

**STATEMENT OF THE  
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION  
ON THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S DIRECT FINAL RULE  
ON HEAVY-DUTY ENGINE AND VEHICLE, AND NONROAD TECHNICAL  
AMENDMENTS**

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The Manufacturers of Emission Controls Association (MECA) is pleased to provide comments to the U.S. Environmental Protection Agency's Direct Final Rule for Heavy-Duty Engines and Vehicles, and Nonroad Technical Amendments.

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 emission controls for gasoline and diesel vehicles in all world markets. Our industry has played an important role in the emissions success story associated with mobile sources in the United States, and has continually supported efforts to develop innovative, technology-forcing, emissions programs to deal with air quality problems.

MECA strongly supported EPA's Nonroad Tier 4 Regulations. At the time the rule was finalized, EPA, MECA and others expected nonroad diesel engine manufacturers to utilize compliance strategies that were expected to be used in the highway diesel sector to comply with EPA's 2007-2010 heavy-duty highway emission limits: diesel particulate filters (DPFs) for achieving Tier 4 final PM limits and urea-SCR systems for achieving Tier 4 NO<sub>x</sub> limits. Continued development of diesel engine combustion systems have opened up alternative compliance pathways for Tier 4 final diesel nonroad engines that allow the Tier 4 final PM standards for some ranges of engine power ratings to be met without the use of diesel particulate filters. MECA has tracked announcements from engine manufacturers over the past two years on their Tier 4 final design strategies and a number of engine manufacturers have indicated that some of their Tier 4 final diesel engines will not use diesel particulate filters. MECA has provided at the end of these comments a chart recently published in North American Diesel Progress that summarizes the Tier 4 final technology announcements made by many nonroad diesel engine manufacturers (Figure 1). In many cases, these non-DPF Tier 4 final engines intend to make use of improved diesel engine combustion strategies that facilitate low engine-out PM levels combined with the use of SCR systems to achieve Tier 4 final NO<sub>x</sub> levels. An analysis of recent Tier 4 interim certification data indicates that engines certified without DPFs have a much smaller compliance margin with respect to PM compared to engines certified with DPFs (by as much as a factor of 10). This difference in compliance margin is highlighted in a newly released MECA report entitled: "Ultrafine Particulate Matter and the Benefits of Reducing Particle Numbers in the United States," available on the MECA website: [www.meca.org](http://www.meca.org) (under Resources >> Reports).

As has been shown in the heavy-duty highway sector, DPFs are extremely efficient at reducing particulate emissions over a wide range of particle sizes, including reducing emissions

of the smallest, ultrafine particles emitted by a diesel engine. In the highway, heavy-duty sector, DPF-equipped engines are routinely being certified at PM emissions levels that are 90% or more below the 0.01 g/bhp-hr 2010 EPA PM heavy-duty highway diesel engine standard. MECA is concerned about the PM emissions durability of nonroad Tier 4 engines certified without DPFs. There is ample evidence that engine-based PM control strategies are prone to higher in-use emissions than DPF-equipped engines, due to factors such as cold starts, poor maintenance, and the large variety of duty cycles encountered in the nonroad sector. Given the expected, relatively small compliance margins of nonroad Tier 4 final engine designs that do not utilize DPFs, MECA believes that EPA should closely scrutinize Tier 4 final certification packages of non-DPF diesel engines and allocate extra compliance and enforcement resources to follow up with in-use emissions testing of any Tier 4 nonroad engines certified without a DPF. EPA should also strongly consider adoption of a manufacturer run, in-use emissions testing program in the nonroad sector that utilizes the latest portable emissions measurement technology to ensure that Tier 4 final nonroad engines are delivering the emission reductions associated with the Tier 4 nonroad standards. The nonroad sector could also benefit from the adoption of on-board diagnostic requirements that are similar in scope to the heavy-duty highway diesel on-board diagnostic requirements required by the California Air Resources Board. In-use testing and OBD ensure that the emissions performance of the engine/equipment is maintained over the regulated full useful life.

