6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 85, 86, and 1066

[EPA–HQ–OAR–2025–3297; FRL–13030–01–OAR]

RIN 2060-AW96

Revision of Tier 4 Criteria Pollutant Standards, Part 1: Amendments to Phase-In Schedule for Light-Duty and Medium-Duty Vehicles

AGENCY: Environmental Protection Agency (EPA)

ACTION: Proposed rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is reconsidering the Tier 4 criteria pollutant standards for new motor vehicles promulgated within the final rule entitled “Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles.” This reconsideration will occur in two separate, but coordinated, rulemakings. In this Part 1 rulemaking, the EPA is proposing to amend the phase-in schedule for the Tier 4 criteria pollutant standards for certain vehicles to address changing circumstances and feasibility concerns. These amendments, if finalized, would extend the Tier 3 standards for certain vehicles to model years (MYs) 2027 and 2028 such that the Tier 4 standards for these vehicles would phase in starting with MY 2029. The EPA is also proposing other changes to the test protocols used to evaluate emissions performance for certification and related regulatory issues. Potential

amendments to the Tier 4 standards and other program elements will be proposed separately in a future Part 2 rulemaking.

DATES:

Comments. Comments must be received on or before July 6, 2026, at 11:59 pm Eastern Time. Comments on the information collection provisions submitted to the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA) are best assured of consideration by OMB if OMB receives a copy of your comments on or before July 6, 2026.

Public Hearing. The EPA plans to hold a public hearing for this proposal on June 3 and 4, 2026. Please refer to the **SUPPLEMENTARY INFORMATION** section for additional information on the public hearing.

ADDRESSES: You may send comments, identified by Docket ID No. EPA–HQ–OAR– 2025–3297, by any of the following methods:

- *Federal eRulemaking Portal: https://www.regulations.gov* (our preferred method). Follow the online instructions for submitting comments. Pursuant to the Administrative Procedure Act at 5 U.S.C. 553(b)(4), a plain language summary of the rule is also available on the Federal eRulemaking Portal.
- *Email: a-and-r-docket@epa.gov*. Include Docket ID No. EPA–HQ–OAR–2025–3297 in the subject line of the message.
- *Mail:* U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA–HQ–OAR– 2025–3297, Mail Code 28221T, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460.

- *Hand/Courier Delivery:* EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m.–4:30 p.m., Monday–Friday (except Federal holidays). Comments received may be posted without change to *https://www.regulations.gov*, including any personal information provided. For detailed instructions on sending comments, see the "Public Participation" heading of the **GENERAL INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: For information about this proposed rule, contact Dr. John J. Kasab, Office of Transportation and Air Quality, U.S. Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, Michigan 48105; telephone number (734) 214-4559; and email address: *kasab.john@epa.gov*. Individuals who are deaf or hard of hearing, as well as individuals who have speech or communication disabilities, may use a relay service. To learn more about how to make an accessible telephone call to any of the numbers shown in this document, visit the webpage for the relay service of the Federal Communications Commission.

SUPPLEMENTARY INFORMATION:

A. Public Participation

Written Comments. Comments must be received on or before July 6, 2026, at 11:59 pm Eastern Time. All information will be available for inspection at the EPA Air Docket No. EPA–HQ–OAR–2025–3297. Submit your comments, identified by Docket ID No. EPA–HQ–OAR–2025–3297, at *https://www.regulations.gov* (our preferred method), or the other methods identified in the ADDRESSES section. Once submitted, comments

cannot be edited or removed from the docket. The EPA may publish any comment received to the Agency's public docket.

The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.*, on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about Confidential Business Information (CBI) or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa- dockets*.

Submitting Confidential Business Information. Do not submit information containing CBI to the EPA through *https://www.regulations.gov*. Clearly mark the part or all the information that you claim to be CBI. For CBI on any digital storage media that you mail to the EPA, note the docket ID, mark the outside of the digital storage media as CBI, and identify electronically within the digital storage media the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI directly to the public docket through the procedures outlined in the Public Participation section of this document. If you submit any digital storage media that does not contain CBI, mark the outside of the digital storage media clearly so that it does not contain CBI and note the docket ID. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in

accordance with procedures set forth in the Code of Federal Regulations (CFR), Title 40, part 2.

Our preferred method to receive CBI is electronic transmission using email attachments, File Transfer Protocol (FTP), or other online file sharing services (*e.g.*, Dropbox, OneDrive, Google Drive). Electronic submissions must be transmitted directly to the person listed in the **FOR FURTHER INFORMATION CONTACT** section. If sending CBI information through the postal service, please send it to the person listed in the **FOR FURTHER INFORMATION CONTACT** section and add "Attention Docket ID No. EPA–HQ–OAR–2025–3297." The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope.

Public Hearing. The EPA will hold a public hearing on this proposal on June 3 and 4, 2026. If there is sufficient interest, an additional day of hearings will be held on the subsequent day. Information on the public hearing is available at *https://www.epa.gov/regulations-emissions-vehicles-and-engines/revision-tier-4-phase-schedule-light-duty-and-medium*. Please also refer to this website for any updates regarding the hearings. The EPA does not intend to publish additional documents in the *Federal Register* announcing updates.

Please sign up for a speaking slot by emailing *EPA-LD-MobileSource-Hearings@epa.gov*. Note that each speaker will get three (3) minutes to speak.

B. Does this action apply to me?

Entities potentially affected by this proposed rule include light-duty vehicle manufacturers, independent commercial importers, alternative fuel converters, and manufacturers and converters of medium-duty vehicles (*i.e.*, vehicles between 8,501 pounds and 14,000 pounds gross vehicle weight rating (GVWR)). Potentially affected categories and entities include those shown in Table 1.

Table 1—Potentially Affected Categories and Entities

Category	NAICS codes[a]	Examples of potentially affected entities
Industry	336111	Motor Vehicle Manufacturers.
	336112	
Industry	811111	Commercial Importers of Vehicles and Vehicle Components.
	811112	
	811198	
	423110	
Industry	335312	Alternative Fuel Vehicle Converters.
	811198	
Industry	333618	On-highway medium-duty engine & vehicle (8,501–14,000 pounds GVWR) manufacturers.
	336120	
	336211	
	336312	

[a] North American Industry Classification System (NAICS).

This list is not intended to be exhaustive but rather provides a guide regarding entities likely to be affected by this action. To determine whether particular activities may be regulated by this action, you should carefully examine the regulations. You may direct questions regarding the applicability of this action to the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

C. Document Information

Preamble acronyms and abbreviations. Throughout this document the use of "we," "us," or "our" is intended to refer to the EPA. We use multiple acronyms and terms in

this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms as follows:

ABT	Averaging, banking, and trading
ACC II	Advanced Clean Cars II
APA	Administrative Procedure Act
AV	Annualized value
BEV	Battery electric vehicle
BPT	Benefit per ton
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CBI	Confidential Business Information
CFR	Code of Federal Regulations
CO	Carbon monoxide
CRA	Congressional Review Act
CY	Calendar year
DRIA	Draft Regulatory Impact Analysis
E.O.	Executive Order
EPA	U.S. Environmental Protection Agency
EV	Electric vehicle, a.k.a., battery electric vehicle
FR	*Federal Register*
FUL	Full useful life
GCWR	Gross combination weight rating
GHG	Greenhouse gas
GPF	Gasoline particulate filter
GVWR	Gross vehicle weight rating
HCHO	Formaldehyde
HEV	Hybrid electric vehicle
ICE	Internal combustion engine
LDV	Light-duty vehicle, a.k.a. passenger car
LDT	Light-duty truck
LMDV	Light- and medium-duty vehicle
MDPV	Medium-duty passenger vehicle
MDV	Medium-duty vehicle
MOVES	MOtor Vehicle Emissions Simulator model
MY	Model year
NAAQS	National Ambient Air Quality Standards

NMOG	Non-methane organic gases
NO_X	Nitrogen oxides, a.k.a. oxides of nitrogen
NPRM	Notice of proposed rulemaking
NTTAA	National Technology Transfer and Advancement Act
OBBB	One Big Beautiful Bill Act
OBD	On-board diagnostics
OMB	Office of Management and Budget
PHEV	Plug-in hybrid electric vehicle
PM	Particulate matter
PRA	Paperwork Reduction Act
PV	Present value
RFA	Regulatory Flexibility Act
RIA	Regulatory Impact Analysis
SFTP	Supplemental Federal Test Procedure
TWC	Three-way catalytic converter
UMRA	Unfunded Mandates Reform Act
U.S.	United States of America
U.S.C.	United States Code
VOC	Volatile organic compounds

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I. Executive Summary

The EPA is proposing to revise the criteria pollutant emission standards applicable to MYs 2027 and 2028 light-duty vehicles (LDVs), light-duty trucks (LDTs), medium-duty passenger vehicles (MDPVs), and medium-duty vehicles (MDVs) (collectively, "light- and medium-duty vehicles") pursuant to Clean Air Act (CAA) section 202(a). If finalized as proposed, the criteria pollutant emission standards established for MYs 2025 and beyond in the 2014 Tier 3 Rule[1] would apply to MYs 2027 and 2028, and the criteria pollutant emission standards established in the 2024 Tier 4 Rule[2] would be delayed until MY 2029.[3]

Under CAA section 202(a), the EPA promulgates standards for the emission of air pollutants from new motor vehicles which, in the Administrator's judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.[4] The standards can take effect only "after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period."[5] Thus, in

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[1] *See* "Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards," 79 FR 23414 (Apr. 28, 2014) ("2014 Tier 3 Rule").

[2] *See* "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles," 89 FR 27842 (Apr. 18, 2024) ("LMDV Multipollutant Rule").

[3] In this proposed rule, "criteria pollutants" refers generally to criteria pollutants and their precursors, including tailpipe non-methane organic gases (NMOG), oxides of nitrogen (NO_X), particulate matter (PM), and carbon monoxide (CO), as well as evaporative and refueling hydrocarbons.

[4] 42 U.S.C. 7521(a)(1).

[5] 42 U.S.C. 7521(a)(2).

establishing or revising standards under CAA section 202(a), the EPA also must consider issues of technological feasibility, the cost of compliance, and lead time, among other relevant considerations.

In this action, the EPA proposes to extend the Tier 3 standards applicable to MYs 2026 and beyond light- and medium-duty vehicles to MYs 2027 and 2028, thereby delaying the initial applicability of Tier 4 standards, to address recent developments and information before the Agency suggesting serious technical and feasibility concerns with compliance in the near term. Given the short time available for compliance with respect to MYs 2027 and 2028, the EPA believes that changes to the substance of the Tier 4 standards themselves would not be a feasible or appropriate way to address the technical and feasibility concerns described in this preamble and is limiting this proposal to extending the existing Tier 3 standards for MYs 2025 and beyond, which are familiar to regulated parties, to MYs 2027 and 2028. Potential changes to the Tier 4 standards will be addressed in a future rulemaking. The EPA seeks comment on all aspects of this proposed rule and looks forward to engagement with interested stakeholders as part of the Agency's regulatory development process.

A. Background for this Proposed Rule

On April 28, 2014, the EPA published criteria pollutant emission standards for light- and medium-duty vehicles pursuant to CAA section 202(a). These standards set emission limitations for criteria pollutants beginning in MY 2017 that increased in stringency on an annual basis and concluded with the most stringent Tier 3 standards

applicable to MYs 2025 and later vehicles. The Tier 3 standards required, as a general matter, a 70–80 percent reduction in criteria pollutant emissions for MYs 2025 and beyond LD vehicles as compared to MY 2017 vehicles.[6]

On April 18, 2024, the EPA published multipollutant emissions standards for light- and medium-duty vehicles pursuant to CAA section 202(a). The LMDV Multipollutant Rule established new, more stringent vehicle emissions standards for both criteria pollutant and greenhouse gas (GHG) emissions for MY 2027 through MY 2032 and beyond. The EPA refers to those criteria pollutant standards and program elements as the Tier 4 standards or the Tier 4 program. The non-methane organic gases and oxides of nitrogen ($NMOG+NO_X$) standards for light- and medium-duty vehicles were established based on a projected high market share of battery electric vehicles (BEVs), as the expected high BEV volumes would participate in the emissions averaging for $NMOG+NO_X$, thus enabling a manufacturer to meet the Tier 4 $NMOG+NO_X$ standards as they decreased to the final fleet-averaged values in MY 2032 or 2033.[7]

[6] *See* 79 FR 23417 (Apr. 28, 2014).

[7] On Feb. 18, 2026, the EPA published a final rule that rescinded the GHG emission standards contained in the LMDV Multipollutant Rule but did not reopen or amend the criteria pollutant emission standards. *See* "Rescission of the Greenhouse Gas Endangerment Finding and Motor Vehicle Greenhouse Gas Emission Standards Under the Clean Air Act," 91 FR 7686 (Feb. 18, 2026) ("EF/GHG Final Rule"). Note that any comments related to the EF/GHG Final Rule are considered out of scope for this proposal.

B. Summary of this Part 1 Proposed Rule

In this Part 1 rulemaking, the EPA is proposing to delay the phase-in of the Tier 4 criteria pollutant standards promulgated in the LMDV Multipollutant Rule for light- and medium-duty vehicles to address changed circumstances and feasibility concerns. Specifically, this action would extend the Tier 3 program through MYs 2027 and 2028 for both light- and medium-duty vehicles by proposing to replace the mandatory Tier 4 standards for light- and medium-duty vehicles up to 6,000 pounds GVWR and proposing to remove the optional Tier 4 standards for light- and medium-duty vehicles over 6,000 pounds GVWR. The EPA is also proposing to delay to MY 2029 changes to the test protocols used to evaluate emissions performance for certification. In the future Part 2 rulemaking, the EPA will comprehensively reconsider the Tier 4 program for light- and medium-duty vehicles, which may include, for example, changes to the Tier 4 emission standards, lead time and phase-in schedule, and test procedures.

C. Summary of the Basis and Justification for this Proposal

In this Part 1 rulemaking, the EPA is proposing to extend the Tier 3 standards for two additional MYs based on the Agency's consideration of the statutory factors in CAA section 202(a)(2), which requires that new or revised standards "shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of

compliance within such period."[8] The EPA is extending the Tier 3 standards and thus delaying the Tier 4 standards primarily due to concerns with lead time, that is, the time "necessary to permit the development and application of the requisite technology." The Tier 4 standards were predicated on projected high BEV market penetration. In the case of the NMOG+NO_X declining fleet average standard, BEVs are averaged into the fleet at zero grams per mile, thus reducing the fleet average NMOG+NO_X standard of any manufacturer that produces and sells BEVs. The higher the sales of BEVs for a given MY, the lower the manufacturer's fleet average NMOG+NO_X standard performance. In the case of PM standards, BEVs would not require any added PM equipment as their PM tailpipe emissions are zero grams per mile. Given that the Tier 4 PM standards are phased in at the rate of 20 percent in MY 2027 and 40 percent in MY 2028, high BEV sales would mean that many manufacturers would require fewer, and potentially no, additional PM controls on their conventional gasoline vehicles to comply with the phase-in requirements. Collectively, this meant that manufacturers did not plan on the need to reduce emissions from non-BEV vehicles for MYs 2027 and 2028 to any significant degree. Manufacturers correspondingly built their product mix and compliance strategies on this assumption, which reflected the EPA's predictive judgments at the time about trends relevant to the feasibility of the Tier 4 standards.

