

**STATEMENT OF THE
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION
ON THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSAL –
CONTROL OF AIR POLLUTION FROM MOTOR VEHICLES: TIER 3 MOTOR
VEHICLE EMISSION AND FUEL STANDARDS**

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My name is Dr. Joseph Kubsh. I am the Executive Director of the Manufacturers of Emission Controls Association, or MECA. MECA is pleased to provide comments in support of the EPA's proposed Tier 3 light-duty vehicle emission and fuel standards. These proposals, when finalized, will reset the bar for state-of-the-art exhaust and evaporative emission controls for light-duty vehicles through 2025. The proposals will also require the oil industry to produce and sell ultra-low sulfur gasoline that will result in immediate and significant emission reductions from the hundreds of millions of light-duty vehicles operating every day on America's highways, and ensure future fuel efficient gasoline vehicles can comply with EPA's proposed Tier 3 emission limits. MECA applauds EPA for developing a Tier 3 proposal that will establish a national set of exhaust and evaporative emission standards for light-duty and medium-duty vehicles by largely harmonizing their proposal with California's LEV III requirements.

MECA is a non-profit association of the world's leading manufacturers of emission control technology for mobile sources. Our members have over 40 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 exhaust and evaporative 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 the United States, and has continually supported efforts to develop innovative, technology-forcing, emissions programs that have provided important public health benefits here in the U.S. and served as model programs in countries around the globe. The mobile source emissions control industry has generated hundreds of billions of dollars in U.S. economic activity since 1975 and supports approximately 65,000 U.S. jobs, mostly in product development and manufacturing. EPA's proposed Tier 3 emissions and fuel standards will provide additional support for the continued development of a thriving U.S. industry focused on a wide range of technologies that can reduce vehicle criteria emissions.

MECA agrees with EPA staff's assessment that achieving the proposed Tier 3 exhaust and evaporative emission standards and associated emission reductions are both technically feasible and cost effective. This fact is clearly demonstrated by the more than two million SULEV and PZEV-compliant light-duty vehicles that have been sold in the U.S. market since these near-zero emission, gasoline vehicles were first introduced more than ten years ago. This technology base of advanced three-way catalysts, exhaust hydrocarbon adsorber materials, high cell density substrates, emission system thermal management strategies, secondary air injection systems, advanced carbon canisters, advanced low fuel permeation materials, and air intake hydrocarbon adsorber materials that have already been commercialized for a variety of PZEV gasoline vehicle applications can be extended and further optimized to allow all light-duty and

medium-duty gasoline vehicles to achieve the exhaust and evaporative emission reductions needed to comply with the Tier 3 vehicle emission proposals put forward by EPA. In addition, advanced diesel emission control technologies including diesel particulate filters, lean NO_x adsorber catalysts, and selective catalytic reduction catalysts will be combined with future, advanced diesel engines to allow light-duty diesel vehicles to achieve the proposed Tier 3 emission limits, including EPA's proposed Tier 3, Bin 30 exhaust standards.

A critically important element to ensuring that future gasoline vehicles will be able to comply with EPA's proposed Tier 3 emission limits is EPA's proposed reduction of gasoline fuel sulfur levels to a 10 ppm national average starting in 2017. Numerous published studies have documented fuel sulfur-related deactivation of three-way catalysts that are the primary exhaust emissions control technology used on light-duty and medium-duty gasoline vehicles. EPA has released a thorough and well designed sulfur effects study on 81 in-use Tier 2 light-duty gasoline vehicles, that clearly shows significant reductions in criteria pollutants in comparing emissions performance on gasoline with 28 ppm sulfur versus 5 ppm sulfur. Work authored by Umicore in a 2011 SAE technical paper (SAE 2011-01-0300) shows similar, significant emission benefits on a 2009 model year PZEV vehicle operated with 3 ppm sulfur gasoline versus 33 ppm sulfur gasoline. In a MECA study published in a 2007 SAE paper (SAE 2007-01-1261), an advanced three-way catalyst system installed on a large 2006 V8 powered SUV showed clear evidence of sulfur deactivation in successive FTP testing with aged catalysts using 17 ppm sulfur gasoline. FTP emissions for this full size SUV started at the proposed Tier 3, Bin 50 levels and increased to slightly above proposed Bin 70 levels by the third FTP test, an emissions increase of more than 80% over three FTP tests. Sulfur deactivation of three-way catalysts negatively impacts the active precious metal catalysts, oxygen storage materials, and other activity promoters found in these sophisticated catalysts. The coverage and negative impacts of sulfur poisons on a three-way catalyst depends, in part, on the temperature history of the catalytic converter(s) found on the vehicle. Exhaust temperatures are expected to cool in the future as manufacturers reduce vehicle waste heat to meet future vehicle fuel efficiency/greenhouse gas standards. These cooler converter operating temperatures cause catalysts to accumulate higher amounts of sulfur poisons with today's gasoline sulfur levels, resulting in higher emission levels of pollutants at the tailpipe, including ozone-forming exhaust pollutants like hydrocarbons and NO_x. Ultra-low gasoline sulfur levels of 10 ppm on average are needed to ensure that manufacturers will be able to meet proposed Tier 3, Bin 30 fleet average emission standards over their 150,000 mile useful life, for the full range of light-duty vehicles that consumers wish to buy and manufacturers want to produce.

In summary, there are significant opportunities to reduce both criteria pollutant and greenhouse gas emissions from the transportation sector through the design of fuel efficient powertrains that include advanced exhaust emission controls for meeting even the most stringent criteria pollutant standards that are included in EPA's proposed Tier 3 program. MECA believes that advanced emission control systems have a critically important role in future policies that aim to reduce mobile source criteria pollutant and greenhouse gas emissions. MECA strongly supports EPA's Tier 3 emissions and fuel standards proposal, and urges EPA to finalize these proposals by the end of this year.

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