In general, MECA supports EPA's proposed technical amendments for heavy-duty engines and vehicles, and nonroad engines. MECA supports EPA's technical amendments to the heavy-duty engine and vehicle greenhouse gas and fuel efficiency standards. However, MECA has concerns with several technical amendments to the Nonroad Tier 4 Regulations that could result in unintended and adverse consequences to air quality in general. MECA believes that manufacturers are already utilizing Tier 4 program flexibilities like the Transition Program for Equipment Manufacturers (TPEM) to a very large degree. The wide scale use of the TPEM flexibility delays the transition to cleaner, Tier 4 engines and the emission reductions associated with these cleaner engines. MECA understands the need to provide manufacturers with this compliance flexibility but is also supportive of accelerating the introduction of cleaner Tier 4 technology into the U.S. market.

EPA is amending the nonroad diesel engine technical hardship program to facilitate EPA granting exemptions to address certain hardship circumstances that were not considered when the original 2004 Tier 4 final rule was published. Under the Transition Program for Equipment Manufacturers, EPA has proposed additional relief under the technical hardship provisions to a small number of specialized, nonintegrated equipment manufacturers who may otherwise not be able to produce complying products due to the unavailability of Tier 4 final engines. However, MECA is concerned that EPA's proposed relief provision is not limited to just these specialized nonintegrated equipment manufacturers, but would be available to the entire nonintegrated equipment manufacturing segment of the nonroad sector. Wide scale granting of additional relief by EPA has the potential to reduce the availability of Tier 4 final engines and increase nonroad diesel emissions. The emission reductions associated with Tier 4 final engines are needed in many nonattainment regions across the U.S. California, in particular, is counting on Tier 4 final engines to effectively implement their off-road in-use emissions reduction program. EPA's proposal would remove limitations on the number of additional flexibility engines that a manufacturer could request, in addition to the exemptions that would be available throughout the entire seven-year TPEM usage period rather than just for the current two-year period.

EPA maintains that it would selectively approve applications for technical hardship relief based on real and verifiable needs to preclude the availability of the proposed revised flexibility exemption allowances to the entire nonintegrated manufacturing segment of the nonroad category. However, because EPA believes that it is more appropriate to rely on its discretion to evaluate each hardship application on its merits to reserve a greater degree of flexibility in deciding which applications to approve, the result could be that the decision criteria may not be particularly rigorous. MECA is concerned that EPA's case-by-case approval process may not go far enough to ensure future availability of Tier 4 final compliant engines. In order to provide greater assurance against potential abuses of the proposed relief provisions while still allowing relief to be granted when appropriate and necessary, EPA could add a prerequisite condition requiring that any manufacturer to whom relief is granted must make up the adverse environmental impact created by the relief. This type of criterion should prevent a manufacturer from trying to "game" the relief provisions only to gain a competitive advantage rather than for its intended purpose.

MECA is also concerned with EPA's proposal that would lessen the stringency of the upper limit of Tier 4 engines certified under the federal Averaging, Banking and Trading (ABT) program. Currently, EPA allows only 20% of a manufacturer's annual engine production to be certified using a FEL cap equal to the previous Tier 3 standards for particulate matter and NOx emissions. The remaining engines must be certified to emission levels significantly more stringent and closer to actual Tier 4 final levels to offset these dirtier engines. EPA claims that the proposed changes to the FEL cap provide industry with additional compliance flexibility without affecting emissions. EPA maintains that there would be no net environmental impact from raising the FEL cap because, on average, more engines would need to be certified to a lower cap, which is also why no emissions analysis has been modeled for the proposed change. However, MECA questions whether local exposure effects have been closely considered or modeled in developing this proposal. Additionally, EPA's proposal would likely result in fewer Tier 4 final engines, especially if manufacturers choose to use their banked emission credits to continue certifying dirtier engines. MECA also questions whether this additional flexibility is really needed by the manufacturers.

In conclusion, MECA in general supports U.S. EPA's proposed technical amendments for heavy-duty engines and vehicles, and nonroad engines. However, MECA is concerned with proposed additional flexibilities associated with the Tier 4 Transition Program for Equipment Manufacturers and proposed changes to the FEL cap used in the Tier 4 emissions averaging, banking, and trading program. These proposals could further delay the introduction of cleaner, Tier 4 nonroad diesel engines and have unintended and adverse consequences to air quality in the United States.

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Figure 1

