain dissolved and the less likely to volatilize from the water. Low water soluble substances will volatilize more readily in water and will partition to soil or bioconcentrate in aquatic organisms.

## Weight of Evidence

The extent to which the available information supports the hypothesis that a substance causes an effect in humans. For example, factors which determine the weight-of-evidence that a chemical poses a hazard to humans include the number of tissue sites affected by the agent; the number of animal species, strains, sexes, relationship, statistical significance in the occurrence of the adverse effect in treated subjects compared to untreated controls; and, the timing of the occurrence of adverse effect.

## Welfare-Based Standard (Secondary Standard)

An air quality standard that prevents, reduces, or minimizes injury to agricultural crops and livestock, damage to and the deterioration of property and hazards to air and ground transportation.



## Well to Tank

Emissions associated with a fuel from extraction to the tank it sits in prior to entering a vehicle.

## Well to Wheels

Emissions associated with a fuel from extraction to when it enters and is used by a vehicle.

## Woodburning Pollution

Air pollution caused by woodburning stoves and fireplaces that emit [particulate matter](#), [carbon monoxide](#) and odorous and toxic substances. For more information, visit our [disposal of non-industrial wood waste](#) website.

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## Z

### Zero Emission Vehicle (ZEV)

Vehicles which produce no emissions from the on-board source of power (e.g., an electric vehicle). For more information, visit our [zero emission vehicles](#) program website or our [Drive Clean](#) website.

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*This gloss has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the ARB. Although the ARB has taken many steps to ensure that the information in this gloss is correct and up-to-date, readers should note that the codes are frequently amended, and the courts from time to time interpret their provisions. When necessary, readers should consult the official codes and handbooks or procure the services of an attorney. Copies of the California Codes can be found in each county's library and in law school libraries.*