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INFORMATIONAL HEARING OF THE
SENATE ENVIRONMENTAL QUALITY COMMITTEE

BOB WIECKOWSKI, CHAIR

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The Federal Clean Air Act: California's Waivers: How California's Strict Air Quality Standards Have Created Economic Growth and Improved Public Health

BACKGROUND INFORMATION

Introduction

Since the 1960s, California has made great strides in instituting programs and measures to protect the state's air and reduce air pollution. Mountains in Los Angeles that routinely used to disappear in the smog are now visible, and long gone are the days when Angelinos couldn't go outside because the air made breathing difficult and

stung their eyes, making them water. Despite having "Spare the Air" days[1], actual smog alerts in the bay area have disappeared completely.

Even the air quality in the San Joaquin Valley has improved over the past 15 years, despite weather conditions and geography that are conducive to air pollution formation and retention.

Over the last 65 years, California's air quality has improved, but parts of California still do not meet state and federal air quality standards and air pollution from mobile and stationary sources continue to present very real risks to human health and the environment.

For example, it is well known that air pollution causes asthma. According to the Centers for Disease Control and Prevention, nationwide 7.4% of adults and 8.6% of children have been diagnosed with asthma. In California, the numbers are significantly higher: 13.1% of adults and 12.5% of children have been diagnosed with asthma. Lower income and minority groups are disproportionately affected by asthma due to their increased exposure to air pollution.

Even though California has made great strides toward cleaning up its air, the state has not yet reached the end of the road to reducing the negative impacts of air pollution.

The Early History of Air Pollution Control in California

Los Angeles has the dubious honor of being the first place in California to experience severe air pollution. As early as 1905, Los Angeles was adopting measures to try to control smoke emissions after a severely smoggy day in 1903 caused the city to experience something many described as a solar eclipse.

In the summer of 1943, smoke and fumes in downtown Los Angeles caused people to experience stinging in their eyes and a sensation that their throats were being scraped

[1] When the air quality is forecast to be unhealthy, a " Spare the Air" alert goes into effect for a full 24 hours, making it illegal to burn wood, manufactured fire logs, pellets, or any other solid fuels in a fireplace, woodstove, or outdoor fire pit.

with every breath. Although initially blamed on a chemical manufacturing plant, evidence proved the incident was caused by emissions from backyard trash incinerators, refineries, vehicles, and diesel buses. As a result, the Los Angeles County Board of Supervisors appointed a Smoke and Fumes Commission to study the County's air problems. In 1945, the City of Los Angeles began its air pollution control program, establishing the Bureau of Smoke Control in its health department.

A breakthrough came in 1946 when the Los Angeles Times hired an independent expert, Raymond R. Tucker, to study the Los Angeles smog. Despite public desire to blame solely refineries, Tucker firmly concluded that everyone contributed to smog. Notably, Tucker recommended individuals be banned from using backyard trash incinerators despite opposition from the public. He also pointed out a problem: because air pollution travels, local governments needed to form coalitions across large areas, but lacked the legislative authority to control air pollution.

In 1947, after a bill flew through the Legislature and was signed by Governor Earl Warren giving counties the authority to regulate air pollution, the Los Angeles County Board of Supervisors established the Los Angeles County Air Pollution Control District, the first air pollution control program in the United States. The bay area created its Air Pollution Control District in 1955.

Throughout the 1950s and early 1960s, California continued to make progress toward better air quality. California became the first state to enact air quality standards based on public health effects in 1959. In 1963, the federal government finally followed the state's lead and passed the Clean Air Act—an undeniably meager measure, however much a step in the right direction.

Air Quality Milestones after the Federal Clean Air Act

The Federal Clean Air Act (FCAA)—first passed in 1963 and revised many times thereafter—and its implementing regulations are intended to protect public health and environmental quality by limiting and reducing pollution from various sources. Under the FCAA, the US EPA establishes National Ambient Air Quality Standards (NAAQS) that apply to outdoor air throughout the country.

Meanwhile, understanding that vehicles were a major contributor to smog, in 1967 Governor Ronald Reagan signed a bill into law that established the Air Resources Board (ARB), which was tasked with leading the state's fight against air pollution. In 1969 and 1971, ARB set the first air quality standards for ozone, Particulate Matter (PM), oxides of nitrogen (NOx), oxides of sulfur (SOx), and carbon monoxide due to their negative impacts on public health above specified concentrations.

