EPA PROPOSED MULTI-POLLUTANT AND GREENHOUSE GAS MOTOR VEHICLE RULES

MWAQC-TAC

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Metropolitan Washington
Council of Governments

Summary

EPA announced 2 proposed rules on April 12, 2023:

1. Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles
   - Builds upon EPA's final standards for federal greenhouse gas emissions standards for passenger cars and light trucks for model years 2023 through 2026.
   - The proposed standards would phase in over model years 2027 through 2032.
2. Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3
   - EPA is proposing stronger CO2 standards for MY 2027 HD vehicles that go beyond the current standards that apply under the HD Phase 2 Greenhouse Gas program.
   - EPA is also proposing an additional set of CO2 standards for HD vehicles that would begin to apply in MY 2028, with progressively lower standards each model year through 2032.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

What Vehicle Types Are Covered by this Proposal?

- Passenger cars and light trucks, consistent with previous EPA criteria pollutant and greenhouse gas rules.
- In this proposal, heavy-duty Class 2b and 3 vehicles are referred to as “medium-duty vehicles” (MDVs) to distinguish them from Class 4 and higher vehicles that remain under the heavy-duty program.
- The MDV category includes primarily large pickups and vans with a gross vehicle weight rating (GVWR) of between 8,501 and 14,000 pounds that are typically used for work due to their higher towing and hauling capabilities compared to LDVs.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Overview of Proposed Standards

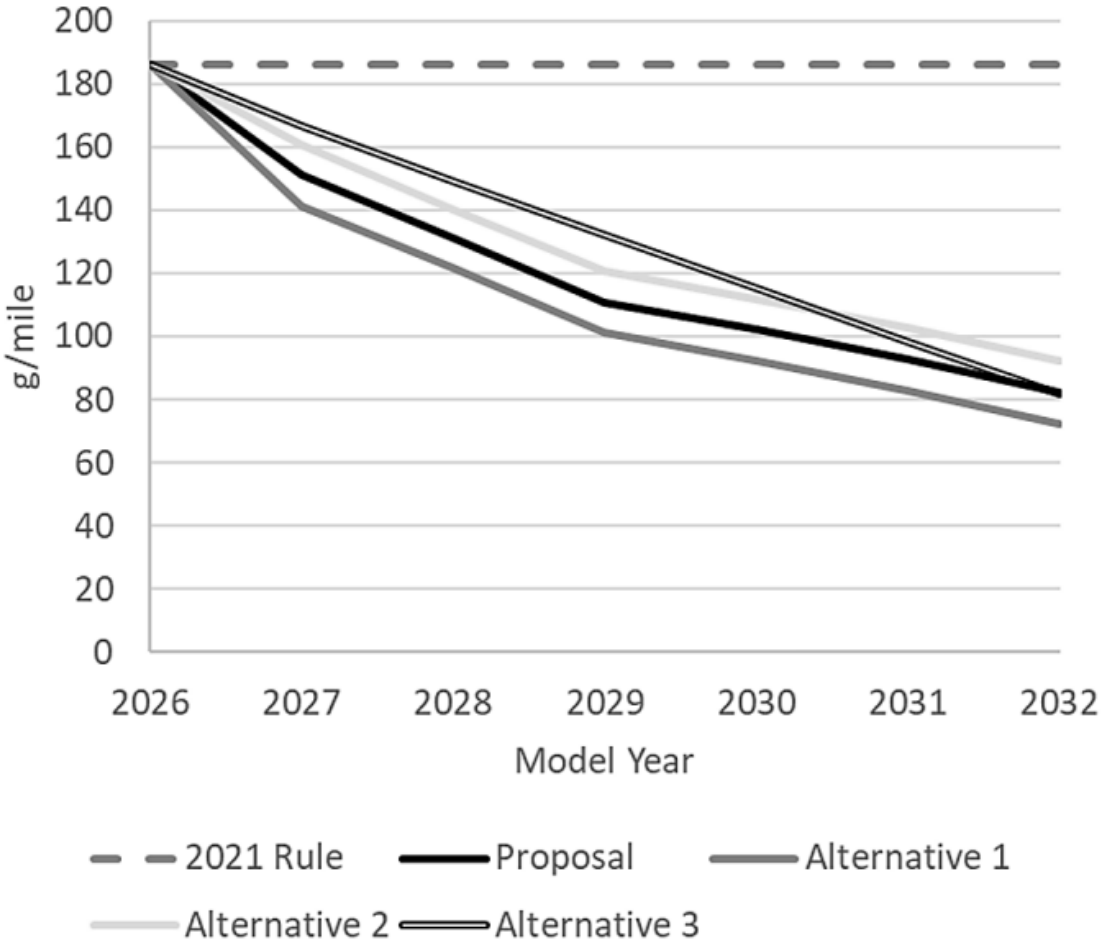
- Automakers shifting away from internal-combustion engine (ICE) technologies toward zero-emission technologies.
- BIL and IRA will provide large investment in the zero-emission technology market.
- EPA's proposed rules would continue the trend adopted by prior rules of increasing the stringency of emission standards to achieve additional emissions reductions.
- EPA anticipates that manufacturers will continue to employ a diverse range of technologies to comply with the proposed emissions standards and recognizes that manufacturer investment and consumer interest in electric vehicles is growing.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Proposed Standards – GHG Emissions

