



South Coast Air Quality Management District

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NEWS

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Clean Technology and Clean Fuels Programs Continue to Improve Southland Air Quality

This year marks the 20th and 30th anniversaries of two complementary clean air programs that have directed more than \$2 billion toward improving Southland air quality by developing dozens of clean air technologies and deploying thousands of clean vehicles.

“Thousands of zero- and near-zero-emission vehicles have replaced older, dirty diesel vehicles in the Southland due to funding and research partnerships with academia, businesses, and industry,” said Wayne Natri, executive officer of the South Coast Air Quality Management District. “These new technologies are creating a substantial reduction in hazardous emissions.”

This year marks the 20th year of the statewide Carl Moyer Memorial Air Quality Standards Attainment Program and the 30th year of SCAQMD’s Clean Fuels Program. Together, these programs have funded the research, development and commercialization of clean transportation technologies and the subsequent accelerated deployment of these technologies into the region’s fleets.

Clean Fuels Program

Since the Clean Fuels Program was signed into state law on Sept. 29, 1988, it has provided SCAQMD with a total of \$310 million from a \$1 annual DMV registration fee. In addition, a portion of SCAQMD stationary source emission fees has contributed an additional \$10.5 million for a total funding of \$320.5 million over the program’s 30-year history.

SCAQMD has successfully increased that funding five-fold by leveraging contributions from government, industry and private companies to provide a total of \$1.5 billion in funding.

The program has significantly advanced clean-air technologies in four key areas:

Plug-in hybrid vehicles - SCAQMD and its project partners leveraged technology in commercially available hybrid-electric vehicles to develop the first proof-of-concept plug-in hybrid electric vehicles (PHEVs) and full battery-electric vehicles (BEVs). This early effort identified early market demand and quantified fuel economy and emissions benefits, eventually leading to the full commercialization of these vehicles by major automakers. There are now approximately 368,000 PHEVs and BEVs operating in California, with a total of 39 such models available from almost all light-duty vehicle manufacturers.

Low- and near-zero emission heavy-duty natural gas engines – Over the past 20 years, SCAQMD, the U.S. Department of Energy and engine manufacturers have collaborated on the development, demonstration, deployment and certification of the first heavy-duty natural gas engines, initially demonstrated in school and transit buses as well as refuse trucks, with significant implementation in a broad range of vehicle platforms. More recently, SCAQMD has successfully led efforts to commercialize heavy-duty near-zero natural gas engines achieving greater than 90 percent reduction in smog-forming nitrogen oxide (NO_x) emissions from the existing certification levels.

Hydrogen refueling stations -- SCAQMD and its partners sponsored the early development and demonstration of hydrogen stations for fuel cell vehicles, which helped develop standards for safety and dispensing. With funding from the California Energy Commission, 32 hydrogen refueling stations are now operating in California, including 18 throughout the South Coast Air Basin, which refuel more than half of the state's 4,000 fuel cell cars.

Fuel cell transit buses and trucks -- In the early 1990s, SCAQMD started developing the world's first fuel cell transit bus with Vancouver-based Ballard Power Systems. Early prototype fuel cell buses were successfully demonstrated at SunLine Transit in the Coachella Valley and Los Angeles County Metropolitan Transportation Authority (Metro).

Many of these fuel cell buses have been deployed in Northern California and elsewhere, with recent larger scale deployments offered by several transit bus manufacturers. This development effort has more recently been transferred to other heavy-duty uses, including Class 8 big-rig trucks.

Carl Moyer Program

Since its inception on Aug.18, 1998, the Carl Moyer program has awarded SCAQMD a total of \$467.1 million, which the agency has used to replace 6,708 older diesel engines with newer, cleaner models. The cleaner vehicles and equipment included heavy-duty trucks, transit buses, refuse vehicles, public agency vehicles, construction equipment, agricultural equipment, marine vessels, shore power, cargo handling equipment, and locomotives. As a result, SCAQMD has removed 7,598 tons of smog-forming NO_x emissions and 222 tons of fine particulate matter per year from the Southland's air.

In 2001, the Lower-Emission School Bus Program was established as part of the Carl Moyer Program. Under this program, SCAQMD has provided \$280 million in funding to replace 1,600 diesel engine school buses with compressed natural gas engines. SCAQMD also retrofitted an additional 3,400 diesel school buses with diesel particulate filters.

Carl Moyer is funded through a portion of state motor vehicle registration, Smog Check and tire purchase fees.

Southern California has the smoggiest air in the nation due to its natural geographic and climatic conditions, along with a population of 17 million, and hazardous emissions from more than 11 million vehicles and tens of thousands of stationary sources. Mobile sources are responsible for about 88 percent of NO_x emissions in the region while stationary sources emit the remaining 12 percent of NO_x in the region.

“Strong public-private partnerships are necessary for us to continue our clean air gains and reduce public health hazards,” said Natri. “Millions depend on our collective efforts to clean the air as we continue to ensure stationary and mobile sources do their part.”

SCAQMD is the air pollution control agency for Orange County and major portions of Los Angeles, San Bernardino and Riverside counties.

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