The federal government followed suit and set NAAQS for six "criteria pollutants." These included ground-level ozone, PM, NOx, SOx, and carbon monoxide, and added lead. Now, the US EPA reviews each NAAQS at five-year intervals to ensure that the standards are based on the most recent scientific information.

Regions that do not meet the national standards for any one of the standards are designated "nonattainment areas." The FCAA sets deadlines for attainment based on the severity of nonattainment and requires states to develop comprehensive plans, known as the state implementation plan (SIP), to attain and maintain air-quality standards for each area designated nonattainment for an NAAQS.

California has long understood that motor vehicles emit significant amounts of contaminants that cause air pollution in California, and has led the nation in promulgating motor vehicle emission control standards. For example, California first regulated tailpipe emission standards from new passenger vehicles in 1966, two years before EPA adopted any comparable federal tailpipe standards.

Recognizing that California had successfully promulgated regulations to control vehicle emissions, when the United States Congress enacted the Air Quality Act of 1967 it specifically authorized only California to establish vehicle emission standards that were separate from, and more stringent than, comparable federal standards. Since then, Congress has ratified and expanded California's ability to establish its own motor vehicle emissions control program. These standards apply to PM, carbon monoxide, NOx, and hydrocarbons. The US EPA must grant a waiver, however, before California's rules may be enforced.

When California files a waiver request, the US EPA publishes a notice for public hearing and written comment in the Federal Register. Once the public hearing and

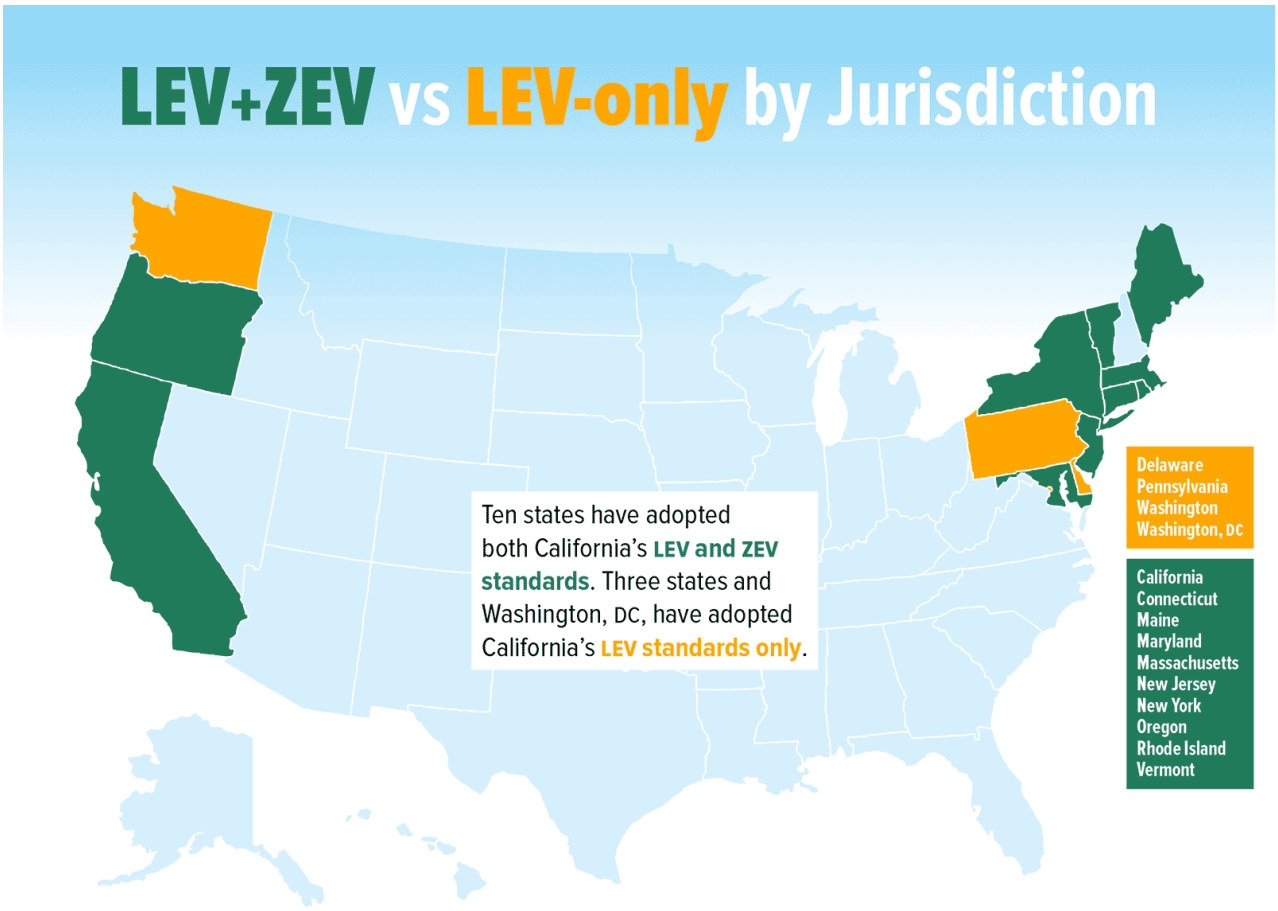
comment period are over, the US EPA reviews the comments and the Administrator determines whether the requirements for obtaining a waiver have been met.