- More stringent GHG standards for both LDVs and MDVs for MYs 2027-2032.
- For LDVs, EPA is proposing standards that are projected to result in an industry-wide average target for the light-duty fleet of 82 grams/mile (g/mile) of CO2 in MY 2032 (a 56% reduction in projected fleet average GHG emissions target levels relative to the existing MY 2026 standards).
- The projected industry fleet average g/mile targets under the proposed MY 2027-2032 standards compared to the current MY 2026 standard (established in 2021) are shown in the figure below.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs



Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Proposed Standards – GHG Emissions

- For MDVs, EPA's proposed standards would increase in stringency each year from MY 2027-2032. The MDV standards are projected to result in an average target of 275 grams/mile of CO2 by MY 2032 (a reduction of 44% in projected fleet average GHG emissions target levels relative to the current MY 2026 standards).

Model Year Combined	Vans CO2 (g/mile)	Pickups CO2 (g/mile)	Combined CO2 (g/mile)
2027	393	462	438
2028	379	452	427
2029	345	413	389
2030	309	374	352
2031	276	331	312
2032 & later	243	292	275

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Proposed Standards – Criteria Pollutant Emissions

- For LDVs, EPA is proposing non-methane organic gases (NMOG) plus nitrogen oxides (NOx) standards that would phase-down to a fleet average level of 12 mg/mi by MY 2032 (a 60% reduction from the existing 30 mg/mi standards for MY 2025 established in the Tier 3 rule in 2014).
- For MDVs, EPA is proposing NMOG+NOx standards that would require a fleet average level of 60 mg/mi by MY 2032 (a 66-76% reduction from the Tier 3 standards of 178 mg/mi for 2b vehicles and 247 mg/mi for class 3 vehicles.
- EPA is proposing cold temperature (-7 °C) NMOG+NOx standards for LDVs & MDVs to ensure robust emissions control over a broad range of operating conditions. The proposed standards would also reduce emissions of mobile source air toxics.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Projected Mix of Technologies

- The proposed standards are performance-based, allowing automakers to choose what set of emissions control technologies is best suited for their vehicle fleet to meet the standards.
- EPA projects that one potential pathway for the industry to meet the proposed standards would be through:
  - Nearly 70% BEV penetration in MY 2032 across the combined light-duty passenger car, crossover/SUV, and pickup truck categories
  - About 40% BEV penetration by 2032 across the combined medium-duty van and pickup truck categories
  - Wide-spread use of gasoline particulate filters to reduce PM emissions
  - Improvements in technology to reduce CO2 from conventional gasoline vehicles

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Climate & Air Quality Benefits

- EPA's proposal would significantly reduce emissions of air pollutants that contribute to climate change and unhealthy air.
- Between 2027 and 2055, the proposed standards would cumulatively avoid 7.3 billion metric tons of CO2.
- In 2055, the proposal would reduce harmful air pollutants from vehicles, including approximately 15,000 tons of PM2.5, 66,000 tons of NOx, and 220,000 tons of hydrocarbons, compared to 2055 levels without the proposal.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Costs & Consumer Savings Benefits

