

Highlights of EPA's Final Multipollutant LMDV Rule (*revised*) March 20, 2024

On Wednesday, March 20, 2024, EPA announced its [final Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles](#), “The strongest vehicle pollution standards ever finalized in U.S. history,” according to EPA Administrator Michael S. Regan, who formally announced the rule at an event held in Washington, DC, along with President Biden’s National Climate Adviser Ali Zaidi, who said the rule will “cut tailpipe pollution in half in the next 10 years.”

The final rule includes new, more stringent standards for light-duty vehicle (LDV) and medium-duty vehicle (MDV) emissions of carbon dioxide (CO₂), nonmethane organic gases (NMOG)+nitrogen oxides (NO_x) and particulate matter (PM). LDVs include passenger cars, light trucks and heavier vehicles designed mainly for the transportation of people. MDVs include large pickup trucks and vans usually used for work because they have higher towing and hauling capacity than LDVs.

Final GHG Emission Standards

As under EPA’s May 5, 2023 [proposed LMDV rule](#) (88 Fed. Reg. 29,184), the final rule phases in progressively more protective performance-based CO₂ standards for MY 2027 through 2032 LDVs and MDVs. Also like the proposal, the final standards do not mandate the use of any specific technology, nor do they mandate that any percentage of vehicle production be battery-electric (zero-emission) vehicles (BEVs). The final rule differs from the proposal in that it provides more lead time for manufacturers to eventually meet the MY 2032 performance-based standards; this is the approach taken under Alternative 3 of EPA’s proposed rule, which EPA described at the time as achieving “the same stringency as the proposed standards in MY 2032 but provid[ing] for a more consistent [annual] rate of stringency increase for MYs 2027–2031.”

The final phase-in schedules for the industry-wide CO₂ projected fleet average emissions targets for LDVs and MDVs ultimately achieve virtually the same projected numeric standards in MY 2032 as under the proposed rule – 85 grams per mile (gm/mi) for LDVs (which represents a reduction of almost 50 percent in the projected fleet average target levels relative to the existing MY 2026 standard) and 274 gm/mi for MDVs (which represents a reduction of 44 percent in the projected fleet average target levels relative to the existing MY 2026 standard) – but on a more linear path from MY 2027, thereby allowing more flexibility in the mix of vehicles each manufacturer may choose to meet the targets and greater vehicle choice for consumers.

- To view EPA’s Estimated Fleet-Wide CO₂ Targets Corresponding to the *Proposed* Standards, see Table 29, on p. 29,240 (57th page of the electronic FR notice), of the May 5, 2023 [proposed rule](#).
- To view EPA’s Projected Targets for *Final* Light-Duty Vehicle GHG Standards, by Regulatory Class (CO₂ grams/mile), see Table 1 on p. 43 of the March 20, 2024 pre-publication version of the [final rule](#).
- To view EPA’s Projected Targets for *Proposed* MDV Standards, by Body Style, see Table 32 on p. 29,243 (60th page of the electronic FR notice), of the May 5, 2023 [proposed rule](#).
- To view EPA’s Projected Targets for *Final* Medium-Duty Vehicle GHG Standards, by Body Style (CO₂ grams/mile), see Table 2 on p. 45 of the March 20, 2024 pre-publication version of the [final rule](#).

Whereas under the proposal EPA projected that one pathway to compliance with the LDV performance standard would include 67 percent BEVs, under the final rule the agency provides multiple examples of fleet mixes that could meet the standard, including mixes with as few as 24 percent BEV in MY 2026 and 35 to 56 percent BEVs in MY 2032, with plug-in hybrid electric vehicles, hybrid electric vehicles and advanced internal combustion engine (ICE), or gasoline-powered, vehicles also playing a role.

- To view the Fleet BEV Penetration Rates, by Body Style, Under the *Proposed* Standards, see Table 80, on p. 29,329 (146th page of the electronic FR notice), of the May 5, 2023 [proposed rule](#).
- To view the Projected New Vehicle Technology Penetrations for *Final* Light-Duty Vehicle GHG Standards for Varying Scenarios, GHG Fleet-Wide CO₂ Targets Corresponding to the *Final* Standards, see Table 3 on p. 47 of the March 20, 2024 pre-publication version of the [final rule](#).

EPA projects the final rule will achieve cumulative reductions in CO₂ totaling 7.2 billion metric tons over the life of the program (versus 7.7 billion metric tons under the proposal). In addition, these new CO₂ standards will result in the reduction of toxic air emissions.

Final Criteria Pollutant Emission Standards

The final rule also includes a phased schedule of more rigorous (Tier 4) standards for NMOG+NO_x culminating in 1) a LDV fleet average level of 15 milligrams per mile (mg/mi) by MY 2032 (which is a 50-percent reduction from the existing 30-mg/mi MY 2025 Tier 3 standard set in 2014) and 2) an MDV fleet average level of 75 mg/mi (which is a 58- to 70-percent reduction from the Tier 3 standards of 178 mg/mi for Class 2b vehicles and 247 mg/mi for Class 3 vehicle), which can be reached under one of two compliance pathways – an early compliance pathway and a default compliance pathway.

