EPA'S FINAL MULTI-POLLUTANT RULES FOR LIGHT-DUTY & MEDIUM-DUTY VEHICLES, & HEAVY-DUTY VEHICLES

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Background

- At the May 2024 MWAQC meeting, a presentation was provided on EPA's proposed rules for Light-Duty Vehicles (LDVs) and Medium-Duty Vehicles (MDVs), as well as for Heavy-Duty Vehicles (HDVs).
- COG staff also provided an overview of comment letters that had been drafted in support of these rulemakings.
    - Once approved by MWAQC, CEEPC, and the TPB, these comment letters were submitted on June 9, 2023.

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

- On March 20, 2024, EPA announced a final rule, Multi-Pollutant Emissions Standards for Model Years (MY) 2027 and Later Light-Duty and Medium-Duty Vehicles.
- The final rule builds upon EPA's final standards for federal greenhouse gas (GHG) emissions standards for passenger cars and light trucks for model years 2023 through 2026 and leverages advances in clean car technology.
- These standards will phase in over MY 2027 through 2032.

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

Climate Benefits:

- The standards establish technology-neutral, performance-based standards for cars, SUVs, light pickup trucks, and medium-duty large pickups and vans for model years 2027-2032
- EPA projects that cumulative CO2 reductions as a result of the new standards are approximately 7.2 billion metric tons over the life of the program

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

Health Benefits:

- EPA estimates that the air pollution reductions from these standards will provide $13 billion in annual health benefits.
- In 2055, EPA estimates harmful pollutants will be significantly reduced (compared to 2055 levels without the final standards) including:
  - 8,700 tons of particulate matter
  - 36,000 tons of nitrogen oxides
  - 150,000 tons of volatile organic compounds

Overview: Vehicle Types

- The LDV standards apply to passenger cars, light trucks, and heavier vehicles designed primarily for the transportation of people, consistent with previous EPA criteria pollutant and greenhouse gas standards
- The MDV category includes heavy-duty Class 2b and 3 vehicles (vehicles with a gross vehicle weight rating (GVWR) of between 8,501 and 14,000 pounds)
  - Class 4 and higher vehicles remain under EPA's heavy-duty vehicle program
  - The MDV category primarily includes large pickups and vans that are typically used for work due to their higher towing and hauling capabilities compared to light-duty vehicles

Overview: GHG Emissions Standards

- For LDVs, the standards are projected to result in an industry-wide average target for the light-duty fleet of 85 grams/mile (g/mile) of CO2 in MY 2032, representing a nearly 50 percent reduction in projected fleet average emissions target levels relative to the existing MY 2026 standards.

Light-duty vehicle GHG standards: Projected targets, by regulatory class (CO_2 grams/mile)

	2027	2028	2029	2030	2031	2032
Cars	139	125	112	99	86	73
Trucks	184	165	146	128	109	90
Total Light-Duty Fleet	170	153	136	119	102	85

Overview: GHG Emissions Standards

- For MDVs, EPA is revising the existing standards for MY 2027 and establishing new standards for MYs 2028-2032. When fully phased in, the MDV standards are projected to result in an average target of 274 g/mile of CO2 by MY 2032, representing a 44 percent reduction in projected fleet average emissions target levels relative to the existing MY 2026 standards.

Medium-duty vehicle GHG standards: Projected targets, by regulatory class (CO_2 grams/mile)

	2027	2028	2029	2030	2031	2032
Vans	392	391	355	317	281	245
Pickups	497	486	437	371	331	290
Total Medium-Duty Fleet	461	453	408	353	314	274

Overview: Criteria Pollutant Emissions Standards

- EPA is finalizing "Tier 4" criteria pollutant emissions standards for non-methane organic gases (NMOG), NOx, PM, and other criteria pollutants and their precursors.
- For LDVs, EPA is finalizing NMOG plus NOx standards that will phase down to a fleet average level of 15 milligrams per mile (mg/mi) by MY 2032, representing a 50 percent reduction from the existing 30 mg/mi standards for MY 2025 established in the Tier 3 rule in 2014.
- For MDVs, EPA is finalizing NMOG+NOx standards that will require a fleet average level of 75 mg/mi by MY 2033, representing a 58 percent to 70 percent reduction from the Tier 3 standards of 178 mg/mi for Class 2b vehicles and 247 mg/mi for Class 3 vehicles.
- The standards will also reduce emissions of mobile source air toxics.

