MECA Releases New Emissions Inventory and Air Quality Modeling Reports Highlighting the Potential Benefits of a National Cleaner Trucks Initiative Scenario at the Proposed CARB Emission Limits

Washington, D.C. – The Manufacturers of Emission Controls Association (MECA) has released a new report today quantifying a county level MOVES emissions inventory in the continental U.S. (CONUS) 48 states and subsequent air quality modeling report of a potential scenario should the U.S. EPA Cleaner Trucks Initiative (CTI) be finalized as a national program at the emission limits proposed by CARB in their heavy-duty omnibus regulation.

The objective of the emission impact analysis was to respond to EPA’s request for comments as to the merits of reducing NOx emissions from heavy-duty trucks by 50 to 90% as outlined in the January 6, 2020 Advance Notice of Proposed Rulemaking (ANPR) of the CTI.

On March 6, 2020, the California Air Resources Board (CARB) proposed to set an intermediate FTP NOx emissions limit of 50 mg/bhp-hr in model years 2024-2026 with a final FTP standard of 20 mg/bhp-hr in 2027, representing a 90% reduction below today’s standard of 200 mg/bhp-hr. The emission limit values and increased durability requirements as proposed by CARB served as the basis for the assumption’s scenario should EPA’s CTI be finalized nationally at the same levels.

The base year was selected as 2028 and the modeled year of 2035 was chosen to allow seven years of phase-in of low NOx trucks meeting the future modeled CTI scenario emission limits while still providing adequate confidence from an air quality perspective. Later years should show additional improvements as greater fleet turnover occurs.

The NOx emissions analysis demonstrated substantial national NOx reductions. The 2035 MOVES inventory impact analysis, representing only the first 11 model years of more stringent standards (only eight of which are at the 20 mg/bhp-hr final standard), yields an average estimated 36.2% reduction in on-road NOx emissions or about 330,000 tons of NOx in the year 2035.
The modelled 2028 base year 8-hour ozone design values were found to be above the 70 ppb NAAQS for 75 monitoring locations. Applying the potential CTI strategy to the 2028 base year results in the following observations:

- By 2035, the entire continental U.S. is in attainment with the 75 ppb 2008 ozone NAAQS except for San Bernardino County in California
- By 2035, 46 states will be in attainment with the 2015 ozone NAAQS of 70 ppb (only counties in California and Utah remain in nonattainment)
- Metropolitan areas and highway corridors will see the greatest reduction in ozone due to the strategy, with reductions of up to 6.5 ppb in the west (San Bernardino, CA) and 4.9 ppb in the east (Atlanta, GA)
- Without a stringent CTI strategy, in 2035 over 90 million Americans are projected to breathe ozone concentrations greater than 60 ppb, which in 2015, the EPA Clean Air Scientific Advisory Committee (CASAC) supported as an 8-hour primary ozone standard that would be protective of human health. In addition, in the absence of the modeled CTI strategy, nearly 300 monitoring sites are projected to have 8-hour ozone design values between 60 and 70 ppb, and the proposed CTI strategy will reduce these ozone levels by an average of 2.35 ppb and up to a max of 5 ppb.

Finally, the technical work at Southwest Research Institute (SwRI) has demonstrated the feasibility of achieving the assumed limits modeled in this work. MECA estimated the cost effectiveness of these mobile source NOx reductions to be in the range of $1,000 to $5,000 per ton of NOx reduced.

Founded in 1976, MECA is a national association of companies that manufacture a variety of emission control technologies for cars, trucks, buses, and off-road vehicles and equipment, as well as stationary internal combustion engines. For more information on clean mobility technologies, please visit MECA’s website at: www.meca.org.