[8] 42 U.S.C. 7521(a)(2).

Since the promulgation of the Tier 4 standards in April 2024, significant changes in the automotive marketplace, regulations, and Federal and State laws have substantially impacted manufacturers' future product plans for light- and medium-duty vehicles, particularly the development, production, and sales of BEVs. Recent legislation, including the June 2025 Congressional Review Act (CRA) resolution voiding the EPA's preemption waiver for California's Advanced Clean Cars II (ACC II) standards[9] and the One Big Beautiful Bill Act (OBBB)[10] enacted in July 2025, contributed to a change in consumer demand and production choices and has impacted near-term projections of BEV market share from what the EPA considered when developing the Tier 4 standards in the LMDV Multipollutant Rule. In addition, domestic and global macroeconomic factors that are expected to impact vehicle purchase decisions have changed since the EPA issued the LMDV Multipollutant Rule, both in terms of timing and in terms of types of vehicles consumers are likely to purchase.

In light of these changes, the EPA now projects that the share of new light-duty BEVs sold in the market will be significantly lower in MYs 2027 and 2028 than the

[9] *See* "Providing congressional disapproval under chapter 8 of title 5, United States Code, of the rule submitted by the Environmental Protection Agency relating to 'California State Motor Vehicle and Engine Pollution Control Standards; Advanced Clean Cars II; Waiver of Preemption; Notice of Decision,'" Pub. L. 119-16, June 12, 2025, 139 Stat. 66.

[10] *See* "An act to provide for reconciliation pursuant to title II of H. Con. Res. 14." ("One Big Beautiful Bill Act," or OBBB), Pub. L. 119-21, July 4, 2025, 139 Stat. 72. Specifically, OBBB ends incentives such as the 30D tax credits for purchasing BEVs earlier than originally scheduled. The EPA considered these incentives in developing the LMDV Multipollutant Rule. Other incentives that would have facilitated BEV adoption were also ended early by the OBBB.

Agency previously estimated in the LMDV Multipollutant Rule.[11] These revised projections are supported by recent announcements and developments in the industry as detailed in section II of this preamble. The EPA expects that every manufacturer that sells a mix of conventional and electric vehicles has been significantly impacted by these changes. Manufacturers who were planning to rely on BEVs for Tier 4 standards compliance will be faced with fewer BEV sales than previously expected and have a limited time to alter their product plans for MYs 2027 and 2028. Given that zero emission BEVs significantly assist any fleet average and can eliminate the need for additional emission controls on non-BEV vehicles, manufacturers would need to rely on unplanned modifications to large numbers of non-BEV vehicles to meet the Tier 4 standards. Thus, given the significant disruption in manufacturer product planning, the EPA proposes finding that more time is "necessary to permit the … application of the requisite technology" into new, compliant vehicles.[12]

Manufacturers are now faced with a vastly different compliance landscape wherein they need to rely on emission reductions from non-BEV vehicles, rather than increased BEV sales. As a result, EPA is reconsidering the Tier 4 standards through a two-part rulemaking. This Part 1 proposal is in recognition that the impacts of the past two years on the automotive industry are significant enough that the EPA believes the

[11] *See* U.S. Environmental Protection Agency. (2026). "Battery Electric Vehicle Projected Market Share Analysis." EPA–HQ–OAR–2025–3297.
[12] 42 U.S.C. 7521(a)(2).

start of the Tier 4 program should be delayed by two MYs. The EPA proposes a two-year delay based on industry practices that indicate a year to 18 months would be necessary to adjust production plans, and the industry has not had sufficient time to respond to the enormous changes in the BEV landscape, and companies' ability to comply with Tier 4 for MYs 2027 and 2028 are in jeopardy. The EPA is therefore proposing to extend the Tier 3 program by two additional MYs. In parallel, but with a longer timeline, the EPA will develop the Tier 4 reconsideration Part 2 rulemaking. In the future Part 2 rulemaking, the EPA will comprehensively reconsider the Tier 4 program for light- and medium-duty vehicles, which may include, for example, changes to the Tier 4 emission standards, lead time and phase-in schedule, and test procedures. This proposed Part 1 rulemaking, if finalized, would allow manufacturers to continue meeting the Tier 3 standards for two more years while the EPA develops the Part 2 rule, which may amend the Tier 4 program for later MYs. Vehicle manufacturers are already in compliance with the Tier 3 program, so extending the Tier 3 requirements should be technically feasible and minimally disruptive to their current plans. Aligning other provisions beyond standards, such as test procedures, with Tier 3 requirements allows manufacturers to continue with the well-known Tier 3 procedures while they develop non-BEV products to comply with the updated Tier 4 procedures.

II. Proposed Amendments to Light- and Medium-Duty Vehicle Tier 4 Phase-In Schedules for Model Years 2027 and 2028

A. Introduction and Background

On April 28, 2014, the EPA promulgated standards under CAA section 202(a) for criteria pollutant emissions from light-duty and medium-duty vehicles in its 2014 Tier 3 Rule.[13] The EPA subsequently published the LMDV Multipollutant Rule on April 18, 2024, which introduced, among other provisions, the Tier 4 criteria pollutant standards for NMOG+NO_X, PM, CO, and formaldehyde (HCHO). The Tier 4 standards also include changes to the test cycles used to evaluate emissions performance for certification and other items, such as high-altitude standards for NMOG+NO_X.

The Tier 4 standards are currently scheduled to go into effect in MY 2027, starting with light-duty program vehicles (*i.e.*, LDVs, LDTs, and MDPVs) that are up to 6,000 pounds GVWR. CAA section 202(a)(3)(C) states that revised standards for "heavy-duty" vehicles, defined as those vehicles over 6,000 pounds GVWR, be subject to three MYs of stability and four MYs of lead time.[14] In following with these CAA

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[13] *See* "Control of Air Pollution From Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards," 79 FR 23414 (Apr. 28, 2014) ("2014 Tier 3 Rule").

[14] While the EPA applies several regulatory classes (LDV, LDT, MDPV, MDV) in the structure of its Tier 3 and Tier 4 programs, LDVs and MDVs have different phase-in and lead-time provisions under the CAA based on their GVWR. Per CAA section 202(b)(3)(C), a vehicle with a GVWR over 6,000 pounds is considered a "heavy duty vehicle," and per CAA section 202(a)(3)(C) standards promulgated for these vehicles "shall apply for a period of no less than 3 model years beginning no earlier than the model year

requirements, the standards for light-duty program vehicles up to 6,000 pounds GVWR follow a declining fleet average standard for NMOG+NO_X that decreases from the Tier 3 fleet average of 30 milligrams per mile (mg/mile) in MY 2026 to 15 mg/mile by MY 2032, a 50 percent reduction in NMOG+NO_X standards.[15] Manufacturers may choose to have their light-duty program vehicles over 6,000 pounds GVWR follow either the default, single-step phase-in in MY 2030 or follow an optional early phase-in schedule that aligns with that of light-duty program vehicles up to 6,000 pounds GVWR.[16]

For MDVs, the EPA finalized Tier 4 NMOG+NO_X standards that step down the fleet average level to 75 mg/mile starting in MY 2031, representing a 58 percent reduction from the Tier 3 standard of 178 mg/mile for Class 2b vehicles and a 70 percent reduction from the Tier 3 standard of 247 mg/mile for Class 3 vehicles.[17] MDVs may follow either the default, single-step phase-in in MY 2031 or an optional early phase-in schedule.[18]

The NMOG+NO_X standards for light- and medium-duty vehicles were established based on a projected high market share of BEVs, as the expected high BEV volumes

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commencing 4 years after such revised standard is promulgated." Vehicles up to 6,000 pounds GVWR are not subject to lead time or stability constraints. *See* 40 CFR 86.1811-17 (for Tier 3) and 40 CFR 86.1811-27 (for Tier 4). 40 CFR 86.1803-01 provides the definitions that classify these vehicles necessary to apply the weight-based rules.

[15] *See* 2014 Tier 3 Rule and Table 39 of LMDV Multipollutant Rule at 89 FR 27935. Note that the default option for heavier LDVs of 6,001–8,500 pounds reduces the fleet average NMOG+NO_X standard from 30 mg/mile in MY 2029 to 15 mg/mile in MY 2030.

[16] *See* Table 39, LMDV Multipollutant Rule at 89 FR 27935 (Apr. 18, 2024).

[17] *See* Table 42 of LMDV Multipollutant Rule at 89 FR 27937 (Apr. 18, 2024).

[18] *See* Tables 41 and 42, LMDV Multipollutant Rule at 89 FR 27937 (Apr. 18, 2024).

would participate in the emissions averaging for NMOG+NO_X. This BEV share would enable a firm to meet the Tier 4 NMOG+NO_X standards. The EPA also finalized a cold ambient temperature (−7 °C) NMOG+NO_X standard for all light- and medium-duty vehicles and eliminated the Supplemental Federal Test Procedure (SFTP) to reduce emissions over a broad range of operating conditions.

For all light- and medium-duty vehicles, the EPA also finalized a PM standard of 0.5 mg/mile and a requirement that the standard be met across three test cycles, including a cold temperature test (−7 °C Federal Test Procedure (FTP)-75) and a high-speed highway driving test (US06). This standard supplanted the existing PM standard of 3 mg/mile established in the 2014 Tier 3 Rule for light-duty program vehicles and higher PM standards for MDVs. The revised PM standards are projected to result in the broad adoption of gasoline particulate filters (GPF) on all gasoline vehicles.

In the LMDV Multipollutant Rule, the EPA also finalized in-use standards for MDVs with high gross combination weight rating (GCWR), changes to MDV refueling emissions requirements for incomplete vehicles, and several other NMOG+NO_X provisions. The EPA also finalized changes to the CO and HCHO standards for light- and medium-duty vehicles, including at −7 °C.

These schedules for light- and medium-duty vehicles are summarized in Table 2, where each value represents the minimum fraction of vehicles that must be certified to

the Tier 4 standards.[19] If the value is less than 100 percent, the remaining new vehicles may be certified as interim Tier 4 vehicles. An interim Tier 4 vehicle is a vehicle that is produced during the phase-in years and does not meet the Tier 4 standards, but rather meets the Tier 3 standards.

Table 2—Tier 4 Light-Duty and Medium-Duty Vehicle Criteria Pollutant Phase-in Schedules

	Vehicle GVWR ≤ 6000 lb	**Vehicle GVWR 6001–8500 lb and MDPV**		**MDV (GVWR 8501–14000 lb)**	
Model Year		Default	Early Option	Default	Early Option
2027	20%	0%	20%	0%	20%
2028	40%	0%	40%	0%	40%
2029	60%	0%	60%	0%	60%
2030	100%	100%	100%	0%	80%
2031	100%	100%	100%	100%	100%

MDV refers to medium-duty vehicle, which is a combination of both Class 2b and 3 vehicles as defined in 40 CFR 86.1803-01.

The Tier 4 standards include per-vehicle standards for PM, CO, and HCHO and a fleet average standard for NMOG+NO_X. The Tier 3 and Tier 4 PM standards are shown in Table 3, while the Tier 4 CO and HCHO standards are shown in Table 4.[20] NMOG+NO_X standards are shown later in this section.

Table 3—Tier 3 and Tier 4 Light-Duty and Medium-Duty Vehicle PM Standards

Test Cycle	LDV, LDT, MDPV PM standards (mg/mi)		MDV (Class 2b and 3) PM standards (mg/mi)	
	Tier 3	Tier 4	Tier 3	Tier 4

[19] *See* Tables 33 and 35, LMDV Multipollutant Rule at 89 FR 27930 and 27932 (Apr. 18, 2024), respectively.

[20] *See* Tables 43, 44, 45, and 46, LMDV Multipollutant Rule at 89 FR 27939, 27939, 27947, and 27948 (Apr. 18, 2024), respectively.

25°C FTP	3	0.5	8 for Class 2b 10 for Class 3	0.5
US06	6	0.5	10 for Class 2b on SFTP 7 for Class 3 on SFTP	0.5
−7°C FTP	Not applicable	0.5	Not applicable	0.5

Table 4—Tier 4 Light-Duty and Medium-Duty Vehicle CO and HCHO Emission Standards

Per-vehicle emission standards	LDV, LDT, MDPV	MDV
CO std. for 25°C FTP, HFET, SC03 (g/mile)	1.7	3.2
CO std. for US06 (g/mile)	9.6	25
CO std. for −7°C FTP (g/mile)	10.0	10.0
HCHO std. for 25°C FTP (mg/mile)	4	6

In addition to the differences between Tier 3 and Tier 4 per-vehicle criteria pollutant standards shown in Table 3, there are differences in certification requirements. These differences are summarized in Table 5.

Table 5—Comparison of Selected Tier 3 and Tier 4 Requirements

Item	Tier 3 (Interim Tier 4)	Tier 4

Main test cycle[a]	25°C FTP-75	25°C FTP-75
Supplemental FTP[a]	Weighted average of FTP-75, SC03, and US06. For Class 3 MDV use FTP-75, SC03, and LA-92.	Separate US06 and −7 °C FTP-75 measurements for NMOG+NO_X; US06, for CO and PM; Use US06 for Class 3 MDV.
PM standards	Measured on 25 °C FTP-75 and US06	Measured on −7 °C FTP-75, 25 °C FTP-75, and US06
Additional tests	—	Early drive-away and mid-temperature engine starts. High-power cold start for PHEV [a].
NMOG+NO_X bin structure	Bins 0, 20, 30, 50, 70, 125, 160	Bins 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70
Additional MDV bins	150, 170, 200, 230, 250, 270, 340, 400, 570	75, 85, 100, 125, 150, 170
High altitude NMOG+NO_X requirements (1620 m)	Relaxed NMOG+NO_X standard at high altitude, *e.g.*, 50 mg/mi for Bin 30	Same NMOG+NO_X result required at high altitude as at low altitude

[a] The 25 °C FTP-75, −7 °C FTP -75, LA-92, SC03, and US06 drive cycles are all defined in Appendix I of 40 CFR part 86. Plug-in Hybrid Electric Vehicle (PHEV)

The Tier 4 light-duty program vehicle phase-in schedules of sales-weighted fleet average NMOG+NO_X standards are shown in Table 6 with the Tier 3 standard in MY 2026 included for reference.[21] The sales-weighted fleet average NMOG+NO_X standards for MDVs are shown in Table 7.[22] Note that the PM, CO, and HCHO standards are per-vehicle standards subject to the phase-in schedules shown in Table 2 whereas the NMOG+NO_X standards represent fleet averages and follow the phase-in schedules shown in Tables 6 and 7.

