

Air Quality Glossary of Terms

Area Sources - Small stationary sources of air pollutants such as dry cleaners, gas stations and auto body shops.

Carbon Dioxide (CO₂) - Most prevalent of the greenhouse gases generated primarily from the combustion of fossil fuels.

Carbon Dioxide Equivalent (CO₂e) - A unit for describing how much global warming a given greenhouse gas may cause. Allows for reporting emissions in one standardized value.

Carbon Monoxide (CO) - A gas formed from the incomplete combustion of substances that contain carbon (such as gasoline and wood).

Clean Air Act (CAA) - Originally passed by Congress in 1963 to regulate air quality, the Clean Air Act was greatly changed and strengthened in 1970 and 1977. In 1990, the Clean Air Act Amendments (CAAA) introduced significant changes in the federal approach to air quality management.

Conformity - Process which ensures that federal approval and funding goes to transportation activities that are consistent with air quality goals.

Fluorocarbons - Fluorinated gases include sulfur hexafluoride, hydrofluorocarbons and perfluorocarbons and are human-generated greenhouse gases with very high global warming potentials (range: 1,400 to 23,000) as compared to carbon dioxide.

Global Warming Potential (GWP) - This is a relative measure of how much heat a greenhouse gas traps in the atmosphere. It compares the amount of heat trapped by a certain mass of a gas to the amount of heat trapped by a similar mass of carbon dioxide. The GWP of carbon dioxide is considered to be 1.

Greenhouse Gas (GHG) - Several gases that absorb and emit radiation which trap heat near the earth's surface. Most can be naturally occurring and human generated.

Hydrocarbons (HC) - Compounds that contain mostly carbon and hydrogen. Often used interchangeably with volatile organic compounds (VOCs).

Maintenance Plan - An EPA mandated set of procedures to ensure that the NAAQS are maintained.

Methane (CH₄) - A gas that occurs naturally and is also human generated. It is a relatively potent greenhouse gas, having 25 times more global warming potential than carbon dioxide.

Mobile Sources - Vehicles that move or can be moved including on-road (those used on roads to move passengers or freight) and nonroad (vehicles used in construction, agriculture, transportation and recreation).

Micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) - A measure of pollutant concentration. Micrograms of pollutant per cubic meter of air.

National Ambient Air Quality Standards (NAAQS) - Nationally established maximum allowable concentrations of pollutants in the ambient air often referred to the federal health standards. Primary standards are set to protect human life and health. Secondary standards are set to protect vegetation, animals and property. NAAQS regulate six common air pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide and particulate matter.

Nitrous Oxide (N_2O) - A naturally occurring and human-generated greenhouse gas. A potent greenhouse gas, having about 300 times greater global warming potential than carbon dioxide.

Nonattainment Area - An area within a state in which air quality does not meet federal standards.

Oxides of Nitrogen (NO_x) - Gases that form when nitrogen and oxygen in the atmosphere are burned with fossil fuels at high temperatures. NO_x is a precursor to ozone formation.

Oxygenated Fuels - Gasoline that has had either alcohol or ether added to it to increase its oxygen content. The most widely used additive is ethanol. This blend allows for more complete combustion of gasoline in engines thereby lowering CO emissions.

Ozone (O_3) - An invisible gas occurring naturally in the upper atmosphere but at ground levels is a major component of smog. It is not emitted directly but formed as a result of complex chemical reactions when VOCs and NO_x react in the presence of sunlight.

Particulate Matter:

- **PM_{10} (PM Coarse)** - Solid or liquid particles with an aerodynamic particle size less than or equal to 10 micrometers, such as dust and aerosols, which may settle to the ground or stay suspended in air.
- **$\text{PM}_{2.5}$ (PM Fine)** - Small particles or liquid droplets measuring less than or equal to 2.5 micrometers in diameter. Due to their smaller size, these particles can be more harmful to public health than PM coarse particles.

Parts per million (ppm) - A measure of pollutant concentration. Parts of pollutant per million parts of air.

Point Sources - Large, stationary sources of air pollutants such as factories, power plants and smelters.

State Implementation Plan (SIP) - A plan containing the strategies to achieve attainment of the NAAQS, and maintain air quality levels once attainment is achieved.

Stationary Sources - Non-moving, fixed site producers of pollution and includes point and area sources of air pollution

Tucson Air Planning Area (TAPA) - Airshed area delineated by seven mountain peaks (Picacho Peak, Mount Lemmon, Mica Mountain, Apache Peak, Mount Wrightston, Keystone Peak and Silverbell Peak).

U. S. Environmental Protection Agency (EPA) - Created in 1970 to coordinate all federal laws relating to the environment and to enforce federal rules and requirements regarding environmental quality on federal agencies, state and local governments and private individuals and firms.

Volatile Organic Compounds (VOCs) - Compounds that contain carbon, oxygen, hydrogen, chlorine and other atoms that can evaporate easily into the atmosphere. They are found in nature as well as in some glues, solvents and paints. They help form O₃ near the ground.