Under Section 209 of the FCAA, the Administrator is obligated to grant the waiver unless there is evidence that (1) the proposed standards are not more protective of public health and welfare than the federal standards, (2) the state does not need stricter standards given a set of compelling and extraordinary circumstances (e.g., pollution could be abated using the less strict federal standards), and (3) the proposed standards are not consistent with Section 202(a) of the FCAA (this section prescribes the US EPA Administrator's scope of the authority to regulate emissions from all classes of motor vehicles and their engines). In other words, the process of California being granted a waiver is ministerial, or nondiscretionary on the part of the Administrator.

Once a waiver is granted, other states may choose to follow either the national standard or the stricter California standards. Currently, 10 states (including California) follow California's Low Emission Vehicle (LEV) Standard[2] and the Zero Emission Vehicle mandate[3]. Three states and Washington, D.C. follow only the LEV standard.

[2] Adopted in 1990, the LEV I standards applied to criteria pollutant emissions for vehicles from 1994 through 2003. Amendments adopted in 1998, termed LEV II, tightened the fleet average emission standards for 2004-2010, and required significantly lower NOx emissions from specific vehicle categories. In 2012, ARB adopted the LEV III amendments, which include more stringent emission standards for both criteria pollutants (which include NOx) and greenhouse gases for new passenger vehicles.

[3] The Zero Emission Vehicle (ZEV) Regulation requires large volume and intermediate volume vehicle manufacturers that sell cars in California to produce ZEVs (such as battery electric and fuel cell vehicles), clean plug-in hybrids, clean hybrids and clean gasoline vehicles with near-zero tail pipe emissions. In general, the ZEV regulation requires that 15% of new car sales be ZEVs by 2025. This target is intended to achieve 1.5 million ZEVs on the road by 2025 as directed under Governor Brown's Executive Order B-16-2012.



Although California has ultimately prevailed in receiving every one of the nearly 150 waiver requests it has made, California has faced federal administrations in the past that have not supported the stricter standards we have set that are necessary to meet our obligations under the federal and state law.

In 2005, the US EPA under President Bush failed to act on a waiver request made by California. The state informed then-Administrator Johnson of their intent to sue for delay. Ultimately, the US EPA denied the waiver request, triggering a lawsuit by California against the US EPA.

While that lawsuit was pending in the courts, there was a change of administration and the EPA, under president Obama, reversed the denial and granted the waiver request. This approval made the lawsuit moot.

State law assigns the ARB with primary responsibility for control of mobile-source air pollution, including adoption of rules for reducing vehicle emissions and the specification of vehicular fuel composition. Stationary sources of air pollution, such as factories and refineries, are under the jurisdiction of local air districts (e.g., South Coast Air Quality Management District, San Joaquin Valley Air Pollution Control District). ARB and the local air districts share jurisdiction over emissions of toxics from stationary sources.

Clearing the Air

Today, cars in California are 99% cleaner than they were in the 1960s due to the programs, rules, and regulations California has enacted, resulting in thousands of avoided premature deaths and even more avoided illness.

Although California's air quality has improved, the cities in the United States with the worst air quality are all still in California. In 2016, California cities occupied the top four positions for worst ozone and short-term PM, and seven positions for worst year-round PM.

Criteria air pollutants from vehicles and refineries continue to present very real risks to human health and the environment, and waivers under the FCAA are required to permit California to adopt the stricter standards necessary to meet state and federal standards.