- EPA estimates that the total benefits of this proposal far exceed the total costs, with net present value of benefits in the range of $850 billion to $1.6 trillion, with equivalent annualized net benefits in the range of $60 billion to $85 billion.
- Between $63 billion and $280 billion of total benefits are attributable to reduced emissions of criteria pollutants that contribute to ambient concentrations of PM2.5.
- The proposed program is estimated to have $330 billion in climate benefits.
- The vehicle technology costs of this proposal range from $180 billion to $280 billion, but the program also would have additional social benefits from fuel savings of $450 billion to $890 billion through 2055

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Costs & Consumer Savings Benefits

- Repair and maintenance savings (stemming from lower maintenance and repair of electric vehicles compared to gasoline vehicles) estimated through 2055 at $280 billion to $580 billion.
- In addition, consumers would benefit from significant savings on operating costs over the life of a vehicle that meets the proposed standards. For all vehicles meeting the standards, these savings include fuel savings and, for BEVs, maintenance and repair savings as well.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Additional Provisions

- In addition, EPA is proposing GHG program revisions in several areas, including off-cycle and air conditioning credits, the treatment of upstream emissions associated with battery-electric and plug-in hybrid EVs in compliance calculations, and vehicle certification and compliance.
- EPA is proposing battery durability and warranty requirements for plug-in LDVs & MDVs, and new standards to control refueling emissions from MDVs.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

Proposed Standards – GHG Emissions

- In addition to the proposed standards, EPA is seeking comment on three alternative levels of stringency, and on the range of standards across these alternatives and the proposal, and also on whether the standards should continue to increase in stringency for future years, such as through MY 2035.
- EPA is also seeking comment on potential future gasoline fuel property standards, aimed at further reducing PM emissions, for consideration in a possible subsequent rulemaking. These could provide an important complement to the vehicle standards being proposed in the current action.

Multi-Pollutant Emissions Standards for MY 2027 and Later LDVs & MDVs

EPA plans to hold a virtual public hearing for this proposed rule:

- The first day (May 9) will run from 10:00am to 7:00pm EDT, and the second day (May 10) will run from 1:00pm to 10:00pm EDT. Each day is broken into three time blocks:
  - Session 1 – Tuesday, May 9th, 10:00am -12:00pm EDT (Spanish translation available)
  - Session 2 – Tuesday, May 9th, 1:00pm - 5:00pm EDT (Spanish translation available)
  - Session 3 – Tuesday, May 9th, 6:00pm - 7:00pm EDT
  - Session 4 – Wednesday, May 10th, 1:00pm - 4:00pm EDT
  - Session 5 – Wednesday, May 10th, 5:00pm - 7:00pm EDT (Spanish translation available)
  - Session 6 – Wednesday, May 10th, 8:00pm - 10:00pm EDT (Spanish translation available)

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   - EPA is proposing stronger CO2 standards for MY 2027 HD vehicles that go beyond the current standards that apply under the HD Phase 2 Greenhouse Gas program.
   - EPA is also proposing an additional set of CO2 standards for HD vehicles that would begin to apply in MY 2028, with progressively lower standards each model year through 2032.

GHG Emissions Standards for HDVs – Phase 3

What Vehicle Types Are Covered by this Proposal?

- The proposed Phase 3 rulemaking applies to heavy-duty vocational vehicles (such as delivery trucks, refuse haulers, public utility trucks, transit, shuttle, and school buses) and tractors (such as day cabs and sleeper cabs on tractor-trailer trucks).

GHG Emissions Standards for HDVs – Phase 3

Overview of Proposed Standards

- The proposed program revises the MY 2027 standards to be more stringent than the existing Phase 2 GHG standards for vocational vehicles and day cab tractors. It also introduces new standards for these vehicles that become more stringent every model year from 2028-2032.
- For sleeper cab tractors, the proposed Phase 3 program introduces new standards in MY 2030 that increase in stringency in MYs 2031 and 2032.
- The proposed standards do not mandate the use of a specific technology. Like the Phase 2 GHG program, these standards include emission standards that are differentiated by vehicle type and use – as well as an averaging, banking and trading program that allows manufacturers to trade credits, bank credits for future years, and average credits in meeting the standards.

GHG Emissions Standards for HDVs – Phase 3

Projected Mix of Technologies

- The proposed standards are performance-based, allowing each manufacturer to choose what set of emissions control technologies is best suited for their vehicle fleet to meet the standards. EPA projects that one potential pathway for the industry to meet the proposed standards would be through:
  - 50% ZEVs for vocational vehicles in MY 2032, which includes the use of battery electric and fuel cell technologies.
  - 34% ZEVs for day cab tractors in MY 2032, which includes the use of battery electric and fuel cell technologies.
  - 25% ZEVs for sleeper cab tractors in MY 2032, which primarily includes the use of fuel cell technologies.

