



## Thanks for Clean Air

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Most Americans take clean air for granted. Not so long ago, air quality in was routinely as bad as it was in the East Bay last week. In the 50's people dropped dead from air pollution in the streets of London and Pennsylvania steel towns. LA smog was infamous and travel on parts of the NJ Turnpike was a sickening joke. Millions of people still suffer this kind of injury in China and India.

We don't think about it much today, thanks to a bipartisan coalition in Congress which enacted the 1990 Clean Air Act Amendments (thank you Henry Waxman). This led to a massive, if incomplete, cleanup of power plants, refineries, tail pipes and manufacturing. That law, in turn, owes much to pioneering work by states, including California, who in the 70's and 80's found ways to improve health without harming the economy. So, today the air, almost everywhere, is much cleaner and healthier.

I say almost everywhere, because not all have access to clean air. People who live near ports, refineries, oil and gas wells, warehousing, chemical plants, power stations, and freeways still suffer from dangerous levels of air pollution. We need look no further that West Oakland where people breathe too much diesel black carbon particulates; or Richmond where routine and accidental refinery emissions still spread misery and disease. The 1990 amendments were based on the monitoring technology of the time, which was not able to identify and measure local air quality. Today, however, we have new low-cost monitoring equipment to find hotspots which are often located in minority neighborhoods where historic forms of institutional racism forced people up against fence lines of pollution sources. But even wealthy people suffer from increasingly common wildfire smoke, refinery accidents, and diesel emissions on freeways.

These events remind us that, while progress has been made, there is still work to do. Air pollution hotspots persist, and California is burning. To make progress we must recognize two fundamental realities. First, with regard to hotspots, emission control technology can only go so far to control emissions from production and use of fossil fuels. You can reduce emissions from trucks, cars and busses, but you can't eliminate them, especially as equipment ages and controls break down. You can reduce emissions from oil and gas wells and refineries, but accidents and routine leaks continue. These sources create hotspots, often in poor communities. This is a very serious equity problem. Part of the solution is to electrify transport, a technology which is fully available today. Electric drives and fuel cell engines, powered by renewable energy sources, can meet society's need for mobility and gradually make fossil fuels obsolete. It will take time, but we can do it.

Second, with regard to the smoke, this too is a function of fossil fuel use. We must recognize that wildfire, flooding, drought, storm intensity problems will continue and likely worsen – if we continue to destabilize the world

climate with fossil emissions and fail to adapt our communities to the changes that are already happening. This too will take time, but action by California can set the pace for other states and countries. We can stabilize the world climate, prevent catastrophe for future generations, and we must.

We have the tools to do this work. Dozens of vehicle manufactures will soon introduce trucks capable of moving heavy loads for 200 miles between charges. Fuel cell engines, powered by clean hydrogen and renewable gas can power the long haul. School buses, garbage trucks, mass transit, delivery fleets and port equipment can all run on electricity, with power from an increasingly clean electric grid. Cars are even easier, and today public/private efforts are solving the chicken-and-egg problem of getting power and charging stations to where people need them for electric vehicles.

Notice that I did not say this will be easy. Many ingrained patterns of behavior, procurement, finance and operations will need to adjust to new technologies, new ways of moving goods and people. So, as the rains finally come to cleanse the air, be grateful for the progress made, thank the people and businesses who achieved it, and those who will finish the job. Find ways to reduce fossil fuel use in vehicles, homes and businesses, so our children and grandchildren can breathe easy.