For example, state and federal law require nonattainment regions of California to meet existing clean air standards by 2015 for annual PM 2.5 (particulate matter 2.5 microns or less in diameter), and by 2023 for the 8-hour average ozone standard. Despite stricter emissions standards set using the waiver process under the FCAA, the South Coast and San Joaquin air basins recently missed the 2015 attainment deadline for the last PM 2.5 standard. Additionally, tougher federal air quality standards for both particulates and ozone issued in 2006 and 2008 will require reductions in those regions well above and beyond those already planned.

Without the ability to set stricter emissions standards using the waiver process under the FCAA, it will be impossible for California to meet state and federal clean air goals.

The Economic and Public Health Benefits of Clean Air

Studies conducted by US EPA have found there is $38 in benefits for each $1 spent on air pollution control in California (US EPA Section 812 Report). These benefits include fewer premature deaths, hospitalizations for heart and lung diseases, and work loss days. Additionally, the study found an improvement in childhood IQ, agricultural productivity, and visibility.

The US EPA estimates that achieving the new ozone standard of 70 parts per billion would save Californians an estimated $0.4-$1.4 billion dollars per year when accounting for both the costs of reducing emissions and the avoided costs of healthcare, lost work days and low productivity, and other impacts of pollution.

At the state level, two studies sponsored by the ARB showed that the air pollution control industry generated 5,600 jobs in 1980 and 32,000 jobs in 2001. ARB staff estimated that the number of air pollution control industry jobs has now grown to 42,000 in 2015, account for 3.2% of total manufacturing jobs in California, and have generated $8 billion in revenue.

Furthermore, the clean energy sector generates an additional $27 billion dollars per year and employs approximately 125,000 people.

Overall, ARB estimates that direct air pollution control costs are less than 1% of the state's gross domestic product.

Looking at the cost-benefit analysis of cleaner air from a different metric, in 2015 the American Lung Association in California estimated that the state's residents are hit with $15 billion dollars per year in costs due to asthma attacks, lost work days, emergency room visits, hospitalizations, premature deaths, and other climate damage such as agricultural productivity, property damage, human health, and ecosystem resources.

Under an aspirational, mostly-ZEV vehicle fleet, the American Lung Association in California estimated that the state would save $13 billion dollars annually from those costs.

This year, scientists at the University of California-Berkeley published a study showing that California's air and climate programs have injected $13 billion dollars of net economic benefit into the San Joaquin Valley, one of the nonattainment air basins in California.

As mentioned previously, once California is granted a waiver under the FCAA, other states may choose to follow either the national standard or the stricter California standards. Ten states (including California) follow California's Low Emission Vehicle (LEV) Standard and the Zero Emission Vehicle mandate, while three states and Washington, D.C. follow only the LEV standard. With these jurisdictions following California's lead, nearly 35% of automobiles sold in the United States are subject to California's standards and/or mandates, creating a nationwide market for cleaner cars. This results in cleaner air for all Americans, and perhaps even the world. Former Senator Fran Pavley, who authored the "Pavley standards"[4] for cars, recently told a reporter that, "an engineer from China told [her] several years ago, 'If it weren't for California, we wouldn't have catalytic converters in China.'"

Using the waiver process under the FCAA, the technologies that manufacturers have developed to meet California's standards have been incorporated into the nationwide vehicle fleet and have not only benefitted California and the nation, but also the world.

Moving Forward

When not adequately controlled, air pollution has dire consequences on the health and safety of both people and the environment.

[4] AB 1493 (2005, Pavley) required ARB to develop and adopt regulations to achieve the maximum feasible and cost-effective reduction in greenhouse gas emissions from passenger, light-duty, and other non-commercial vehicles. These regulations required a waiver from the US EPA.

Depending on exposure, air pollution alone can cause an increased risk of cardiovascular and respiratory illness, lung disease, cancerous tumors, birth defects, developmental disorders, central nervous system damage, intellectual disability, persistent memory impairments, epilepsy, dementia, and premature death.

California has prioritized clean air and will continue to pursue policies that ensure all California air basins meet state and federal clean air standards. California's current waivers will be in effect through the 2020s, which allows for strong, consistent statute and regulation to define California's air quality standards. This puts California in position to ensure the environmental, economic, and public health benefits of clean air and other environmental policies flow to the state and the nation.

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