GHG Emissions Standards for HDVs – Phase 3

Climate & Air Quality Benefits

- The proposed standards for HDVs would avoid approximately 1.8 billion metric tons of GHG emissions from 2027-2055.
- The proposed Phase 3 program is expected to increase use of zero-emission HDVs, which would reduce emissions of smog and soot-forming pollutants by:
  - 650 tons of particulate matter,
  - 72,000 tons of NOx, and
  - 21,000 tons of VOCs, compared to 2055 levels without the proposal.

GHG Emissions Standards for HDVs – Phase 3

Costs & Consumer Savings Benefits

- EPA estimates that the total benefits of this proposal far exceed the total costs, by as much as $320 billion.
- Society would realize approximately
  - $87 billion in climate benefits;
  - up to $29 billion in benefits from fewer premature death and serious health effects such as hospital admissions due to respiratory and cardiovascular illnesses; and
  - approximately $12 billion in reduced reliance on oil imports.
- HDV purchasers would see approximately $250 billion in savings associated with less fuel used and less vehicle maintenance and repairs needed through 2055.

GHG Emissions Standards for HDVs – Phase 3

Costs & Consumer Savings Benefits

- EPA estimates the cost of compliance with the program for manufacturers would be only about $6 billion, after accounting for an estimated $3 billion in cost reductions from battery tax credits provided by IRA.
- After accounting for the vehicle purchase tax credits provided under the IRA, the typical buyer of a new zero-emission HDV would:
  - Pay an average of between $900 and $11,000 more in upfront costs for a MY 2032 vocational vehicle ZEV than for a conventional, including the cost of EV charging infrastructure, but recoup these costs in 3 years or less through yearly operational savings.

GHG Emissions Standards for HDVs – Phase 3

Costs & Consumer Savings Benefits

- Pay an average of $17,000 more in upfront costs for a MY 2032 day cab tractor ZEV than for a conventional, including the cost of EV charging infrastructure, but recoup these costs in 3 years or less though yearly operational savings.
- Pay an average of $15,000 more in upfront costs for a MY 2032 sleeper cab tractor ZEV than for a conventional, but recoup these costs in 7 years or less though yearly operational savings.

GHG Emissions Standards for HDVs – Phase 3

Related Actions and The Clean Trucks Plan

- As identified in Executive Order 14037, Strengthening American Leadership in Clean Cars and Trucks, EPA is issuing a series of regulations to reduce pollution from trucks and buses and to advance the transition to a clean transportation future.
- EPA's "Clean Trucks Plan" would result in significant emissions reductions from new MDVs & HDVs and takes major steps towards improving air quality and addressing the climate crisis.

GHG Emissions Standards for HDVs – Phase 3

Related Actions and The Clean Trucks Plan

- This proposal is the third and last part of this plan, complemented by new, stronger emissions standards finalized in December 2022 that will reduce NOx emissions from MY 2027 and later HDVs, and the multipollutant LDV & MDV proposed rule that would reduce emissions from MY 2027 and later cars, commercial pickup trucks and vans.
- Taken together, these three rulemaking actions provide the opportunity for EPA to establish comprehensive, multipollutant standards for the onroad sector in the near term and the long term, all while considering the significant emission reductions and cost savings that ZEV technology can provide.

GHG Emissions Standards for HDVs – Phase 3

Locomotives

- This rulemaking also includes a proposal to revise EPA's regulations addressing preemption of state regulation of locomotives.
- The proposed locomotive amendments would enable EPA's preemption regulations to more closely track the language in the Clean Air Act.
- In 1998, EPA adopted its first regulations addressing air pollutant emissions from locomotives. In that action, the agency also adopted regulations addressing federal preemption of state requirements relating to the control of emissions from locomotives.
- EPA is proposing amendments in part because the agency is concerned these preemption regulations adopted in 1998 may no longer be appropriate.

GHG Emissions Standards for HDVs – Phase 3

EPA held a virtual public hearing for this proposed rule on May 2 and 3, 2023.

Contact Information

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