[21] *See* Table 39, LMDV Multipollutant Rule at 89 FR 27935 (Apr. 18, 2024).

[22] *See* Tables 41 and 42, LMDV Multipollutant Rule at 89 FR 27937 (Apr. 18, 2024).

Table 6—Tier 4 LDV, LDT, and MDPV Fleet Average NMOG+NO_X Standards

Model Year	LDV, LDT1-2 (GVWR ≤ 6000 lb) NMOG+NO_X (mg/mi.)	LDT3-4 (GVWR 6001–8500 lb) and MDPV NMOG+NO_X (mg/mi.)	
	Default	Default	Early option
2026[a]	30[a]	30[a]	30[a]
2027	25	30	25
2028	23	30	23
2029	21	30	21
2030	19	15	19
2031	17	15	17
2032 and later	15	15	15

[a] Tier 3 standards provided for reference.

Table 7—Tier 4 MDV Fleet Average NMOG+NO_X Standards

Model Year	Class 2b NMOG+NO_X (mg/mi)		Class 3 NMOG+NO_X (mg/mi)	
	Default	Early option	Default	Early option
2026[a]	178[a]	178[a]	247[a]	247[a]
2027	178	175	247	175
2028	178	160	247	160
2029	178	140	247	140
2030	178	120	247	120
2031[b]	75	100	75	100
2032[b]	75	80	75	80
2033 and later[b]	75	75	75	75

[a] Tier 3 FTP fleet average standards provided for reference.
[b] MDV with a GCWR greater than 22,000 pounds must also comply with additional moving average window (MAW) in-use testing requirements.

In addition to changing the numeric standards as shown in Tables 3, 4, 6, and 7, the EPA also expanded the Tier 4 testing requirements to ensure robust emissions control over a broad range of operating conditions, such as at cold ambient temperatures or high altitudes.

The EPA expected that vehicle manufacturers would meet the fleet average standards for NMOG+NO_X and per-vehicle standards for PM, CO, and HCHO through a combination of technologies that included a significantly increased adoption of BEVs,

which certify as emitting zero mg/mile of all tailpipe emissions, and better emissions control technologies for internal combustion engine (ICE) vehicles, hybrid electric vehicles (HEVs), and plug-in hybrid electric vehicles (PHEVs). Further discussion of these technologies can be found in the LMDV Multipollutant Rule's Regulatory Impact Analysis ("LMDV RIA") and in Chapter 2 of the 2023 proposed LMDV Multipollutant Rule's Draft RIA ("LMDV DRIA").[23]

B. Why Is the EPA Proposing These Amendments?

As discussed in this proposal, recent changes in policy, regulations, Federal and State law, and other factors have significantly changed projections of BEV market share in the coming MYs. Due to the significant change in the BEV landscape, the EPA is reconsidering the Tier 4 light- and medium-duty vehicle program in two separate but coordinated rulemakings, the Part 1 rule and the Part 2 rule. In this Part 1 rule proposal, the EPA is proposing to extend the Tier 3 program by two MYs (MYs 2027 and 2028). The EPA provides in this section II.B details regarding the basis for this Part 1 rule proposal. In the future Part 2 rule, the EPA will comprehensively reconsider the Tier 4

[23] *See* Chapter 3.2.5 at 3-52 of U.S. Environmental Protection Agency, *Regulatory Impact Analysis: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles*, (March 2024), available at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VPM.pdf. ("LMDV RIA"); and Chapter 2 of U.S. Environmental Protection Agency, *Draft Regulatory Impact Analysis: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles*, (April 2023), available at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P10175J2.pdf. ("LMDV DRIA").

program for light- and medium-duty vehicles, which may include, for example, changes to the Tier 4 emission standards, lead time and phase-in schedule, and test procedures.

1. Changes in Federal and State policies and laws related to electric vehicles and electric vehicle infrastructure development

The conditions upon which the EPA based the analysis of BEV adoption rates in the LMDV Multipollutant Rule have changed significantly due to several factors, including Federal and State policies and laws related to electric vehicles and electric vehicle infrastructure development and the Agency's understanding of consumer interest in BEVs.

In May 2025, Congress passed legislation disapproving the EPA's preemption waiver for California's ACC II standards; President Trump signed this legislation into law in June 2025.[24] Because CAA section 209(a) bars States and localities from adopting or attempting to enforce non-Federal emission standards for new motor vehicles absent a valid preemption waiver, this legislation effectively blocks California's mandate to phase out ICE vehicle sales by 2035. Twelve other States that previously adopted ACC II pursuant to CAA section 177 can no longer enforce it. The result has been a significant

[24] *See* "Providing congressional disapproval under chapter 8 of title 5, United States Code, of the rule submitted by the Environmental Protection Agency relating to 'California State Motor Vehicle and Engine Pollution Control Standards; Advanced Clean Cars II; Waiver of Preemption; Notice of Decision,'" Pub. L. 119-16, 139 Stat. 66 (June 12, 2025); EF/GHG Final Rule.

change in projected demand for BEVs and ICE vehicles resulting from the absence of this significant regulatory influence.

On July 4, 2025, President Trump signed the OBBB, which significantly changed tax incentives for BEVs.[25] Specifically, the OBBB ended incentives such as the 30D tax credits for purchasing BEVs earlier than originally scheduled. Other incentives, such as the 25E Previously-Owned Clean Vehicle Credit and the 45W Commercial Clean Vehicle Credit, that were predicted to facilitate BEV adoption were also ended early by the OBBB. The EPA considered and relied on these incentives to estimate BEV market share in developing the LMDV Multipollutant Rule. These actions are projected to significantly reduce new BEV sales for future MYs, including MYs 2027 and 2028, as described in the following paragraph.

Collectively, these changes are expected to significantly affect the ability of manufacturers to comply with the Tier 4 standards. In the LMDV Multipollutant Rule, the central analysis case projections for BEV market share for all light-duty program vehicles in MYs 2027 and 2028 were 26 and 31 percent, respectively, and for vehicles up to 6,000 pounds, 28 and 33 percent, respectively.[26] By contrast, for this proposal, the EPA projects the overall BEV market share values are eight percent in MY 2027 and 12

[25] *See* OBBB.

[26] *See* Table 3 of LMDV Multipollutant Rule at 27856 and Tables 12-64 and 12-65 of the LMDV RIA at 12-35 and 12-36, respectively.

percent in MY 2028.[27] These values are consistent with recent projections from Bloomberg New Energy Finance, J.D. Power, Auto Pacific, and Ford Motor Company, as discussed in section III.A of this preamble. The 8 and 12 percent BEV market shares in MYs 2027 and 2028, respectively, are relevant to Tier 4 compliance because BEVs certify with zero mg/mile emissions. Nevertheless, each manufacturer would need to apply Tier 4 compliance technology to a portion of their MYs 2027 and 2028 ICE vehicles to meet the Tier 4 program phase-in requirements under current projections. Specifically, 12 percent of vehicles up to 6,000 pounds would need to have ICE Tier 4 compliance technology in MY 2027 to reach a total of 20 percent final Tier 4 compliant vehicles, and 28 percent in MY 2028 to reach 40 percent final Tier 4 compliant vehicles.

The EPA believes that manufacturers that based their compliance strategies with the Tier 4 standards in whole or in part on plans for increased development and sales of BEVs now need to reconfigure their compliance plans, which can entail changes in future product development, vehicle sales mix, vehicle technology, and vehicle marketing. A two-year extension of the Tier 3 program is needed to ensure the industry can comply with the EPA's emission standards.

[27] *See* U.S. Environmental Protection Agency. (2026). "Battery Electric Vehicle Projected Market Share Analysis." EPA–HQ–OAR–2025–3297.

2. Impact of policy changes on compliance with Tier 4 standards

As discussed above, in the LMDV Multipollutant Rule, the EPA projected significant adoption of BEVs in future MYs, including MYs 2027 and 2028. The EPA projected that the increase in BEVs in future MYs would contribute to automakers' ability to meet Tier 4 standards. The EPA Tier 4 standards for NMOG+NO_X emissions from light- and medium-duty vehicles use sales-weighted fleet averages. This regulatory approach recognizes that manufacturers may use a mixture of ICE vehicles (including HEVs and PHEVs), and BEVs to meet the standards. The EPA projected that the increase in BEVs in future MYs would contribute to automakers' ability to meet the NMOG+NO_X standards. Each BEV counts as a zero for emissions in the NMOG+NO_X fleet average standard. Therefore, the BEV market share affects how many ICE, HEV, and PHEV vehicles need technology improvement to further reduce NMOG+NO_X emissions. The EPA projected, and many manufacturers assumed, that manufacturers would be able to comply with this fleet average standard primarily with BEV sales. BEV market share also affects how vehicles manufacturers meet the per-vehicle standards for other pollutants. For example, since BEVs have zero tailpipe PM emissions, any BEV sold would count toward the per-vehicle phase-in requirement for PM, essentially meaning manufacturers would have to install fewer GPFs on gasoline ICE vehicles to reduce PM to the Tier 4 standard. In other words, if the phase-in schedule required 20 percent compliance with Tier 4 per-vehicle standards in MY 2027, and the EPA projected a BEV market share of 26 percent for light-duty program vehicles for that same MY, a manufacturer might have heavily or even completely relied on BEVs to meet that

standard. Whereas if BEVs make up a much smaller market share, it would follow that the same manufacturer might not be able to achieve compliance in the same manner, and may need to invest in additional compliance technologies for ICE vehicles on which it did not initially plan.

BEV market share also affects how manufacturers meet the per-vehicle standards for other pollutants. Since BEVs have zero tailpipe PM emissions, any BEV sold would count toward the per-vehicle phase-in requirement for PM, essentially meaning manufacturers would have to install fewer GPFs on gasoline ICE vehicles to reduce PM to the Tier 4 standard.

3. Automaker Response to Changes in the BEV Landscape

Many major automakers are adjusting their BEV development and production strategies based on policy, legislative, regulatory, and marketplace changes that have impacted consumer demand. This level of change creates significant challenges for manufacturers not only for their compliance strategies, but also basic business decisions such as vehicle mix, plant construction, battery development, finance, and marketing strategies. Many manufacturers have slowed their BEV expansion plans and shifted focus toward ICE vehicles (including HEVs). The following summary is meant to describe

changes some manufacturers have announced to their product plans that lend support for this proposal to extend the Tier 3 standards for MYs 2027 and 2028.[28]

In June 2025, General Motors (GM) announced a $4 billion investment in engine and vehicle production in three U.S. facilities in Michigan, Kansas, and Tennessee as it moves to boost production of ICE vehicles in response to slowing BEV demand.[29] In October 2025 GM announced that it took a $1.6 billion impairment charge to align its BEV manufacturing capacity with consumer demand.[30] In January 2026, GM announced a further "$6 billion charge to unwind some electric-vehicle investments."[31]

Ford Motor Company (Ford) has also reduced spending on BEVs and scaled back previously announced production plans for existing BEVs and future BEV launches. Ford cancelled plans for a three-row electric sport utility vehicle (SUV) and delayed the launch of major platforms such as the F-150 Lightning successor and a new E-Transit van until 2028.[32] Ford announced a strategic pivot to hybrids citing customer demand. In September 2025, Ford stated that the U.S. BEV market will be "way smaller than we

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[28] Note that the EPA has not relied on any CBI in this summary.

[29] *See* Hall, K. and Shepardson, D. (2025). "GM to invest $4 billion in three US facilities as it ramps up gas-powered vehicles." *Reuters*: *https://www.reuters.com/business/autos-transportation/general-motors-investing-3-us-facilities-production-gas-electric-vehicles-2025-06-10/*.

[30] *See* Staff. (2025). "GM announces $1.6B charge on dwindling EV adoption," *The Business Journal (Youngstown)*: *https://businessjournaldaily.com/gm-announces-1-6b-charge-on-dwindling-ev-adoption/*.

[31] Staff. (2026). GM to take $6 billion writedown on EV pullback. *Reuters*: *https://www.reuters.com/business/autos-transportation/gm-take-6-billion-writedown-ev-pullback-2026-01-08/*.

[32] *See* Tucker, S. (2024). Ford shuffles EV plans: Canceling, delaying big ones. *Kelley Blue Book*: *https://www.kbb.com/car-news/ford-shuffles-ev-plans-canceling-delaying-big-ones/*.

thought," projecting that the BEV market will be cut in half after the current incentives expire. Ford also stated that it will plan more affordable, smaller BEVs to compete with Tesla and BYD.[33] Ford's adjustments include battery manufacturing capacity and in October 2025, Ford scaled back a major lithium supply deal, reflecting the industry's more cautious outlook on BEV growth.[34] Furthermore, in December 2025, Ford announced a $19.5 billion write-down in its investments in BEVs.[35]

Stellantis, which includes the Chrysler, Jeep, and RAM nameplates, is also shifting away from BEVs.[36] Stellantis is instead adopting hybrid technology and emphasizing flexible vehicle platforms that can accommodate ICE, hybrid, and electric powertrains. As part of this shift in product, Stellantis announced that it is reviving the Hemi V8 engine for Jeep models and is cancelling the all-electric Ram 1500 REV pickup in lieu of a range-extended hybrid version.[37] On January 9, 2026, Stellantis announced it

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[33] *See* Wayland, M. (2025). Ford CEO expects EV sales to be cut in half after end of tax credits. *CNBC*: *https://www.cnbc.com/2025/09/30/ford-ceo-jim-farley-ev-incentives.html.*

[34] *See* Bloomberg. (2025). Ford Delays Lithium Supply Deal as EV Struggles Continue, *https://www.supplychainbrain.com/articles/42643-ford-delays-lithium-supply-deal-as-ev-struggles-continue*.