Overview: Criteria Pollutant Emissions Standards

- For both LDVs and MDVs, EPA is finalizing a PM standard of 0.5 mg/mi and a requirement that the standard be met across three test cycles, including a cold temperature (-7 °C) test.
- The PM standard is a per-vehicle cap (not a fleet average) and will be fully phased in by MY 2030 for LDVs and by MY 2031 for MDVs.
- EPA projects the PM standard will reduce tailpipe PM emissions from gasoline vehicles by over 95 percent in addition to reducing mobile source air toxics.

Comparison with California's Advanced Clean Cars II

	EPA Final Rule for LDVs & MDVs	Advanced Clean Cars II (ACC II)
Model Years Covered	2027-2032	2026-2035
Criteria Pollutant Standards	NMOG+Nox standard more stringent than ACC II - 15 mg/mi by 2032 for LDVs - 75 mg/mi by 2033 for MDVs *Includes ZEVs in average PM standard more stringent than ACC II: - 0.5 mg/mi with requirement that the standard be met across three test cycles, including a cold temperature (-7 °C) test *Phase-in counts ZEVs	Maintain NMOG+NOx fleet average - 30 mg/mi for LDVs *Excludes ZEVs from the fleet average after MY 2029 Maintain Federal Test Procedure standard: - 1 mg/mi beginning with MY2025 - Reduced US06 standard from 6 mg/mi to 3 mg/mi *Phase-in excludes ZEVs
GHG Standards	GHG standard more stringent than ACC II : - 85 g/mi by 2032 for LDVs - 274 g/mi by 2032 for MDVs	Flatlines after 2025: - 175 g/mi for LDVs - 277 g/mi for MDVs
ZEV Assurance Measures	1. Battery State of Health (SOH) 2. Useable Battery Energy (UBE) 3. Battery & electric powertrain components Warranty	1. Battery SOH 2. Charge Rate 3. Range 4. Battery Warranty 5.'Propulsion-Related Parts' Warranty 6.Warranty Reporting
ZEV Sales Requirements	N/A	All new passenger cars, trucks, and SUVs sold in CA will be ZEVs by 2035

Summary: GHG Emissions Standards for HDVs – Phase 3

- On March 29, 2024, EPA announced a final rule, “Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3,” that sets stronger standards to reduce GHG emissions from HDVs beginning in MY 2027.
- The final “Phase 3” standards build on EPA’s Heavy-Duty Phase 2 program from 2016 and maintains that program’s flexible structure.
- The standards are technology-neutral and performance-based, allowing each manufacturer to choose what set of emissions control technologies is best suited for them and the needs of their customers.

Benefits: GHG Emissions Standards for HDVs – Phase 3

Climate & Health Benefits:

- The final standards for heavy-duty vehicles will avoid approximately 1 billion metric tons of GHG emissions from 2027 through 2055
- The final standards will reduce air pollution for the 72 million people who live near major truck freight routes, who bear the burden of higher levels of pollution and are more likely to be people of color or low-income

Overview: Vehicle Types

- The new standards will be applicable to HD vocational vehicles (such as delivery trucks, refuse haulers, public utility trucks, transit, shuttle, school buses, etc.) and tractors (such as day cabs and sleeper cabs on tractor-trailer trucks).

Overview: GHG Emissions Standards

- For heavy-duty vocational vehicles such as delivery trucks, refuse haulers, and public utility trucks, the Phase 3 standards vary according to vehicle type and range up to 60% stronger than the previous Phase 2 standards for MY 2032.
- For tractors such as day cabs and sleeper cabs on tractor-trailer trucks, the Phase 3 standards vary according to vehicle type and range up to 40% stronger than the previous Phase 2 standards for MY 2032.

Overview: GHG Emissions Standards

Percent Reduction from the Phase 2 CO_2 Emission Standards						
Model Year:	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
Light-Heavy Vocational	17%	22%	27%	32%	46%	60%
Medium-Heavy Vocational	13%	16%	19%	22%	31%	40%
Heavy-Heavy Vocational	--	--	13%	15%	23%	30%
Day Cab Tractors	--	8%	12%	16%	28%	40%
Sleeper Cab Tractor	--	--	--	6%	12%	25%

Overview: Related Actions and The Clean Trucks Plan

- These HDV GHG standards complete the EPA's Clean Trucks Plan for reducing GHG emissions and other harmful air pollutants from heavy-duty trucks through a series of rulemakings. These rules include:
  1. the EPA's recently finalized light- and medium-duty vehicles final rule for MY 2027-2032 (which covers Class 2b and 3 trucks)
  2. the 2023 heavy-duty NOx final rule, and
  3. the GHG standards set by this rulemaking.
- The Clean Trucks Plan represents the most protective set of EPA regulations ever for the on-road sector while considering the significant emission reductions and cost savings that clean vehicle technology can provide.

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