

**STATEMENT OF THE
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION
ON THE CALIFORNIA AIR RESOURCES BOARD'S
U.S. EPA WAIVER REQUEST FOR CALIFORNIA STATE MOTOR VEHICLE
POLLUTION CONTROL STANDARDS**

May 22, 2007

The Manufacturers of Emission Controls Association (MECA) is pleased to provide comments in support of the Air Resources Board's waiver request for California's regulation to control greenhouse gas emissions from light-duty motor vehicles. Over the past three decades, the Air Resources Board (ARB) has shown leadership in its continuing efforts to develop and implement effective air pollution control programs for mobile sources, and has extended this leadership into the climate change arena through the development of these regulations to reduce greenhouse gas emissions from passenger vehicles and light-duty trucks beginning with the 2009 model year. MECA believes it is important that EPA grant California a waiver for its groundbreaking efforts to control greenhouse gas emissions from light-duty vehicles.

MECA is a non-profit association of the world's leading manufacturers of emission control technology for mobile sources. Our members have over 30 years of experience and a proven track record in developing and manufacturing emission control technology for a wide variety of on-road and off-road vehicles and equipment, including extensive experience in developing emission controls for gasoline and diesel light-duty vehicles in all world markets. Our industry has played an important role in the emissions success story associated with light-duty vehicles in California, as well as the rest of the United States, and has continually supported California's efforts to develop innovative, technology forcing, emissions programs to deal with California's difficult air quality problems.

Our comments today are directed at the important relationship between reducing greenhouse gas emissions from motor vehicles and achieving the other important criteria emissions goals required by California in the coming decade.

As detailed earlier today in ARB's testimony, there are a large set of technology combinations that are available to reduce greenhouse gas emissions from passenger vehicles and light-duty trucks. These include state-of-the-art and future advanced gasoline and diesel powertrains. MECA member companies, in addition to supplying advanced emission control technologies, also manufacture and supply a range of powertrain technologies including engine turbochargers, advanced fuel systems, variable valve actuation technology, hybrid powertrain components, and powertrain control modules that can be applied to both light-duty gasoline and diesel powertrains to help improve overall vehicle efficiencies that in turn can result in lower greenhouse gas emissions.

Implicit in ARB's greenhouse emission analysis is the ability of these advanced powertrain options to meet California's applicable criteria pollutant emission standards, such as CO, NO_x, and non-methane organic gases (NMOG). Our industry firmly believes that all of these advanced, light-duty powertrain options combined with the appropriately designed and optimized emission control technologies can meet all applicable California criteria emission requirements during the implementation years associated with reducing greenhouse gases from motor vehicles.

There are already numerous examples of light-duty, stoichiometric gasoline engine-equipped vehicles using advanced three-way catalyst systems and advanced engine controls that meet California's LEV II program emission requirements, including a significant number of conventional and hybrid models for sale today certified to meet California's toughest light-duty emission levels: SULEV and PZEV emissions certified vehicles. Based on the growing experience with developing and introducing ultra-low emission gasoline vehicles, there is no need to compromise criteria pollutant emission performance to meet any proposed reductions in greenhouse gas emissions. Technology exists today for any of the gasoline, stoichiometric engine options to comply with California's LEV II program emission requirements. In fact, MECA believes that all light-duty stoichiometric gasoline or alternatively fueled, stoichiometric powertrain options available today and in the future to vehicle manufacturers for complying with California's greenhouse gas emission standards are capable of being certified to California's toughest criteria pollutant standards.

On light-duty gasoline vehicles, modern three-way catalyst-based emission control technology is also effective at controlling methane and nitrous oxide emissions, two other important greenhouse gas emissions. Tightening of hydrocarbon and NO_x emission standards over time with the parallel introduction of more effective emission control systems has resulted in lower emissions of methane and nitrous oxide from today's vehicles compared to vehicle certified to less stringent standards. These advanced three-way catalysts have also been shown to be effective at reducing methane emissions from CNG-fueled light-duty vehicles.

ARB cites examples of high speed, direct injection diesel engines and partial lean-burn, direct injection gasoline engines as options for reducing greenhouse gas emissions from light-duty cars and trucks. Although these engine technologies offer significant reductions in CO₂ emissions, their lean operating conditions can result in higher oxides of nitrogen (NO_x) and higher particulate matter (PM) emissions than stoichiometric gasoline engines. Our industry has been developing emission control technologies for these types of engines for more than fifteen years. Emission control technologies exist today to ensure that diesel and lean gasoline vehicles can meet the same emission standards as today's stoichiometric gasoline vehicles, and enable these advanced powertrains to be viable options for reducing greenhouse gas emissions from light-duty vehicles.

As detailed in a number of ARB technical reports issued on mobile source climate change impacts, reduction of diesel PM and NO_x will achieve important climate

protection benefits. As an example, black carbon, a major component of diesel PM, is believed to have a significant net atmospheric warming effect by enhancing the adsorption of sunlight. Preliminary estimates of the 100-year horizon global warming potential of diesel PM is comparable to that of greenhouse gases, and reductions of PM emissions are expected to provide important near-term benefits.

Significant reduction of diesel PM can be achieved with diesel particulate filters (DPFs). Particulate filters for controlling diesel particulate matter to very low levels are now being used in a variety of European light-duty diesel passenger cars with more than four million filter-equipped vehicles sold in Europe since 2000. New “clean diesel” light-duty vehicles that are entering the California and U.S. markets will also be equipped with DPFs to achieve compliance with ARB’s light-duty LEV II PM emission regulations. These successful light-duty DPF applications are generally employing durable ceramic wall-flow filters to achieve in excess of 90% reduction in engine-out PM levels over years of operation.

With respect to NOx emissions, NOx adsorber catalysts systems have been introduced on light-duty diesel passenger cars and trucks in Europe and Japan, and most recently, on a heavy-duty diesel pick-up truck here in the U.S. NOx adsorber catalyst systems are also being used on lean-burn gasoline passenger cars in Japan and Europe to control NOx emissions from these vehicles. At least one vehicle manufacturer has announced its intention to bring “clean diesel” products to the U.S. that will utilize NOx adsorber catalysts to comply with California LEV II and U.S. EPA Tier 2 NOx emission requirements. Several auto manufacturers have also announced their intent to introduce light-duty diesel vehicles into the California and U.S. markets with selective catalytic reduction (SCR) technology using urea as a reductant to control NOx emissions. More recently work is underway on developing new emission control technologies that combine NOx adsorber and SCR catalyst functions for controlling NOx emissions from light-duty diesel vehicles without the need for a urea reductant.

All this growing commercial experience along with continued significant development efforts by our industry and our customers in the automotive industry focused on emission control technologies for diesel and lean gasoline combustion engines, gives MECA confidence that these advanced, higher efficiency powertrain options will be available for introduction in the 2009-2016 timeframe, to help comply with all aspects of California’s light-duty vehicle requirements, including greenhouse gas emissions and criteria pollutants.

In conclusion, MECA agrees with ARB’s assessment that a variety of advanced powertrain options are available for reducing carbon dioxide emissions from passenger vehicles and light-duty trucks. With appropriately optimized emission control systems, these advanced gasoline and diesel powertrains can also comply with all applicable California criteria pollutant emission requirements. MECA asks EPA to grant California its waiver for their groundbreaking light-duty vehicle greenhouse gas emission regulations.

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