[35] *See* Colias, M. (2025). Ford's $19.5 billion EV writedown: Five things to know. *Reuters; https://www.reuters.com/business/autos-transportation/fords-195-billion-ev-writedown-five-things-know-2025-12-16/.*

[36] *See* Reuters. (2025). Stellantis to scrap target of 100% EVs by 2030, says Europe chief, *https://www.reuters.com/business/autos-transportation/stellantis-scrap-target-100-evs-by-2030-says-europe-chief-2025-09-08/.*

[37] *See* Walz, E. (2025). Stellantis cancels electric RAM pickup amid slowing EV demand. *WardsAuto: https://www.wardsauto.com/news/archive-auto-stellantis-cancels-ram-1500-bev-electric-pickup-rev-extended-range/760779*.

was scrapping its PHEV vehicle lineup citing waning customer demand.[38] Stellantis also announced on February 6, 2026, that it was taking a $26.5 billion charge against its BEV investments.[39]

Honda also announced the slowdown of BEV developments in the past year, reducing its BEV spending by 30 percent and pausing a $10.7 billion Canadian BEV factory conversion for two years, citing slower-than-anticipated BEV market expansion.[40] Honda discontinued the Acura ZDX BEV[41] and cancelled plans to launch its new "0 Series" BEVs, the 0 Series SUV, the 0 Series Saloon, and the Acura RSX, which would have been built starting in 2026, citing ”Recent changes in the business environment.”[42] Honda is focusing on hybrids with the rollout of 13 new hybrid models[43] by 2031 in addition to their current hybrid lineup and ICE vehicles. Volkswagen is adjusting production plans and has halted production at some German BEV plants in response to weaker-than-anticipated demand. In September 2025, the Volkswagen

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[38] *See* Wayland, M. (2026). Stellantis scraps Jeep, Chrysler plug-in hybrid vehicles amid EV slowdown, recall. *https://www.cnbc.com/2026/01/09/stellantis-scraps-jeep-chrysler-phevs-amid-ev-slowdown-recall.html.*

[39] *See* Revell, E. (2026). Stellantis takes massive $26B hit after moving away from EVs. *Fox Business; https://www.foxbusiness.com/markets/stellantis-takes-massive-26b-hit-after-moving-away-from-evs*.

[40] *See* Friedman, G. (2025). Honda reveals delay of $15-billion Canada investment part of shift in EV strategy. *Financial Post; https://financialpost.com/commodities/energy/electric-vehicles/honda-cutting-ev-investment-delaying-canadian-plans*.

[41] *See* Banner, J. (2025). Acura Just Canceled the ZDX EV, but the Brand’s Electric Story Isn’t Over. *MotorTrend*; *https://www.motortrend.com/news/acura-just-canceled-the-acura-zdx-ev.*

[42] *See* Honda. (2026). Honda Cancels 0 Series EVs, Acura RSX Just Months Before Production. *https://www.roadandtrack.com/news/a70722811/honda-cancels-0-series-acura-rsx-electric-vehicles/.*

[43] *See* Honda. (2025). https://automobiles.honda.com/; and Daniel Leussink. (2025). Japan’s Honda to scale back on electric vehicles, focus on hybrids. *Reuters*; *https://www.reuters.com/business/autos-transportation/japans-honda-scale-back-electric-vehicles-concentrate-hybrids-2025-05-20/*.

Group's chief executive officer said manufacturers were experiencing "massive changes" with "a clear drop in demand for battery-electric cars.[44]

Hyundai announced a significant increase in hybrid models from the five models available now to over 18 hybrid models by 2030.[45] Hyundai halted production of the Genesis Electrified GV70 BEV in Alabama to shift focus toward more popular and profitable hybrid SUVs like the Tucson. Hyundai recently announced significant changes in production plans in the U.S. and globally.[46]

The changes to BEV product plans summarized above are likely to significantly impact manufacturers' ability to comply with the Tier 4 standards. Vehicle manufacturers have the option to demonstrate compliance with the phase-in requirements using a mix of ICE vehicles, HEVs, PHEVs, and BEVs. Manufacturers planning to rely on BEV sales for their Tier 4 compliance plans have likely seen those plans change significantly in just the past year.

As discussed in the LMDV Multipollutant Rule, many manufacturers publicly reported significant projected near and long-term growth in BEVs and PHEVs in 2023

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[44] *See* O'Carroll, L. (2025). VW to pause production at two plants as electric vehicle sales stall. *The Guardian*; *https://www.theguardian.com/business/2025/sep/26/vw-to-pause-production-at-two-plants-as-electric-vehicle-sales-stall*.

[45] *See* Hyundai Motor Company. (2025). Hyundai Motor Company Unveils Bold 2030 Vision and Product Roadmap at 2025 CEO Investor Day, *https://www.hyundai.com/worldwide/en/newsroom/detail/hyundai-motor-company-unveils-bold-2030-vision-and-product-roadmap-at-2025-ceo-investor-day-0000001018;* and Hyundai Motor Company. (2025). Hybrid Vehicles | Hybrid Model Lineup | Hyundai USA, *https://www.hyundaiusa.com/us/en/electrified/hybrids.*

[46] *See* Johnson, P. (2025). Hyundai halts production of another luxury EV. *Electrek: https://electrek.co/2025/08/19/hyundai-halts-production-of-another-luxury-ev/*.

and 2024. In response to these manufacturer announcements and investments in these technologies and supporting infrastructure made by Congress, numerous third-parties, as well as the EPA, also projected significant growth of BEV and PHEV adoption, which the Agency considered and relied upon when developing and finalizing the LMDV Multipollutant Rule.[47] The EPA is revisiting these projections and the Tier 4 program in response to the many changes in Federal and State policies, Federal legislation, and Federal and State regulatory requirements that have occurred since the LMDV Multipollutant Rule was finalized in April 2024, as well as the actual consumer interest in purchasing BEVs. As discussed earlier, this Part 1 rule proposes to extend the Tier 3 program by two additional MYs due to feasibility concerns. In the future Part 2 rule, EPA will comprehensively reconsider the Tier 4 program for light- and medium-duty vehicles, which may include, for example, changes to the Tier 4 emission standards, lead time and phase-in schedule, and test procedures.

C. Automotive Vehicle Development Cycle Lead Time Considerations

Typical automobile development cycles run approximately four to five years, starting with initial concepts and continuing through vehicle prototypes, production tooling, and large-volume industrialization across a company's product lines. The time

[47] *See* "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles," 88 FR 29184 (May 5, 2023), Sections I.A.ii and I.A.iii at 29187–29196; and LMDV Multipollutant Rule, Sections I.A.2 and I.A.3 at 27845–27853.

needed to conceive, create, and deliver a new vehicle to market can be two and a half years or more.[48] Changes in existing vehicle platforms can vary from one year for a mid-cycle refresh to more than two years for a full-scale vehicle redesign. In addition, vehicle manufacturers often comply with incremental changes in EPA emission standards in a "surgical" manner, with only marginal headroom built into production capacity to cover sales fluctuations.

Manufacturers may respond to the changing conditions in several ways, with each option having a different lead time. Examples include changing the price of their BEVs—those not canceled or delayed—to compensate for lost purchasing and leasing tax incentives, restricting production of some ICE vehicles that do not support Tier 4 compliance, or developing additional ICE vehicles with the requisite technology to support Tier 4 compliance. The first two options—changing pricing and restricting ICE vehicle products—still may not result in a company being able to demonstrate compliance with the MYs 2027 and 2028 Tier 4 standards. Furthermore, they may have potentially significant near-term financial impacts on manufacturers and potentially negatively impact consumers through reduced choices of vehicle models. For these reasons, the EPA does not believe these two options are feasible for all manufacturers. The third option, developing additional improved ICE vehicles on short notice to meet

[48] *See* Center for Automotive Research. (2007). How Automakers Plan Their Products, *https://www.cargroup.org/wp-content/uploads/2017/02/HOW-AUTOMAKERS-PLAN-THEIR-PRODUCTS.pdf*.

the current Tier 4 phase-in requirements for MYs 2027 and 2028, is likely infeasible because there is not sufficient lead time for firms to make such changes.

D. Expected Manufacturer Response with Lower BEV Projections

In light of the change in the BEV landscape, the EPA now expects manufacturers would consider improvements to ICE vehicle technologies as a means to comply with the Tier 4 criteria pollutant program. This could include technology plans that require improvements in gasoline ICE vehicle exhaust aftertreatment systems, engine controls, and monitoring systems in several significant ways–approaches which require a change in companies' technology development plans which requires lead time. These improved systems include better three-way catalytic converters (TWCs) to reduce NMOG+NO_X emissions; the addition of GPFs to reduce PM emissions; and related electrical systems, software, and calibrations required to operate the modified and added hardware. In addition, new components and systems, such as GPFs, must be integrated into the vehicle exhaust aftertreatment system and may require changes to vehicle design and packaging, as well as changes to manufacturing production lines to install these components. Vehicle onboard diagnostics (OBD) that support the Tier 4 standards will also require additional development and calibration, with the OBD associated with the implementation of GPFs potentially representing a new requirement for manufacturers. Exhaust and aftertreatment components, such as catalysts, sensors, and GPFs, that are required to support more stringent standards are typically produced by automotive suppliers, with their own set of planning and production requirements and associated lead times. Finally, vehicle

manufacturers are also expected to improve their emissions test capabilities to ensure continued accurate measurement of PM emissions and the addition of cold ambient temperature PM testing. These actions normally require several years to accomplish.

Given the policy, legislative, regulatory, and marketplace changes which have occurred, the start of MY 2027, and the upcoming start of MY 2028, the EPA does not believe the automotive industry and supplier base have adequate lead time to revise their product plans to develop and industrialize the requisite ICE vehicle technology to support the near-term Tier 4 phase-in. The EPA believes that many manufacturers planned on high BEV sales to comply with the Tier 4 requirements and did not plan for the alternative, which is implementing changes, as described above, to large portions of their ICE product line. Manufacturers would need to revise plans, source suppliers, and make necessary changes to assembly lines to implement the updates needed in their ICE vehicles—but there is insufficient time to complete those steps for MYs 2027 and 2028. The EPA proposes that, at minimum, a two-year extension of the Tier 3 program is needed to ensure companies can comply with the Agency's emission standards. While some companies have certified Tier 4 vehicles for MY 2027, the product mix and sales volume for MY 2027 are unknown and thus the impacts on NMOG+NO_X fleet averages are unknown. No manufacturers have yet certified MY 2028 products. Based on the previous discussion on manufacturer product cycle development, the EPA proposes an initial two-year extension of the Tier 3 program in this Part 1 Tier 4 reconsideration rule. The EPA will continue to evaluate manufacturers' progress and the comments the Agency receives in response to this proposal to determine whether an additional

extension of Tier 3 may become necessary (*e.g.*, an extension to MY 2029). The issues the EPA discusses above with respect to the significant changes in the BEV landscape since the Agency issued the Tier 4 final rule in April 2024 extend beyond MYs 2027 and 2028. In the future Part 2 rule, the EPA will comprehensively reconsider the Tier 4 program for light- and medium-duty vehicles for future MYs beyond those addressed in this Part 1 rule. Changes to the Tier 4 program may include changes to elements such as the Tier 4 emission standards, lead time and phase-in schedule, and test procedures.

The recent changes in policy, regulations, Federal law, and near-term BEV market share projections have disrupted vehicle manufacturers' near-term product plans. BEVs were a major factor contributing to Tier 4 program compliance, both for the per-vehicle standards such as PM and for NMOG+NO_X fleet averaging standard. A lower projected BEV market share makes compliance with the Tier 4 standards challenging and perhaps unachievable. Therefore, the EPA is reconsidering the Tier 4 program. In this Part 1 rule proposal, the EPA is proposing to extend the Tier 3 standards through MYs 2027 and 2028 for light- and medium-duty vehicles due to feasibility concerns. This proposal is consistent with the EPA's responsibilities and authority under CAA sections 202(a) and (b). The EPA carefully considered the statutory factors, including technological feasibility, cost, and lead time for manufacturers to comply with the standards.[49] The two-year extension of the Tier 3 standards would result in a very small foregone

[49] 42 U.S.C. 7521(a).

reduction in emissions of criteria pollutants and air toxics and will represent significant cost savings for vehicle manufacturers in MYs 2027 and 2028 as discussed in section III.B of this preamble and Chapter 1 of the DRIA for this proposed rule.[50] Notably, the Tier 3 standards themselves represent a significant reduction in criteria pollutant emissions, and the MY 2025 and later standards that the Agency is proposing to extend to MYs 2027 and 2028 are the most stringent of the Tier 3 standards.

E. What Is the EPA Proposing to Change?

The EPA is proposing to extend the existing Tier 3 standards for light- and medium-duty vehicles through MYs 2027 and 2028. This proposed change, which is summarized in Tables 8 and 9, extends Tier 3 requirements to MYs 2027 and 2028 and then, in MY 2029, resumes the phase-in schedule for the Tier 4 requirements described in section II.A of this preamble, including the per-vehicle PM, CO, and HCHO standards. Tables 8 and 9 show the fraction of vehicles that will need to meet the Tier 3 or final Tier 4 standards. For example, "0% Tier 4" means that there is no minimum fraction of vehicles in a MY that must comply with all aspects of the Tier 4 program; rather, all vehicles sold can partially comply as interim Tier 4 vehicles. Likewise, "60% Tier 4" means that 60 percent of the vehicles sold must be certified to final Tier 4 standards and the remainder may be interim or final Tier 4. Additionally, the proposed early schedules

[50] U.S. Environmental Protection Agency, *Revision of Tier 4 Phase-In Schedule for Light-Duty and Medium-Duty Vehicles: Draft Regulatory Impact Analysis* (Apr. 2026) EPA Technical Report EPA-420-D-26-001 ("DRIA").

for heavier light- and medium-duty vehicles (*see* Tables 8 and 9, respectively) are intended to maintain alignment with the proposed phase-in schedule for vehicles up to 6,000 pounds GVWR. The reasons for this proposal are described in detail in section II.B of this preamble.

Table 8—Proposed Amended Tier 4 Light-Duty Program Vehicle Criteria Pollutant Phase-in Schedules

Model Year	**Vehicle GVWR ≤ 6000 lb**		**Vehicle GVWR 6001–8500 lb and MDPV**			
	Current	Proposed	Current Default	Current Early	Proposed Default	Proposed Early
2027	20% Tier 4	100% Tier 3	0% Tier 4	20% Tier 4	100% Tier 3	100% Tier 3
2028	40% Tier 4	100% Tier 3	0% Tier 4	40% Tier 4	100% Tier 3	100% Tier 3
2029[a]	60% Tier 4	60% Tier 4	0% Tier 4	60% Tier 4	0% Tier 4	60% Tier 4
2030	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4
2031	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4

[a] Vehicles not yet meeting all Tier 4 requirements will certify as Interim Tier 4 vehicles using the Tier 3 standards.

Table 9—Proposed Amended Tier 4 Medium-Duty Vehicle Criteria Pollutant Phase-In Schedules

Model Year	**MDV[a] (GVWR 8501–14000 lb)**			
	Current Default	Current Early	Proposed Default	Proposed Early
2027	0% Tier 4	20% Tier 4	100% Tier 3	100% Tier 3
2028	0% Tier 4	40% Tier 4	100% Tier 3	100% Tier 3
2029[b]	0% Tier 4	60% Tier 4	0% Tier 4	60% Tier 4
2030	0% Tier 4	80% Tier 4	0% Tier 4	80% Tier 4
2031	100% Tier 4	100% Tier 4	100% Tier 4	100% Tier 4

[a] MDV refers to medium-duty vehicle, which is a combination of both Class 2b and 3 vehicles as defined in 40 CFR 86.1803-01.
[b] Vehicles not yet meeting all Tier 4 requirements will certify as Interim Tier 4 vehicles using the Tier 3 standards.

