

## “Clearing California Skies”

A 12 min. video  
California Air Resources Board  
Produced 1998

### **Narration:**

California, 1943. It was a growing problem - and still a mystery. Everyone knew something had to be done - and quickly. The haze called "smog" was getting worse - burning eyes, searing throats, literally choking the life out of Californians.

But what was smog? What were the health effects? And how much was too much? Where did it come from and how do you control it?

The best scientists at Cal-Tech, the University of California, and Stanford were put to work. What they discovered set the stage for pioneering air pollution work over the next five decades - making California a world leader in fight against smog.

Scientists simulated the atmosphere in chambers, until the answers came. They discovered that smog was mainly ozone gas, and very small particulate matter. It came from the burning of fuels and the emission of hydrocarbon vapors - cooked under stable air in warm sunlight. It was the recipe for a toxic soup.

In those early years, few understood that smog could cause permanent lung damage. Fewer suspected that it came from thousands of different air pollution sources. No one imagined that it would take the next 50 years of science and politics to make substantial progress controlling smog.

It would take concerned citizens working with local and state government to pass laws that protect the public from air pollution. And it would take academia and industry working together, to create innovative (engineering) solutions to reduce air pollution emissions. Emission controls had to be fairly applied to all kinds of air pollution sources - and be cost-effective.

In the early years, smoke from factories was wrongly perceived as the main ingredient of smog. The City of Los Angeles was first to jump into the fight during World War II years, adopting smoke regulations. They had little effect on the smog. At the same time, officials realized that it would take more than one city, standing alone, to reduce smog throughout a vast 'air basin'. They discovered that the chemistry of air pollution is complex - and

that it knows no geographic boundaries. Smog forming emissions from one county frequently find their way into a neighboring downwind county.

The public demanded that more be done. The California Legislature passed a law in 1947 allowing counties to regulate local sources of air pollution. That year the Los Angeles Air Pollution Control District was formed, followed later by the Bay Area Air Pollution Control District, and other southern California counties.

The air districts started their clean-up with large industrial sources of air pollution emissions - burning landfills, refineries, power plants, and factories. Later regulations controlled emissions from thousands of smaller industrial sources - paint shops, plating operations, gasoline stations, boilers, and incinerators. Emissions from these sources - taken together- added up to a major portion of the smog problem.

As research progressed and California grew, a major culprit came into clearer focus - the automobile. Just about everyone owned a car, and no one wanted it to be true, but cars - and trucks - were to blame for much of the smog. Now everyone would make a more personal sacrifice for clean air.

Local air pollution districts were not enough. A coordinated statewide effort to fight air pollution was needed. In 1959, the legislature passed laws making California the first state to establish 'air quality standards' based on the public health effects of smog. This was a crucial first step: figuring out how much air pollution is too much.

The legislature also mandated motor vehicle emission standards for the first time - putting a limit on smog forming gases that pass out the tail pipe.

To implement the statewide fight, the legislature created the Air Resources Board, or ARB in 1967. The Board was given the job of controlling air pollution from cars, trucks and other 'mobile' sources of air pollution. ARB was also directed to coordinate the efforts of the local air quality districts.

ARB set to work, requiring auto manufacturers to build cleaner running vehicles - less hydrocarbons, less oxides of nitrogen, and less carbon monoxide.

Industry met the challenge. First, cars had to have positive crankcase ventilation valves. Later, every car had to have a catalytic converter. Vapor recovery nozzles became mandatory at gas stations. Leaded gasoline was phased out. Low sulfur fuel oil and diesel fuel were phased in.

Cars ran ever cleaner through the 1970's. But even as cars and industry polluted less, smog levels declined only slightly. Between 1950 and 1980,

13 million more people called California 'home' - and most of them drove cars, or trucks. They drove more and they drove further. Air quality planners and government agencies had no choice - they would have to design tougher rules to keep up with explosive population growth and more air pollution. As before, California led the nation and the world, developing new strategies to reduce smog levels. To protect public health, it was the only choice we had.

During the 80's and 90's California cars became the world's cleanest running cars. Computers controlled the engines, fuel and exhaust systems. 'Smog check' made sure the equipment worked.

California skies began to clear. The choking, burning haze that once blighted Los Angeles, began to thin. Despite millions more people, cars, trucks, and more industry - California air quality was getting better.

In the 90's, 'Cleaner Burning Gasoline' was introduced. It was the air quality equivalent of eliminating the pollution from 3.5 million cars.

Air quality got even better. From the 1970's, through the 80's and 90's, smog alerts in LA and the Bay Area continued their steady downward trend. Levels of ozone, carbon monoxide, and oxides of nitrogen were reduced.

The public had demanded that something be done about smog. It was clear the system was working: State and local government working with academia and industry, making measurable progress in the fight to protect public health.

Much has been accomplished over 50 years - protecting public health while allowing for economic growth. The air is cleaner, but not clean enough.

Unhealthy levels of air pollution, violating state and federal standards, are still with us. With more people driving - with even more cars - more trucks - reaching clean air goals will require even more innovative solutions.

100 years after the golden age of the internal combustion car, comes the electric vehicle. In the future, turn-of-the-21st-century 'EV' cars may look as quaint as the first cars of the 20th-century.

It is clear that transportation must pollute less. Zero-pollution options such as the electric vehicle are already on the market. The California Air Resources Board is working with auto and battery manufacturers to chart the future of personal transportation.

Other areas show promise: fuel cells, cleaner running trucks, and consumer products. But California will need more than EV's and technology to clear California skies.

Smart consumer choices -such as carpooling and alternative transportation - will matter more than ever. Public support for air quality programs will be crucial for success.

Once again, California can take a pioneering lead, watched around the world, in the fight against air pollution.

Clean air. It's up to us.