- To view the LDV, LDT, MDPV and MDV Fleet Average NMOG+NO_x Standards Under the *Early* Compliance Pathway of the *Proposed* Rule, see Table 40, on p. 29,260 (77th page of the electronic FR notice), of the May 5, 2023 [proposed rule](#).
- To view the LDV, LDT, MDPV and MDV Fleet Average NMOG+NO_x Standards Under the *Default* Compliance Pathway of the *Proposed* Rule, see Table 41, on p. 29,259 (76th page of the electronic FR notice), of the May 5, 2023 [proposed rule](#).
- To view the MDV Fleet Average NMOG+NO_x Standards under the *Early* Compliance Pathway of the *Final* Rule, see Table 41 on p. 306 of the March 20, 2024 pre-publication version of the [final rule](#).
- To view the MDV Fleet Average NMOG+NO_x Standards under the *Default* Compliance Pathway of the *Final* Rule, see Table 41 on p. 306 of the March 20, 2024 pre-publication version of the [final rule](#).

EPA has also finalized the proposed 0.5 mg/mi PM standard for LDVs and MDVs to be met over three duty cycles including a cold-temperature (-7°C) cycle. This is a per-vehicle cap (versus a fleet average) to be fully phased in by MY 2030 for LDVs and MY 2031 for MDVs (one year later than under the proposal for each vehicle type). EPA projects this standard will reduce PM emissions from gasoline vehicles by more than 95 percent and also reduce mobile source toxic air emissions; the agency anticipates gasoline particulate filters will be used to comply with the standard.

EPA estimates the following emission reductions in 2055, from levels that would have occurred in 2055 without the final standards: 8,700 tons of PM; 36,000 tons of NO_x and 150,000 tons of volatile organic compounds.

Benefits¹

EPA projects the annual net benefits of the final rule to society is \$99 billion dollars, which includes \$13 billion in annual public health benefits due to improved air quality. Among other things, the rule is expected to prevent up to 2,500 premature deaths in 2055 and also reduce heart attacks, respiratory and cardiovascular illnesses, aggravated asthma and decreased lung function. The total net benefits also include \$62 billion a year in annual fuel costs (once fully phased in the average driver should expect to save \$6,000 in fuel costs over the life of the vehicle); drivers will also save on vehicle maintenance and repair.

¹ EPA writes in the final rule, “The annualized value of vehicle technology costs is estimated at \$40 billion. Notably, this rule will result in significant savings in vehicle maintenance and repair for consumers, which we estimate at an annualized value of \$16 billion (note that these values are presented as negative costs, or savings, in the table). EPA projects generally lower maintenance and repair costs for electric vehicles and those societal maintenance and repair savings grow significantly over time. We also estimate various impacts associated with our assumption that consumers choose to drive more due to the lower cost of driving under the standards, called the rebound effect (as discussed further in section VIII of this preamble and in Chapters 4, 8 and 9 of the RIA). Increased traffic noise and congestion costs are two such effects due to the rebound effect, which we estimate at an annualized value of \$1.2 billion. EPA also estimates impacts associated with fueling the vehicles under our standards. The rule will provide significant savings to society through reduced fuel expenditures with annualized pre-tax fuel savings of \$46 billion. Somewhat offsetting those fuel savings is the expected cost of EV chargers, or electric vehicle supply equipment (EVSE), of \$9 billion. This rule includes other benefits not associated with emission reductions. Energy security benefits are estimated at an annualized value of \$2.1 billion. The drive value benefit, which is the value of consumers' choice to drive more under the rebound effect, has an estimated annualized value of \$2.1 billion. The refueling time impact includes two effects: time saved refueling for ICE vehicles with lower fuel consumption under our standards, and mid-trip recharging events for electric vehicles. Our past GHG rules have estimated that refueling time would be reduced due to the lower fuel consumption of new vehicles; hence, a benefit. However, in this analysis, we are estimating that refueling time will increase somewhat overall for the fleet due to our additional assumption for mid-trip recharging events for electric vehicles. Therefore, the refueling time impact represents a disbenefit (a negative benefit) as shown, with an annualized value at negative \$0.8 billion. As noted in section VIII of this preamble and in RIA Chapter 4, we have updated our refueling time estimates but still consider that they may be conservatively high for electric vehicles considering the rapid changes taking place in electric vehicle charging infrastructure, including those driven by the Bipartisan Infrastructure Law and the Inflation Reduction Act.” (See pp. 57-59 of the May 20, 2024 pre-publication version of the [final rule](#) and also [Table 8](#), “**Monetized Costs, Benefits, and Net Benefits of the Final Program for Calendar Years 2027 Through 2055 (billions of 2022 dollars)**,” on p. 59 of the [final rule](#).)