This proposed action would also extend the Tier 3 NMOG+NO_X fleet average standards for light-duty program vehicles up to 6,000 pounds GVWR through MYs 2027

and 2028. Then, in MY 2029, the Tier 4 sales-weighted fleet average standards schedule for NMOG+NO_X would resume, as shown in Table 10. All other elements of the Tier 4 program, such as the changes in required drive cycles for certification and the NMOG+NO_X altitude standards, are also proposed to be delayed to MY 2029.

Table 10—Proposed Light-duty Program Vehicle Fleet Average NMOG+NO_X Standards

Model Year	LDV, LDT1–2 (GVWR ≤ 6000 lb) NMOG+NO_X (mg/mi.)	LDT3–4 (GVWR 6001–8500 lb) and MDPV NMOG+NO_X (mg/mi.)	
	Proposed	Default	Proposed Early
2026 [a]	30 [a]	30 [a]	30 [a]
2027	30	30	30
2028	30	30	30
2029	21	30	21
2030	19	15	19
2031	17	15	17
2032 and later	15	15	15

[a] Tier 3 standards provided for reference.

The LMDV Multipollutant Rule central analysis case projections for BEV market share in MYs 2027 and 2028 were 26 and 31 percent, respectively, across all light-duty program vehicles.[51] For this proposed action, the EPA projects the BEV market share to be eight and 12 percent in MYs 2027 and 2028, respectively.[52] This projection means that BEVs will have a market share in MY 2027 that is 18 percentage points lower than previously estimated in the LMDV Multipollutant Rule, and in MY 2028, 19 percentage points lower. Likewise, the BEV share of MDVs is projected to be reduced to one percent

[51] *See* Table 3 of LMDV Multipollutant Rule at 89 FR 27856.

[52] *See* U.S. Environmental Protection Agency. (2026). "Battery Electric Vehicle Projected Market Share Analysis." EPA–HQ–OAR–2025–3297.

from three and four percent in MYs 2027 and 2028, respectively. BEVs have a significant impact on manufacturers' compliance because of their zero mg/mile certification values. The changes in regulatory and market conditions described in section II.B of this preamble are expected to result in lower projected BEV market share and disrupt manufacturers' compliance strategies. This proposed action would provide manufacturers with additional lead time to comply in recognition of the issues described in section II.C of this preamble.

In addition, the EPA is proposing some clarifications to the regulatory language regarding requirements in 40 CFR parts 85, 86, and 1066. For example, the EPA is proposing to revise 40 CFR 1066.801(c)(1)(i) and 40 CFR 1066.815(a)–(c) to clarify that a manufacturer may use the hot-running portion of the urban dynamometer driving schedule (UDDS) from the cold-start UDDS or the hot-start UDDS in the FTP composite emission calculations in 40 CFR 1066.820(b) and (c)(1), if the manufacturer chooses to run a full hot-start UDDS for the purposes of measuring PM with a non-hybrid ICE vehicle consistent with 40 CFR 1066.815(b)(5). This option is available for non-hybrid ICE vehicles when testing on the FTP at either 25 °C or −7 °C ambient temperature conditions. In addition, HEVs may use the full hot-start UDDS or only the first 505 sections thereof for the purposes of measuring PM from HEVs on the FTP at −7 °C ambient temperature. Note that this clarification does not substantively alter testing obligations.

F. The EPA's Clean Air Act Authority for this Proposal

The EPA's statutory authority for this proposed action is found in CAA section 202(a)(1)-(2).[53] CAA section 202(a)(1) requires the Administrator to "prescribe (and from time to time revise) . . . standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgement cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare," and CAA section 202(a)(2) requires the Administrator to determine the necessary time "to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period" before such standard or revision shall go into effect.

In this proposed action, the EPA is amending the phase-in schedule for the Tier 4 standards for MYs 2027 and 2028 by extending the Tier 3 standards, consistent with the authority granted to the Agency by CAA section 202. CAA section 202 directs the EPA to give appropriate consideration to the cost and lead time necessary to allow for the development and application of such technology required for compliance with the standards. In determining the level of the standards, CAA section 202(a) does not specify how much weight to apply to each factor. Thus, the EPA may determine an appropriate

[53] 42 U.S.C. 7521(a)(1)–(2).

balance between stringency, technology considerations, cost, and lead time.[54] Unless provided otherwise by statute, an agency may revise or rescind prior actions so long as it acknowledges the change in position, provides a reasonable explanation for the new position, and considers legitimate reliance interests in the prior position.[55]

G. Reliance Interests

The EPA understands that companies have previously planned for the MY 2027 start date for Tier 4 criteria pollutant standards, especially with respect to the PM standards, and some have already expended resources, including through research and development, complying with the MYs 2027 and 2028 standards. As stated above, significant changes have occurred due to Federal and State policy changes, as well as consumer preferences, and companies have responded by modifying their product lines. The EPA acknowledges that this proposal would, if finalized, change the Agency's previous assessments in the 2024 Tier 4 Rule with respect to the feasibility or the Tier 4

[54] *See Sierra Club v. EPA*, 325 F.3d 374, 378 (D.C. Cir. 2003) (even where a provision is technology-forcing, the provision "does not resolve how the Administrator should weigh all [the statutory] factors"); *Nat'l Petrochemical and Refiners Ass'n v. EPA,* 287 F.3d 1130, 1135 (D.C. Cir. 2002) (EPA decisions, under CAA provision authorizing technology-forcing standards, based on complex scientific or technical analysis are accorded particularly great deference); *see also Husqvarna AB v. EPA*, 254 F. 3d 195, 200. (D.C. Cir. 2001) (great discretion to balance statutory factors in considering level of technology-based standard, and statutory requirement "to [give appropriate] consideration to the cost of applying … technology" does not mandate a specific method of cost analysis); *Hercules Inc. v. EPA*, 598 F. 2d 91, 106 (D.C. Cir. 1978) ("In reviewing a numerical standard we must ask whether the agency's numbers are within a zone of reasonableness, not whether its numbers are precisely right.").

[55] *See FDA v. Wages & White Lion Invs., L.L.C.*, 604 U.S. 542 (2025); *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502 (2009); *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983); *Clean Air Council v. Pruitt*, 862 F.3d 1, 8 (D.C. Cir. 2017) ("Agencies obviously have broad discretion to reconsider regulations at any time").

implementation schedule and the appropriateness of concluding the Tier 3 program on the timetable then envisioned. However, as explained throughout this preamble, the EPA believes this change in position is necessary and supported by intervening developments that impact the analyses and assumptions used in the 2024 Tier 4 Rule and manufacturers' initial compliance planning in response thereto.

The EPA believes that the revisions proposed in this action relieve obligations in a manner that promotes compliance and costs savings without undermining existing investments in compliance. Specifically, the EPA seeks comment on whether regulated parties have any significant reliance interests with respect to MYs 2027 and 2028 Tier 4 criteria pollutant standards only, as GHG standards or post-MY 2029 impacts are outside the scope of this rule. The EPA is aware that manufacturers, importers, and sellers have already expended resources complying with Tier 4 criteria pollutant standards for MYs 2027 and 2028, because many compliance costs are incurred as part of research and development and during manufacturing. However, given the statutory obligation to consider these lead time concerns in light of the dramatically changed landscape discussed throughout this notice, the EPA does not believe reliance interests in the timing of the Tier 4 standards, if any exist at this point, outweigh the need to reconsider the Tier 4 program as proposed here.

Nevertheless, the EPA seeks comment on whether regulated parties have any significant reliance interests with respect to MYs 2027 and 2028 Tier 4 criteria pollutant standards that are not already considered in this rulemaking that should be considered, and on how such interests should be considered. Note that MY 2029 impacts are beyond

the scope of this rule except where explicitly noted, and that former GHG standards are not at issue in this proposal.

The EPA further understands that other interested parties may have relied on the MY 2027 start date for Tier 4 criteria pollutant standards for independent purposes, including compliance with relevant National Ambient Air Quality Standards (NAAQS) and related planning obligations, among others. For example, the EPA understands that, by resulting in marginally increased emissions, the proposed rule could conceivably have implications for State departments of transportation and metropolitan planning organizations that factored prior emission pollution projections into their planning processes for the purposes of, among other things, obtaining of Federal transportation funding. The EPA believes that the relatively small nature of the foregone emissions reductions involved in this proposed revision, coupled with the relatively short amount of time that has passed since promulgation of the 2024 Tier 4 Rule, means that such interests do not supersede the Agency's obligation to ensure that standards are feasible and appropriately reflect technical and market realities. Moreover, the EPA notes that mobile-source standards are just one consideration among many involved in planning to attain the NAAQS and related obligations. Nevertheless, the EPA seeks comment on such reliance interests and how such interests should be taken into account in any final action on this proposal.

The EPA seeks comment on the nature and extent of any other reliance interests that may arise from this proposed action and is committed to assessing any such interests,

determining whether they are significant, and weighing such interests against competing rationales, as required by law.[56]

III. What Are the Projected Impacts of this Proposed Rule?

In this section of the preamble, the EPA presents a summary of the findings that are presented in detail in the DRIA for this proposed rule. This includes a description of the approach the EPA used to evaluate the impacts of this proposed rule on compliance costs, emissions, air quality, and human health. The EPA also presents a summary of the proposed action's projected impacts on the costs of compliance, which for this proposal is a cost savings for the automotive manufacturers.

A. What Approach Did the EPA Use in Analyzing this Proposal?

Projecting BEV market share is an important component of the EPA's cost and emissions impact analysis. The EPA recognizes that manufacturers could use BEVs to meet the existing Tier 4 standards for MYs 2027 and 2028 to the extent practicable, with the remaining compliance obligations coming from emissions improvements to ICE vehicles. The EPA projects the expected level of BEV market share to be eight percent in MY 2027 and 12 percent in MY 2028. It is also consistent with sales figures over the last

[56] *See, e.g.*, *DHS v. Regents of Univ. of Cal.*, 591 U.S. 1, 33 (2020).

two to three years.[57] Third-party BEV market share projections in MYs 2027 and 2028 are dynamic and show a wide range of potential adoption. Bloomberg New Energy Finance originally forecast in 2024 that 48 percent of passenger sales in the U.S. would be BEVs in 2030 but in 2025 revised that down to 27 percent.[58] In February 2025, J.D. Power projected BEV sales of 15.2 and 18.3 percent, respectively in 2027 and 2028.[59] According to AutoPacific's most recent forecast, BEV market share in the U.S. is expected to remain at eight percent in 2026, the same as it was in 2025. This represents a decrease from AutoPacific's 2024 estimate, when it predicted market share would reach 15 percent in 2026.[60] According to CNN reporting, while 10 percent of all cars sold in the U.S. in the third quarter of 2025 were electric, Ford Chief Executive Officer Jim Farley said in September 2025 that he expects BEV sales to fall from seven percent of the U.S. market in 2025 to five percent in 2026.[61] GM Chief Financial Officer Paul Jacobson said that his company also expects that "EV demand is going to drop off pretty precipitously."[62] The EPA believes the estimates of eight and 12 percent BEV market

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[57] Alliance for Automotive Innovation. (2025). Reading the Meter." *https://www.autosinnovate.org/posts/papers-reports/Reading the Meter 9-5-2025.pdf*.
[58] McKerracher, C. et al. (2025). Electric Vehicle Outlook 2025. *BloombergNEF*: *https://about.bnef.com/insights/clean-transport/electric-vehicle-outlook/*.
[59] J.D. Power. (2025). 2025 to be reset year for EV sales, *https://www.jdpower.com/business/resources/e-vision-intelligence-report-january-2025*.
[60] Gearino, D. (2025). "What's Ahead for the US Electric Vehicle Industry After Hitting a Massive Speed Bump?" *https://insideclimatenews.org/news/09102025/inside-clean-energy-us-ev-industry-future/*.
[61] Isidore, C. (2025). "The future for EVs in America looks grim. But the auto industry isn't giving up." *https://www.cnn.com/2025/10/06/business/automakers-ev-plans*.
[62] *Id.*

share are consistent with these other projections and are therefore a reasonable basis for estimating the costs and emissions impacts associated with this proposed action.

The EPA evaluated a no-action case and an action case for this proposal. The EPA's no-action case assumes that the Tier 4 phase-in stays as introduced in the LMDV Multipollutant Rule. The action case is the proposed extension of Tier 3 requirements for MYs 2027 and 2028 as described in section II.C of this preamble.

The current Tier 3 program requires that manufacturers meet a 30 mg/mile NMOG+NO_X fleet average standard. Vehicle manufacturers are complying with the current Tier 3 program using a variety of technologies, including BEVs. In the LMDV Multipollutant Rule, the EPA projected that manufacturers could adopt a variety of technologies to comply with the Tier 4 program, and, when evaluated in combination with the GHG standards established in the LMDV Multipollutant Rule and other factors in that analysis, projected that the sales of additional BEVs would be the most cost-effective means of meeting the multipollutant standards. In consideration of the changing BEV landscape discussed in section II.B of this preamble, the EPA modeled compliance with the Tier 3 and Tier 4 programs using ICE emission control technologies as needed to project compliance after accounting for a more realistic share of BEVs into the fleet average. The EPA recognizes that this is one of numerous pathways to compliance—for example, manufacturers could instead rely on more or fewer BEVs than assumed here—and consequently there is some uncertainty in the projected changes in costs.

There are likely to be sources of uncertainty in any complex analysis using estimated parameters and inputs from numerous models and assumptions. These

uncertainties may impact both the baseline and the post-rule analysis, thus possibly affecting the estimated incremental impacts of the proposed rulemaking. In this analysis, the EPA considered several sources of uncertainty, both quantitatively and qualitatively, related to the costs and benefits of this action. More information on uncertainty related to costs, including estimates of BEV market share and variations in catalyst precious metal loading in TWCs, can be found in section III.B of this preamble and Chapter 1 of the DRIA for this proposed rule. More information on uncertainty related to benefits, including the quantification of health and welfare effects, can be found in section III.E of this preamble and Chapter 3 of the DRIA for this proposed rule.

B. What Are the Projected Changes in Costs?

The EPA's cost analysis considers the incremental changes in costs to manufacturers associated with NMOG+NO_X and PM controls on vehicles sold in MYs 2027 and 2028. These costs are calculated on an industry-wide basis. This proposal would extend by two years the existing Tier 3 program for vehicles less than 6,000 pounds GVWR. As a result of the proposed changes discussed in section II.B of this preamble, this proposal would lead to cost savings for the action case compared to the costs projected for the no-action case.

