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Background Brief on ...

Air Quality

Background

In 1955, Congress enacted the first air quality legislation with the passage of the Air Pollution Control Act. Major amendments in 1970, 1977, and 1990 resulted in what is known as the Clean Air Act (**CAA**). The federal law addresses ambient air quality standards, toxic air pollutants, new source performance standards, and new source review—the latter requiring the best available technology in air pollution control equipment for facilities that are major sources of contaminants.

The United States Environmental Protection Agency (**EPA**) has delegated implementation of most CAA requirements to the Oregon Department of Environmental Quality (**DEQ**), except in Lane County where the Lane Regional Air Protection Agency has primary jurisdiction. State air quality laws are codified in ORS Chapter 468A. The EPA retains oversight of the program and regularly audits DEQ's program to ensure that it meets federal requirements. EPA also has the authority to "overfile," or bring action against pollution sources if they believe enforcement at the state or regional level is inadequate. To date, DEQ has been successful in preventing federal overfiles.

Causes of Air Pollution in Oregon

Although industry is a source of some air pollution in Oregon, it accounts for less than 15 percent of most types of pollutants. Motor vehicles and woodstoves, fireplaces, and open burning are now the primary sources of manmade air pollution in Oregon. Emissions from cars contribute to ground level ozone pollution (smog) especially on hot summer days. Woodstoves and fireplaces are a primary source of winter time smoke levels. Other major sources of pollution are from individual actions such as using gas-powered lawn mowers, paints, solvents, aerosol products like hairspray and air fresheners, charcoal barbecues and outdoor burning. Forest fires also are a major contributor of smoke.

The air pollutants of greatest concern in Oregon are:

- Ground-level ozone (commonly known as smog),
- Fine particulate matter (known as PM_{2.5}), and
- Hazardous air pollutants (known as Air Toxics).

National Ambient Air Quality Standards

In 1980, only 30 percent of Oregonians lived in areas where the air met National Ambient Air Quality Standards. Thanks to federal, state and local pollution control programs, until recently all areas in Oregon achieved compliance with these standards. In 2006, EPA tightened the standard for fine particulate. Recent health studies show that fine particulate is more dangerous than previously thought. Fine particles evade the body's natural defenses and travel deep into the lungs.

In 2010, a number of Oregon communities were above levels of concern for fine particulate pollution, and three areas (Klamath Falls, Oakridge, and Lakeview) violate the federal standard. Older, "uncertified" woodstoves are a major source of pollution in the communities with the highest fine particulate levels. These stoves emit up to 70 percent more pollution than newer "certified" woodstoves. Legislation enacted in 2009, Senate Bill 102, requires the replacement of older wood stoves when a home is sold.

EPA tightened the standard for ozone in 2008. Ozone is formed by photochemical reactions of nitrogen oxides and volatile organic compounds. Thanks to successful implementation of the strategies described below, all Oregon counties are in compliance with the new standard. However, EPA recently proposed revisions to the ozone standard based on a reconsideration of the health data used to set the 2008 ozone standard. The effect of the proposal on Oregon could range from minor to major depending on the final standard.

Clean Air Strategies

The primary way air pollution is controlled and federal standards are met is through comprehensive airshed planning. These plans, which are developed with help from local advisory committees, include strategies tailored to meet local issues and needs. Strategies to reduce particulate pollution include emission reductions from woodstoves, outdoor burning, and industrial wood-fired boilers. Strategies to reduce smog (ozone) include vehicle inspection, emission reductions from industrial operations, and air quality advisories to reduce emissions on high smog days. For industrial sources, these strategies are implemented through federally required construction and operating permitting programs.

Toxic Air Pollutants/Portland Air Toxics Solutions

Toxic air pollutants can cause serious health risks, including cancer, immune system damage, nerve damage, birth defects, respiratory diseases, and other health problems. Air toxics come from a variety of sources, including cars and trucks, all types of burning, businesses, and consumer products such as paints.

In the past, EPA focused primarily on reducing toxic air pollution from large industrial facilities. They adopted emission limits for these facilities, and DEQ ensured compliance with these limits through air quality permits. More recently, EPA has begun adopting emission limits for smaller businesses, such as auto body refinishers, which will bring many new businesses into the air permit program. Senate Bill 103 (2009) authorized DEQ to begin a registration program as an alternative to permitting for many small Oregon businesses. This measure offers small businesses in Oregon an alternative to obtaining an air quality permit if they meet high environmental standards through a certification program.

In 2008, DEQ selected the Portland region to develop the state's first area-wide air toxics risk reduction plan. This project is called the Portland Air Toxics Solutions or "PATS." While the public health risk from air toxics in

Portland is similar to the risk in other major urban areas throughout the nation, the Portland area has the greatest risk from air toxics in Oregon. PATS will allow DEQ to focus new emission reduction efforts in the Portland area in a more comprehensive and science-based way. DEQ will identify other at-risk communities after the Portland Air Toxics Solutions project is complete.