The full analysis is presented in Chapter 1 of the DRIA that accompanies this preamble. In this proposal, the EPA estimates cost savings from changing NMOG+NO_X control technology and PM control technology for MYs 2027 and 2028. The per-vehicle savings are calculated separately for the NMOG+NO_X control technology and PM

control technology because they are applied to different numbers of vehicles in each MY. The per-vehicle savings for NMOG+NO_X control technology are estimated to be about $59 with a three percent discount rate and $56 with a seven percent discount rate. These savings are projected to apply to 9.38 million vehicles in 2027 and 8.97 million vehicles in 2028. The per-vehicle savings for PM control technology are estimated to be about $171 with a three percent discount rate and $162 with a seven percent discount rate. These savings are projected to apply to 1.22 million vehicles in 2027 and 2.85 million vehicles in 2028.

In total, for the central action case the EPA estimates compliance cost savings of $1.77 billion using a three percent discount rate and $1.66 billion using a seven percent discount rate (2024 dollars), as summarized in Table 11. The details of this analysis are presented in Chapter 1 of the DRIA for this proposed rule. The DRIA includes a discussion of uncertainties in the cost analysis, including estimates of BEV market share and variations in catalyst precious metal loading, and also includes sensitivity analysis.[63]

Table 11—Estimated Emissions Control System Cost Savings (millions 2024$)

Calendar Year	Cost Savings	
	3% Discount Rate	7% Discount Rate
2027	$670	$640
2028	$1,100	$1,020
Present Value	$1,770	$1,660

[63] *See* also section III.A of this preamble.

Note: The EPA notes there are uncertainties associated with these cost savings projections. *See* section III.A of this preamble and Chapter 1 of the DRIA for this proposed rule for a discussion of uncertainties.

The EPA acknowledges that there are many ways that manufacturers could comply with the NMOG+NO_X standards, including using the Tier 4 Averaging, Banking, and Trading (ABT) provisions. Due to the myriad potential permutations attached to the ABT program, the EPA is presenting here only one cost case. However, the NMOG+NO_X standards allow ABT, which has the potential to reduce compliance costs for a given manufacturer by spreading the introduction of new technologies over multiple MYs.

The EPA also understands that, as discussed above, due to the inability for some companies to comply with the MYs 2027 and 2028 standards, the Agency expects there is likely to be significant additional costs related to noncompliance with the regulations stemming primarily from product planning disruptions such as manufacturing volume constraints and revised marketing campaigns. However, the EPA did not attempt to monetize those impacts.

Additionally, the EPA believes that, under the current MYs 2027 and 2028 standards, there is the potential that companies would no longer be able to provide certain vehicle models, which would result in customers being required to purchase alternative models which may compromise their ideal choice. The EPA requests comment on the economic impacts of potential noncompliance with MYs 2027 and 2028 standards and companies being forced to remove some vehicle models from the market.

C. What Are the Projected Changes in Emissions?

The emissions impacts of this proposed rule were estimated using a regulatory version of the EPA's Motor Vehicle Emission Simulator (MOVES5). All emission inventories were modeled using the MOVES national domain, which includes all 50 states and the District of Columbia but no U.S. territories. Details on emissions modeling and inventory results, including sensitivity analyses, are presented in Chapter 2 of the DRIA for this proposed rule.

For this proposal, both the action and no-action cases that the EPA analyzed project that BEVs will make up eight and 12 percent of sales of light-duty program vehicles up to 6,000 pounds GVWR in MYs 2027 and 2028, respectively. Changes in emissions between these two cases are expected to come from changes to emissions control technologies on ICE vehicles.

The main effects of this proposal on emissions relative to the Tier 4 baseline in the future could be small increases in volatile organic compounds (VOC), NO_X, PM, and toxics emissions. The small increases in VOC, NO_X, and gaseous air toxics result from holding the NMOG+NO_X fleet average standard at the 30 mg/mile Tier 3 standard for two additional MYs. The small increases in PM result from MYs 2027 and 2028 vehicles not being required to meet the Tier 4 per-vehicle PM standards. Table 12 presents the modeled changes in the national onroad emissions inventory for NO_X, PM, VOC, and HCHO for calendar years (CYs) 2027, 2028, 2035, 2045, and 2055, including percent changes in those years. Positive values for emissions changes reflect emissions increases. The estimated impact of the proposed rule on VOC is equal to or less than a 0.1 percent

increase in the total onroad vehicle emissions in the years presented. Increases in NO_X are equal to or less than 0.2 percent, while onroad $PM_{2.5}$ emissions increases range between 0.2 and 1.6 percent for the years presented. The DRIA includes additional detail on these projected changes, as well as projected changes in emissions for several air toxics emissions.

Similar to the cost savings estimates, the extent that manufacturers use ABT in their compliance strategies could have emissions implications. For example, an original equipment manufacturer (OEM) overcomplying with the standards in MY 2027 could reduce emissions in CY 2027 and subsequently increase emissions in later years as the OEM uses the banked credits.

Table 12—Annual Increases in National Onroad Emissions from This Proposal for Select Calendar Years

Pollutant[64]	CY 2027		CY 2028		CY 2035		CY 2045		CY 2055	
	U.S. Tons	Percent Onroad	U.S. Tons	Percent Onroad	U.S. Tons	Percent Onroad	U.S. Tons	Percent Onroad	U.S. Tons	Percent Onroad
Nitrogen Oxides (NO_X)	389	<0.1	976	0.1	1031	0.2	482	0.1	106	<0.1
Particulate Matter[65] ($PM_{2.5}$)	51	0.2	145	0.5	167	1.1	102	1.6	27	0.7
Volatile Organic Compounds (VOC)	353	<0.1	859	0.1	878	0.1	405	0.1	92	<0.1
Formaldehyde	4	0.1	9	0.2	10	0.3	5	0.2	1	<0.1

[64] Sulfur dioxide (SO_2) and CO emissions do not change with this proposed rule.

[65] $PM_{2.5}$ changes only come from tailpipe emissions. Brake wear and tire wear emissions are not changing with this proposed rule.

D. What Are the Projected Changes in Air Quality?

Section III.C of this preamble presents projections of the emissions changes due to this proposed rule. For this proposal, the EPA did not conduct air quality modeling to determine how these emissions increases could change the ambient concentrations of air pollutants. Making predictions about air quality based solely on emissions changes is extremely difficult because the atmospheric chemistry related to ambient concentrations of PM, ozone, and air toxics is very complex, and the emissions changes are spatially variable. Nevertheless, considering the air quality modeling conducted for recent vehicle rules and the relatively small projected increase in total onroad emissions from this proposal, overall, the EPA expects relatively small changes in ambient concentrations of air pollutants from this proposal.[66]

E. What Are the Projected Changes in Human Health and Welfare?

Air pollutants emitted from motor vehicles impact public health, welfare, and the environment. Motor vehicle emissions contribute to ozone, $PM_{2.5,}$ and air toxics, which are linked to premature death and other serious health impacts, including respiratory illness, cardiovascular problems, and cancer. This air pollution affects people nationwide, especially those who live or work near transportation corridors. Detailed information on the health and welfare effects associated with exposure to pollutants impacted by this

[66] *See* LMDV Multipollutant Rule and "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards," 88 FR 4296–4718 (Jan. 24, 2023).

proposed rule can be found in sections II.B–D of the LMDV Multipollutant Rule's preamble and Chapter 6 of the LMDV RIA.[67]

The EPA sometimes performs air quality modeling to conduct a full assessment of the $PM_{2.5}$-related and ozone-related human health benefits of the Agency's regulatory actions. As discussed in section III.D of this preamble, the EPA did not conduct air quality modeling for this proposal.

The EPA is obligated to present the Agency's best scientific understanding and the implications of that science when developing policies and regulations. However, historically, the EPA's analytical practices may not have presented the full range of uncertainties and associated confidence level regarding the potential benefit estimates from reduction in exposure to $PM_{2.5}$ and ozone. In addition, the science regarding the exposure, health effects from exposure, and valuation of reduction in health effects are evolving with better data and methods, especially at low concentrations of PM and ozone. The EPA's use of benefit per ton (BPT) monetized values introduces additional uncertainty. Although developed as a screening tool when full-form photochemical modeling was not feasible, the BPT approach reduces complex spatial and atmospheric relationships and may be more suited to model emissions that are geographically more uniform and the pollutant species are better mixed, thereby adding uncertainty associated with those estimates. Some of the sources of uncertainties include the set of assumptions

[67] *See* LMDV Multipollutant Rule and LMDV RIA.

used in projecting the health impact of reducing PM. These projections are based on a series of models that take into account emissions changes, the resulting distributions of changes in ambient air quality, the estimated reductions in health effects from changes in exposure, and the composition of the population that will benefit from the reduced exposure. Each component includes assumptions, each with varying degrees of uncertainty.

In addition, the EPA historically provided point estimates rather than just ranges of emission-related effects or only quantifying emissions when monetizing proved to be too uncertain. Therefore, to address these concerns, the EPA is refraining from providing primary estimates resulting from changes in $PM_{2.5}$ and ozone exposure resulting from changes in direct $PM_{2.5}$, NO_X, and VOC emissions but will continue to quantify the emissions until the Agency is confident enough in the modeling to robustly monetize those impacts.

A more robust description of the potential health and welfare disbenefits associated with emissions increases due to the proposal is contained in Chapter 2.3 of the DRIA for this proposed rule.

IV. Request for Comment

The EPA is soliciting comment on key aspects of the proposed rule, although the Agency is not limiting comment to these identified areas. To facilitate comment on those portions of the rule, the EPA has indexed each comment solicitation with a unique identifier below (*e.g.*, "C-1," "C-2") to provide a consistent framework for effective and

efficient provision of comments. Accordingly, the EPA asks that commenters include the corresponding identifier when providing comments relevant to that comment solicitation. The EPA asks that commenters include the identifier either in a heading or within the text of each comment to make clear which comment solicitation is being addressed. Specifically, the EPA is soliciting comment on the following aspects:

C-1. The EPA requests comment on all aspects of this proposed rule, including all elements of this preamble, the proposed regulatory changes, and the DRIA (including projected impacts), that are not otherwise enumerated below.

C-2. The Tier 3 NMOG+NO_X program includes several specific emission bins from which manufacturers must choose when certifying each vehicle family, for example, Bins 20, 30, and 50. All vehicles within a given Bin must have NMOG+NO_X emissions below the Bin value, so a Bin 50 vehicle family must all be at or below 50 mg/mile. In the Tier 4 program, the EPA created several additional NMOG+NO_X Bins with smaller increments between the Bins. For example, the EPA added Bins 25, 35, 40, and 45. The EPA requests comment on if the Agency should add to the Tier 3 program the additional NMOG+NO_X Bins available in the Tier 4 program for MYs 2027 and 2028. Doing so could provide additional flexibility to vehicle manufacturers for demonstrating compliance with the NMOG+NO_X fleet average standard.

C-3. The EPA requests comments on the use of the ABT program for NMOG+NO_X emissions in MYs 2027 and 2028 and how the use of the ABT program may affect the cost analysis presented here and in the DRIA.

C-4. The EPA requests comments on whether the Tier 3 program should be extended for three MYs, through MY 2029, instead of two MYs.

C-5. The EPA knows that manufacturers have already started certifying vehicles to the interim and final Tier 4 standards. The EPA requests comment on the treatment of MYs 2027 or 2028 vehicles certified to the final Tier 4 standards once the Tier 4 phase-in schedule is revised. The EPA is presenting the following initial framework for this issue:

- Certificates of conformity issued for interim or final Tier 4 vehicles will remain valid throughout their full useful life (FUL). Thus, a manufacturer may keep selling a Tier 4 vehicle under its Tier 4 certificate of conformity.
- The Tier 4 NMOG+NO_X sales-weighted values will be combined with the Tier 3 NMOG+NO_X sales-weighted values from the same MY.

C-6. The EPA requests comment on any modifications of the Federal OBD requirements needed to support this action for MYs 2027 and 2028 vehicles.

C-7. The EPA requests comment on the economic impacts of potential noncompliance with MYs 2027 and 2028 standards, including costs associated with revised product plans and sunk development costs, to adjust the economic analysis.

C-8. The EPA requests comment on the challenges associated with integrating GPFs on light- and medium-duty vehicles in MYs 2027 or 2028, especially regarding what has changed that renders the extensive public record insufficient to justify manufacturers installing this technology.

C-9. The EPA requests comment on the projected MYs 2027 and 2028 BEV sales estimates used for assessing the cost and emissions impacts of this proposal, as detailed in the Draft RIA.

C-10. The EPA requests comment on whether regulated parties have any significant reliance interests with respect to MYs 2027 and 2028 Tier 4 criteria pollutant standards.

In this action, the EPA is not requesting comment on any provisions of the Tier 4 program for MYs 2029 and later.

V. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders*.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is an economically significant regulatory action as defined under section 3(f)(1) of Executive Order 12866. Accordingly, it was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket. The EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis, Revision of Tier 4 Phase-In Schedule for Light-Duty and Medium-Duty Vehicles: Draft Regulatory Impact Analysis (April 2026) EPA Technical Report EPA-420-D-26-001 ("DRIA") is

available in the docket, Docket ID No. EPA–HQ–OAR– 2025–3297. This analysis is described further in section III.B of this preamble. The estimated cost savings presented in Table 13 include the effects of several sources of uncertainty associated with the estimates of costs, such as estimates of BEV market share and variations in catalyst loading in TWCs, which are discussed in Chapter 1 of the DRIA.

Table 13—Estimated Cost Savings (millions, 2024$)

Calendar Year	**Cost Savings (millions, 2024$)**
2027	$690
2028	$1,170
Present Value (3% discount rate)	$1,770
Present Value (7% discount rate)	$1,660

Note: The EPA notes there are uncertainties associated with these cost savings projections. See section III.A. of this preamble and Chapter 1 of the DRIA for a discussion of uncertainties in the cost savings projections.

B. Executive Order 14192: Unleashing Prosperity Through Deregulation.

This action is expected to be an Executive Order 14192 deregulatory action.

C. Paperwork Reduction Act (PRA)

This proposed action does not impose any new information collection burden under the PRA. This proposed action does not change existing information collection requirements.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the EPA concludes that the impact of concern for this rule is any significant adverse economic impact on small entities and that the Agency is certifying that this rule will not have a significant economic impact on a substantial number of small entities because the rule relieves regulatory burden on the small entities subject to the rule. The regulated entities that are subject to the regulations we are proposing to delay in this proposed rule are vehicle manufacturers and importers. The EPA is certifying that this proposed action would not have a significant economic impact on a substantial number of small entities because the proposed action would relieve regulatory burden on all entities, including all small entities, subject to the current rules. The EPA does not anticipate that there would be any significant adverse economic impact on directly regulated small entities as a result of these revisions. The EPA has therefore concluded that this proposed action would, if finalized, relieve regulatory burden for all directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million (adjusted annually for inflation) or more (in 1995 dollars)] as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any State, local, or Tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This proposed action does not have Tribal implications as specified in Executive Order 13175. This proposed action would extend the EPA Tier 3 criteria pollutant standards by two years and amend the phase-in schedule for the Tier 4 criteria pollutant standards. If finalized, it would not have substantial direct effects on Tribal governments, on the relationship between the Federal government and Indian Tribes, or on the distribution of power and responsibilities between the Federal government and Indian Tribes, as specified in Executive Order 13175. Thus, Executive Order 13175 does not apply to this proposed action.

H. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045 directs Federal agencies to include an evaluation of the health and safety effects of the planned regulation on children in Federal health and safety standards and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives. This action is subject to Executive Order 13045 because

it is an economically significant regulatory action under section 3(f)(1) of Executive Order 12866, and the EPA believes that the environmental health or safety risk addressed by this action may have a disproportionate effect on children. Furthermore, EPA's Policy on Children's Health also applies to this action.[68]

Children are not expected to experience greater ambient concentrations of air pollutants than the general population. Children are more susceptible than adults to air pollution and children tend to spend increased time outdoors. Children make up a substantial fraction of the U.S. population and often have unique factors that contribute to their increased risk of experiencing a health effect from exposures to ambient air pollutants because of their continuous growth and development. Children are more susceptible than adults to many air pollutants because they have (1) a developing respiratory system, (2) increased ventilation rates relative to body mass compared with adults, (3) an increased proportion of oral breathing, particularly in boys, relative to adults, and (4) behaviors that increase chances for exposure. Even before birth, the developing fetus may be exposed to air pollutants through the mother that affect development when the mother is exposed. A qualitative description of the human health

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[68] *See* U.S. Environmental Protection Agency. (2026). 2026 Policy on Children's Health: https://www.epa.gov/system/files/documents/2021-10/2021-policy-on-childrens-health.pdf.

and welfare effects related to emissions changes associated with this proposal is provided in Chapter 2 of the DRIA for this proposed rule.

I. Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

This action involves technical standards. Therefore, the EPA conducted a search to identify potentially applicable voluntary consensus standards. However, the EPA identified no such standards. Therefore, the EPA has decided to use EPA standards.

VI. Statutory Authority and List of Subjects

Statutory authority for this proposed rule is found at 42 U.S.C. 7401–7675, especially 42 U.S.C. 7521.

40 CFR Part 85

Environmental protection, Confidential business information, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Warranties.

40 CFR Part 86

Environmental protection, Administrative practice and procedure, Confidential business information, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements.

40 CFR Part 1066

Environmental protection, Air pollution control, Reporting and recordkeeping requirements.

Lee Zeldin,

Administrator.

[**insert date**]

For the reasons stated in the preamble, the U.S. Environmental Protection Agency proposes to amend parts 85, 86, and 1066 of title 40, chapter I, of *The Code of Federal Regulations* as follows:

PART 85—CONTROL OF AIR POLLUTION FROM MOBILE SOURCES

1. The authority citation for part 85 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

2. Amend § 85.1515 by revising paragraphs (c)(2)(xi) and (c)(6) to read as follows:

§ 85.1515 Emission standards and test procedures applicable to imported

nonconforming motor vehicles and motor vehicle engines.

* * * * *

(c) * * *

(2) * * *

(xi) Nonconforming vehicles subject to the provisions of 40 CFR part 86, subpart S, originally manufactured in OP years 2032 and later must meet the Tier 4 exhaust emission standards in 40 CFR 86.1811-29, the Tier 3 evaporative emission standards in 86.1813-17, and the refueling emission standards in 40 CFR 86.1813-17(b) and have an OBD system meeting the requirements of 40 CFR 86.1806-29. In cases where the standard allows or requires demonstrating compliance using emission credits, each vehicle imported under this paragraph (c) is subject to the specified fleet average standard.

* * * * *

(6) An ICI may comply with the cold temperature PM standard in 40 CFR 86.1811-29(c) based on an engineering evaluation.

* * * * *

3. Amend § 85.2103 by revising paragraph (d)(1)(v) to read as follows:

§ 85.2103 Emission warranty.

* * * * *

(d) * * *

(1) * * *

(v) Batteries serving as a Rechargeable Energy Storage System for electric vehicles and plug-in hybrid electric vehicles, along with all components needed to charge the system, store energy, and transmit power to move the vehicle. This paragraph (d)(1)(v) is optional before model year 2027 for LDV, LDT1, and LDT2. This paragraph (d)(1)(v) is optional for LDT3, LDT4, MDPV, and MDVs until they are first certified to Tier 4 NMOG+NOx bin standards under 40 CFR 86.1811–27(b), not later than model year 2031.

* * * * *

PART 86—CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

4. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

5. Amend § 86.1803-01 by revising the definitions for “Light-duty program vehicle”, “Light-duty truck”, “Medium-duty passenger vehicle”, “Medium-duty vehicle”, and “Tier 4” to read as follows:

§ 86.1803-01 Definitions.

* * * * *

Light-duty program vehicle means any medium-duty passenger vehicle and any vehicle subject to standards under this subpart that is not a heavy-duty vehicle.
Light-duty truck has one of the following meanings:
(1) Except as specified in paragraph (2) of this definition, light-duty truck means any motor vehicle that is not a heavy-duty vehicle, but is:
(i) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle; or
(ii) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or
(iii) Available with special features enabling off-street or off-highway operation and use.
(2) Starting in model year 2029, light-duty truck has the meaning given for "Light truck" in 40 CFR 600.002. Vehicles that qualify as emergency vehicles for any reason under § 86.1803-01 are light-duty trucks if they are derived from light-duty trucks.
* * * * *
Medium-duty passenger vehicle (MDPV) has one of the following meanings:
(1) Except as specified in paragraph (2) of this definition, Medium-duty passenger vehicle means any heavy-duty vehicle (as defined in this subpart) with a gross vehicle weight rating (GVWR) of less than 10,000 pounds that is designed primarily for the transportation of persons. The MDPV definition does not include any vehicle which:
(i) Is an "incomplete vehicle" as defined in this subpart; or
(ii) Has a seating capacity of more than 12 persons; or
(iii) Is designed for more than 9 persons in seating rearward of the driver's seat; or
(iv) Is equipped with an open cargo area (for example, a pick-up truck box or bed) of 72.0 inches in interior length or more. A covered box not readily accessible from the passenger compartment will be considered an open cargo area for purposes of this definition.
(2) Starting with model year 2029, or earlier at the manufacturer's discretion, Medium-duty passenger vehicle means any heavy-duty vehicle subject to standards under this subpart that is designed primarily for the transportation of persons, with seating rearward of the driver, except that the MDPV definition does not include any vehicle that has any of the following characteristics:
(i) Is an "incomplete vehicle" as defined in this subpart.
(ii) Has a seating capacity of more than 12 persons.
(iii) Is designed for more than 9 persons in seating rearward of the driver's seat.
(iv) Is equipped with an open cargo area (for example, a pick-up truck box or bed) with an interior length of 72.0 inches or more for vehicles above 9,500 pounds GVWR with a work factor above 4,500 pounds. A covered box not readily accessible from the passenger compartment will be considered an open cargo area for purposes of this definition. For purposes of this definition, measure the cargo area's interior length from front to back at floor level with all gates and doors closed.

(v) Is equipped with an open cargo area with an interior length of 94.0 inches or more for vehicles at or below 9,500 pounds GVWR and for all vehicles with a work factor at or below 4,500 pounds.
(vi) Is a van in a configuration with greater cargo-carrying volume than passenger-carrying volume at the point of first retail sale. Determine cargo-carrying volume accounting for any installed second-row seating, even if the manufacturer has not described that as an available feature.

Medium-duty vehicle means any heavy-duty vehicle subject to standards under this subpart, excluding medium-duty passenger vehicles.

* * * * *

Tier 4 means relating to the Tier 4 emission standards described in § 86.1811-29. Note that a Tier 4 vehicle continues to be subject to Tier 3 evaporative emission standards.

* * * * *

6. Amend § 86.1805-17 by revising paragraph (d) to read as follows:

§ 86.1805-17 Useful life.

* * * * *

(d) *Criteria pollutants*. The useful life provisions of this paragraph (d) apply for all emission standards not covered by paragraph (b) or (c) of this section. This paragraph (d) applies for the cold temperature emission standards in § 86.1811-29(c). Except as specified in paragraph (f) of this section and in §§ 86.1811-17, 86.1813-17, and 86.1816-18, the useful life for LDT2, HLDT, MDPV, and HDV is 15 years or 150,000 miles. The useful life for LDV and LDT1 is 10 years or 120,000 miles. Manufacturers may optionally certify LDV and LDT1 to a useful life of 15 years or 150,000 miles, in which case the longer useful life would apply for all the standards and requirements covered by this paragraph (d).

* * * * *

7. Amend § 86.1806-17 by revising the introductory text and paragraph (a) introductory text to read as follows:

§ 86.1806-17 Onboard diagnostics.

Model year 2017 and later vehicles must have onboard diagnostic (OBD) systems as described in this section. OBD systems must generally detect malfunctions in the emission control system, store trouble codes corresponding to detected malfunctions, and alert operators appropriately.

(a) Vehicles must comply with the 2013 OBD requirements adopted for California as described in this paragraph (a). California's 2013 OBD-II requirements are part of Title 13, § 1968.2 of the California Code of Regulations, approved on July 31, 2013 (incorporated by reference in § 86.1). We may approve your request to certify an OBD system meeting some or all provisions from a later version of California's OBD requirements if you demonstrate that the provisions from the later version comply with

the intent of this section. The following clarifications and exceptions apply for vehicles certified under this subpart:
* * * * *

8. Redesignate § 86.1806-27 as § 86.1806-29 and amend the redesignated section by revising the introductory text and paragraph (g)(1) to read as follows:

§ 86.1806-29 Onboard diagnostics.
Model year 2029 and later vehicles must have onboard diagnostic (OBD) systems as described in this section. OBD systems must generally detect malfunctions in the emission control system, store trouble codes corresponding to detected malfunctions, and alert operators appropriately. Vehicles may optionally comply with the requirements of this section instead of the requirements of § 86.1806-17 before model year 2029.
(a) Vehicles must comply with the 2022 OBD requirements adopted for California as described in this paragraph (a). California's 2022 OBD-II requirements are part of Title 13, section 1968.2 of the California Code of Regulations, operative November 30, 2022 (incorporated by reference, see § 86.1). We may approve your request to certify an OBD system meeting a complete later version of California's OBD requirements if you demonstrate that it complies with the intent of this section. The following clarifications and exceptions apply for vehicles certified under this subpart:
(g) * * *
(1) Manufacturers may delay complying with all the requirements of this section, and instead meet all the requirements that apply under § 86.1806-17 for LDT3, LDT4, MDPV, and MDVs any vehicles above 6,000 pounds GVWR that are not yet subject to all the Tier 4 standards in § 86.1811-29.
* * * * *

9. Amend § 86.1811-17 by revising paragraph (h)(1) to read as follows:

§ 86.1811-17 Exhaust emission standards for light-duty vehicles, light-duty trucks and medium-duty passenger vehicles.
* * * * *
(h) *Small-volume manufacturers*. Small-volume manufacturers may use the following Tier 3 phase-in provisions:
(1) Instead of the fleet-average FTP standards for NMOG+NOx specified in this section, small-volume manufacturers may meet alternate fleet-average standards of 0.125 g/mile through model year 2021, and 0.051 g/mile for model years 2022 through 2028. The following additional provisions apply for vehicles certified under this paragraph (h)(1):
(i) Vehicles are subject to exhaust emission standards over the useful life as specified in § 86.1805-12 through model year 2021, and as specified in this section starting in model year 2022.
(ii) Gasoline-fueled vehicles may use the E0 test fuel specified in § 86.113-04 for vehicles certified to bins higher than Bin 70 through model year 2021.

(iii) Vehicles certified under this paragraph (h)(1) may generate emission credits and they may use banked or traded emission credits relative to the alternate fleet-average FTP standard for NMOG+NOx only in model years 2022 through 2028.
(iv) Vehicles are subject to all the other requirements specified in this section.
* * * * *

10. Redesignate § 86.1811-27 as § 86.1811-29 and amend the redesignated section by revising paragraphs (a) introductory text, (b)(2), (b)(4)(ii), (b)(5)(ii), (b)(6), and (f) to read as follows:

§ 86.1811-29 Criteria exhaust emission standards.

(a) *Applicability and general provisions*. The criteria exhaust emission standards of this section apply for both light-duty program vehicles and medium-duty vehicles, starting with model year 2029.
* * * * *

(b) *Exhaust emission standards for 25 and 35°C testing*. Exhaust emissions may not exceed standards over several driving cycles as follows:
* * * * *

(2) Fully phased-in standards apply as specified in the following table:

Table 1—To Paragraph (b)(2)—Fully Phased-In Tier 4 Criteria Exhaust Emission Standards[a]

	NMOG+NOx (mg/mile)[b]	PM (mg/mile)[c]	CO (g/mile)[d]	Formaldehyde (mg/mile)[e]
Light-duty program vehicles	15	0.5	1.7	4
Medium-duty vehicles	75	0.5	3.2	6

[a] Paragraphs (b)(6) and (f) of this section describe how these standards phase in for model year 2029 and later vehicles.
[b] The NMOG+NOx standards apply on a fleet-average basis using discrete bin standards as described in paragraphs (b)(4) and (6) of this section.
[c] PM standards do not apply for the SC03, HFET, and ACC II driving cycles specified in paragraphs (b)(1)(ii)(C) through (G) of this section.
[d] Alternative CO standards of 9.6 and 25 g/mile apply for the US06 driving cycle for light-duty program vehicles and medium-duty vehicles, respectively. CO standards do not apply for the ACC II driving cycles specified in paragraph (b)(1)(ii)(E) through (G) of this section.
[e] Formaldehyde standards apply only for the FTP driving cycle.