Other programs to reduce air toxics in Oregon include:

- Vehicle inspection programs in the Portland and Medford areas.
- Permitting of industrial sources.
- Providing assistance to small businesses to adopt best management practices.
- Public outreach and education efforts to reduce idling in school zones, encourage alternatives to vehicle driving and reduce the use of household chemicals and sprays.
- Encouraging the use of “clean diesel” fuels and offering incentives to update diesel fleets.

Regional Haze

EPA regulations require states to adopt and update plans to reduce haze in the nation’s national parks and wilderness areas. The goal of the federal regional haze program is to reach natural background conditions in these scenic areas by the year 2064 through gradual improvements adopted every five years. The first plans were required to include regulations, known as Best Available Retrofit Technology (**BART**), for certain large industrial sources that were built before modern pollution control laws were adopted. In Oregon, the most significant BART source is Portland General Electric’s coal-fired power plant in Boardman. In 2009, the Environmental Quality Commission (EQC) adopted BART rules for this facility that phase in from 2011 to 2018. In April 2010, PGE petitioned the EQC to revise the BART rules to account for PGE’s plan to close the plant in 2020. PGE indicated to the Public Utilities Commission that it is considering the 2020 shutdown as a least-cost alternative considering the risk that future federal climate legislation

could make it uneconomic to operate the plant beyond 2020. DEQ has committed to expedite processing of this request, and is working with EPA and federal land managers to evaluate whether it meets the federal BART requirements.

Field Burning

DEQ and the Oregon Department of Agriculture are developing rule revisions to implement Senate Bill 528, which was enacted by the 2009 Oregon Legislature. This bill reduced Willamette Valley field burning from 40,000 to 20,000 acres in 2009 and, with some exceptions, eliminates Willamette Valley field burning in 2010. The exceptions include 15,000 acres per year for fire-dependent “identified species” and burning on steep terrain, and a provision for 2,000 acres per year for “emergency burning.”

Greenhouse Gas Emissions

In 2007, the Oregon Legislature established greenhouse gas reduction goals for the state by passing House Bill 3543. The goals call for Oregon to:

- By 2010, arrest the growth of Oregon’s greenhouse gas emissions and begin to reduce greenhouse gas emissions.
- By 2020, achieve greenhouse gas levels that are 10 percent below 1990 levels.
- By 2050, achieve greenhouse gas levels that are at least 75 percent below 1990 levels.

This legislation also established the Oregon Global Warming Commission and charged it with recommending ways to coordinate state and local efforts to reduce greenhouse gas emissions and prepare for the effects of global warming.

Greenhouse Gas Reporting

In 2008, the Environmental Quality Commission enacted mandatory greenhouse gas reporting rules for certain facilities. The 2009 Legislature passed Senate Bill 38, authorizing the commission to also create reporting requirements for power importers and fuel distributors. The new reporting requirements will provide DEQ with comprehensive data about Oregon’s overall greenhouse gas

emissions.

Low Carbon Fuel Standard

The low carbon fuel standard, authorized by the Oregon Legislature in 2009 as part of House Bill 2186 is intended to reduce greenhouse gas emissions from the transportation sector. Each type of transportation fuel (gasoline, diesel, natural gas, etc.) contains carbon in various amounts. This is also known as the "carbon content" of a fuel. When the fuel is burned, that carbon turns into carbon dioxide pollution or methane, which are greenhouse gases. The lower the carbon content of a fuel is, the fewer greenhouse gas emissions it produces.

Extracting the raw material or growing the raw material used to make the fuel also causes greenhouse gases to be emitted. As a fuel is refined, transported, and stored, different amounts of greenhouse gases are produced as a result. The sum of all the greenhouse gases emitted throughout the lifecycle of the fuel, from sourcing and refining through the distribution to the end use as the fuel is used in an engine, is called the "carbon intensity." The aim of Oregon's low carbon fuel standard will be to reduce the average carbon intensity of the mix of transportation fuels used in Oregon by 10 percent over a 10-year period. DEQ is engaged in an extensive advisory committee process to develop rules to implement the legislation and will be reporting to the 2011 Legislature.

Truck Efficiencies

House Bill 2186 (2009) also directed DEQ to conduct a study on options for improving truck efficiency and reducing engine idling to reduce greenhouse gas emissions. There are many after-market devices that can be installed on long-haul tractor trailers to improve fuel economy, save money, and reduce greenhouse gas and toxic diesel emissions. DEQ is working with a group of stakeholder to study the issue and will submit a report of its findings to an interim legislative committee by October, 2010.

Greenhouse Gas Permitting

EPA has recently taken significant actions to regulate greenhouse gas emissions under the CAA that will trigger new air permitting

requirements under the Title V and Prevention of Significant Deterioration (PSD) Programs. Title V permits regulate operation of major sources while PSD requires Best Available Control Technology for new and expanding major sources. New requirements will mean that some sources not currently subject to a Title V permit will become Title V sources due to the level of greenhouse gases emitted. Also, more new or expanding sources will be subject to PSD. The EPA plans to phase-in the requirements for the largest sources first, with permitting required to begin on January 2, 2011.

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