* * * * *

(4) * * *

(ii) Select one of the identified values from table 2 of this section for demonstrating that your fleet average emission level for light-duty program vehicles complies with the fleet average NMOG+NO_X emission standard. These FEL values define emission bins that also determine corresponding emission

standards for NMOG+NO_X emission standards for ACC II driving cycles, as follows:

Table 2 to Paragraph (b)(4)(ii)—Tier 4 NMOG+NO_X Bin Standards for Light-Duty Program Vehicles [mg/mile]

FEL name	FTP, US06, SC03, HFET	ACC II—Mid-temperature intermediate soak (3-12 hours)	ACC II—Mid-temperature intermediate soak (40 minutes)[a]	ACC II—Mid-temperature intermediate soak (10 minutes)	ACC II—Early driveaway[b]	ACC II—High-power PHEV engine starts[b,c]
Bin 70	70	70	54	35	82	200
Bin 65	65	65	50	33	77	188
Bin 60	60	60	46	30	72	175
Bin 55	55	55	42	28	67	163
Bin 50	50	50	38	25	62	150
Bin 45	45	45	35	23	57	138
Bin 40	40	40	31	20	52	125
Bin 35	35	35	27	18	47	113
Bin 30	30	30	23	15	42	100
Bin 25	25	25	19	13	37	84
Bin 20	20	20	15	10	32	67
Bin 15	15	15	12	8	27	51
Bin 10	10	10	8	5	22	34
Bin 5	5	5	4	3	17	17
Bin 0	0					

[a] Calculate the bin standard for a soak time between 10 and 40 minutes based on a linear interpolation between the corresponding bin values for a 10-minute soak and a 40-minute soak. Similarly, calculate the bin standard for a soak time between 40 minutes and 3 hours based on a linear interpolation between the corresponding bin values for a 40-minute soak and a 3-hour soak.

[b] Qualifying vehicles are exempt from standards for early driveaway and high-power PHEV engine starts as described in paragraph (b)(5) of this section.

[c] Alternative standards apply for high-power PHEV engine starts for model year 2029 as described in paragraph (b)(6)(v) of this section.

* * * * *

(5) * * *

(ii) Vehicles are exempt from the ACC II bin standards for high-power PHEV engine starts if their all-electric range on the cold-start US06 driving cycles is at or above 10 miles for model year 2029, and at or above 40 miles for model year 2030 and later.

(6) The Tier 4 standards phase in over several years, as follows:

(i) *LDV, LDT1, and LDT2*. Include all LDV, LDT1, and LDT2 in the calculation to comply with the Tier 4 fleet average NMOG+NOx standard for 25°C testing in paragraph (b)(2) of this section. You must meet other Tier 4 requirements with 60 and 100 percent of your projected nationwide production volumes in model years 2029 and 2030, respectively. A vehicle counts toward meeting the phase-in percentage if it meets all the requirements described in this paragraph (b) and in

paragraph (c) of this section. Fleet average NMOG+NOx standards apply as follows for model year 2029 through 2032 light-duty program vehicles:

Table 3 to paragraph (b)(6)(i)—Declining Fleet Average NMOG+NOx Standards for LDV, LDT1, and LDT2

Model year	Fleet average NMOG+NOx standard (mg/mile)
2029	21
2030	19
2031	17
2032	15

(ii) *Default phase-in for LDT3, LDT4, MDPV, and MDV*. The default approach for phasing in the Tier 4 standards for LDT3, LDT4, MDPV, and MDV is for all those vehicles to meet the fully phased in Tier 4 standards of this section starting in model year 2030 for LDT3, LDT4, and MDPV and in model year 2031 for MDV. Manufacturers using this default phase-in for medium-duty vehicles may not use credits generated from earlier model years for demonstrating compliance with the Tier 4 NMOG+NOx standards under this paragraph (b).

(iii) *Alternative early phase-in for LDT3, LDT4, MDPV, and MDV*. Manufacturers may use the following alternative early phase-in provisions to transition to the Tier 4 exhaust emission standards on an earlier schedule for LDT3, LDT4, MDPV, and MDV:

(A) If you select the alternative early phase-in for LDT3, LDT4, and MDPV, you must demonstrate that you meet the phase-in requirements in paragraph (b)(6)(i) of this section based on all your light-duty program vehicles.

(B) If you select the alternative early phase-in for medium-duty vehicles, include all medium-duty vehicles in the calculation to comply with the Tier 4 fleet average NMOG+NOx standard starting in model year 2029. You must meet other Tier 4 requirements with 60, 80, and 100 percent of a manufacturer's projected nationwide production volumes in model years 2029 through 2031, respectively. A vehicle counts toward meeting the phase-in percentage if it meets all the requirements described in this paragraph (b) and in paragraph (c) of this section. Medium-duty vehicles complying with the alternative early phase-in are subject to the following fleet average NMOG+NOx standards for model years 2029 through 2033:

Table 4 to Paragraph (b)(6)(iii)(B)—Declining Fleet Average NMOG+NOx Standards for Medium-Duty Vehicles

Model year	Fleet average NMOG+NOx standard (mg/mile)
2029	140
2030	120
2031	100
2032	80

(C) If you select the alternative early phase-in but are unable to meet all the requirements that apply in model year 2029 for light-duty program vehicles and either model year 2029 or 2030 for medium-duty vehicles, you may switch to the default phase-in. Switching to the default phase-in does not affect certification or compliance obligations for model years before you switch to the default phase-in.

(iv) *Interim Tier 4 vehicles*. Vehicles not meeting all the requirements of this section during the phase-in are considered "interim Tier 4 vehicles". Interim Tier 4 vehicles are subject to all the requirements of this subpart that apply for Tier 3 vehicles except for the fleet average FTP standard for NMOG+NOx emissions in §§ 86.1811-17 and 86.1816-18. Note that Interim Tier 4 vehicles also remain subject to the fleet average SFTP and HD-SFTP standards for NMOG+NOx emissions in §§ 86.1811-17 and 86.1816-18, respectively. Interim Tier 4 vehicles may certify to the 25°C fleet average NMOG+NOx standard under this section using all available Tier 3 bins under §§ 86.1811-17 and 86.1816-18. Interim Tier 4 vehicles are subject to the whole collection of Tier 3 bin standards, and they are not subject to any of the Tier 4 bin standards specified in this section. Note that manufacturers complying with the default phase-in specified in paragraph (b)(6)(ii) of this section for Interim Tier 4 LDT3, LDT4, and MDPV will need to meet a Tier 3 fleet average NMOG+NOx standard in model year 2029, while in that same year LDV, LDT1, and LDT2 will need to meet a Tier 4 fleet average NMOG+NOx standard. Note that emission credits from those Tier 3 and Tier 4 light-duty program vehicles remain in the same averaging set.

(v) *Phase-in for high-power PHEV engine starts*. The following bin standards apply for high-power PHEV engine starts in model year 2029 instead of the analogous standards specified in paragraph (b)(4)(ii) of this section:

Table 5 to Paragraph (b)(6)(v)—Model Year 2029 Bin Standards for High-Power PHEV Engine Starts

FEL name	ACC II—High-power PHEV engine starts (mg/mile)
Bin 70	320
Bin 65	300
Bin 60	280
Bin 55	260
Bin 50	240
Bin 45	220
Bin 40	200
Bin 35	175
Bin 30	150
Bin 25	125
Bin 20	100
Bin 15	75
Bin 10	50

Bin 5 25

(vi) *MDPV*. Any vehicle that becomes an MDPV as a result of the revised definition in § 86.1803-01 starting in model year 2029 may remain subject to the heavy-duty Tier 3 standards in § 86.1816-18 under the default phase-in specified in paragraph (b)(6)(ii) of this section for model years 2029 and 2030.
(vii) *Recordkeeping*. Keep records as needed to show that you meet the requirements specified in this paragraph (b) for phasing in standards and for complying with declining fleet average standards.

* * * * *

(f) *Small-volume manufacturers*. Small-volume manufacturers may use the following phase-in provisions for light-duty program vehicles:
(1) Instead of the 25°C fleet average NMOG+NOx standards specified in this section, small-volume manufacturers may meet alternate fleet average standards of 30 mg/mile for model years 2029 through 2031. The 15 mg/mile standard applies starting in model year 2032.
(2) Instead of the phase-in specified in paragraph (b)(6)(i) of this section for all requirements other than the 25°C fleet average NMOG+NOx standards, small-volume manufacturers may comply with all those other requirements starting in model year 2032.

11. Amend § 86.1816-18 by revising paragraphs (a) introductory text and (b)(14) introductory text to read as follows:

§ 86.1816-18 Emission standards for heavy-duty vehicles.
(a) *Applicability and general provisions*. This section describes Tier 3 exhaust emission standards for complete heavy-duty vehicles. These standards are optional for incomplete heavy-duty vehicles and for heavy-duty vehicles above 14,000 pounds GVWR as described in § 86.1801-03. See § 86.1813-17 for evaporative and refueling emission standards. This section starts to apply in model year 2018, except that the provisions may apply to vehicles before model year 2018 as specified in paragraph (b)(11) of this section. This section applies for model year 2029 and later vehicles only as specified in § 86.1811-29. Separate requirements apply for MDPV as specified in § 86.1811-17. See subpart A of this part for requirements that apply for incomplete heavy-duty vehicles and for heavy-duty engines certified independent of the chassis. The following general provisions apply:

* * * * *

(b) * * *
(14) Starting in model year 2029, you may certify vehicles using the following transitional Tier 4 bins as part of the compliance demonstration for meeting the Tier 4 declining fleet average NMOG+NOx standard in § 86.1811-29(b)(6):

* * * * *

12. Amend § 86.1823-08 by revising paragraph (f)(1)(iv) introductory text to read as follows:

§ 86.1823-08 Durability demonstration procedures for exhaust emissions.

* * * * *

(f) * * *

(1) * * *

(iv) For Tier 4 vehicles, the DF calculated by these procedures may be used for determining compliance with all the standards identified in § 86.1811-29. At the manufacturer's option and using procedures approved by the Administrator, manufacturers may calculate a separate DF for the following standards and driving schedules:

* * * * *

13. Amend § 86.1827-01 by revising paragraph (a)(5) to read as follows:

§ 86.1827-01 Test group determination.

* * * * *

(a) * * *

(5) Subject to the same criteria emission standards, or FEL in the case of cold temperature NMHC or NMOG+NOx standards, except that a manufacturer may request to group vehicles into the same test group as vehicles subject to more stringent standards, so long as all the vehicles within the test group are certified to the most stringent standards applicable to any vehicle within that test group. For example, manufacturers may include medium-duty vehicles at or below 22,000 pounds GCWR in the same test group with medium-duty vehicles above 22,000 pounds GCWR, but all vehicles included in the test group are then subject to the off-cycle emission standards and testing requirements described in § 86.1811-29(e). Light-duty trucks and light-duty vehicles may be included in the same test group if all vehicles in the test group are subject to the same criteria exhaust emission standards.

* * * * *

14. Amend § 86.1829-15 by revising paragraphs (b)(2) and (3), (d)(1) introductory text, and (d)(8) and removing paragraph (d)(9). The revisions read as follows:

§ 86.1829-15 Durability and emission testing requirements; waivers.

* * * * *

(b) * * *

(2) Test vehicles as follows using the test procedures in 40 CFR part 1066 to demonstrate compliance with cold temperature exhaust emission standards:

(i) For Tier 3 and Interim Tier 4 vehicles, test one EDV in each durability group.

(ii) For Tier 4 final vehicles, test one EDV in each test group.

(3) Test one EDV in each test group to the discrete mid-temperature intermediate soak standard for a 40-minute soak as identified in § 86.1811-29.

* * * * *

(d) * * *

(1) For vehicles subject to the Tier 3 PM standards in § 86.1811-17 (not the Tier 4 PM standards in § 86.1811-29), a manufacturer may provide a statement in the application for certification that vehicles comply with applicable PM standards instead of submitting PM test data for a certain number of vehicles. However, each manufacturer must test vehicles from a minimum number of durability groups as follows:
* * * * *
(8) Manufacturers may provide a statement in the application for certification that medium-duty vehicles above 22,000 pounds GCWR comply with the off-cycle emission standards in § 86.1811-29(e) for all normal operation and use when tested as specified. Describe in the application for certification under § 86.1844-01(d)(8) any relevant testing, engineering analysis, or other information in sufficient detail to support the statement. We may direct you to include emission measurements representing typical engine in-use operation at a range of ambient conditions. For example, we may specify certain transient and steady-state engine operation that is typical for your vehicles. Also describe the procedure you used to determine a reference CO_2 emission rate, $e_{CO2FTPFCL}$, under § 86.1845-04(h)(6).
(9) [Reserved]
* * * * *

15. Amend § 86.1838-01 by revising paragraph (b)(1)(i)(A) to read as follows:

§ 86.1838-01 Small-volume manufacturer certification procedures.
* * * * *
(b) * * *
(1) * * *
(i) * * *
(A) At or below 5,000 units for the Tier 3 standards described in §§ 86.1811-17, 86.1813-17, and 86.1816-18 and the Tier 4 standards described in § 86.1811-29. This volume threshold applies for phasing in the Tier 3 and Tier 4 standards and for determining the corresponding deterioration factors.
* * * * *

16. Amend § 86.1844-01 by revising paragraph (d)(11)(iv) to read as follows:

§ 86.1844-01 Information requirements: Application for certification and submittal of information upon request.

* * * * *
(d) * * *
(11) * * *
(iv) For Tier 4 vehicles with spark-ignition engines, describe how AECDs comply with the requirements of § 86.1811-29(d).
* * * * *

17. Amend § 86.1845-04 by revising paragraph (h) introductory text to read as follows:

§ 86.1845-04 Manufacturer in-use verification testing requirements.

* * * * *

(h) *Off-cycle testing for high-GCWR medium-duty vehicles*. Medium-duty vehicles that are subject to off-cycle standards under § 86.1811-29(e) are subject to in-use testing requirements described in 40 CFR part 1036, subpart E, and 40 CFR 1036.530, with the following exceptions and clarifications:

* * * * *

18. Amend § 86.1860-17 by revising paragraph (a) to read as follows:

§ 86.1860-17 How to comply with the Tier 3 and Tier 4 fleet average standards.

(a) You must show that you meet the applicable Tier 3 fleet average NMOG+NOx standards from §§ 86.1811-17 and 86.1816-18, the Tier 3 fleet average evaporative emission standards from § 86.1813-17, and the Tier 4 fleet average NMOG+NOx standards from § 86.1811-29 as described in this section. Note that separate fleet average calculations are required for Tier 3 FTP and SFTP exhaust emission standards under § 86.1811-17.

* * * * *

19. Amend § 86.1861-17 by revising paragraphs (b)(5) and (b)(6) introductory text to read as follows:

§ 86.1861-17 How do the NMOG+NOx and evaporative emission credit programs work?

* * * * *

(b) * * *

(5) Tier 3 credits for NMOG+NOx may be used to demonstrate compliance with Tier 4 standards without adjustment, except as specified in § 86.1811-29(b)(6)(ii).

(6) A manufacturer may generate NMOG+NOx credits from model year 2029 through 2032 electric vehicles that qualify as MDPV and use those credits for certifying medium-duty vehicles, as follows:

* * * * *

20. Amend § 86.1862-04 by revising paragraph (a)(1) to read as follows:

§ 86.1862-04 Maintenance of records and submittal of information relevant to compliance with fleet average standards.

(a) * * *

(1) Tier 4 criteria exhaust emission standards, including cold temperature NMOG+NOx standards, in § 86.1811-29.

* * * * *

PART 1066—VEHICLE-TESTING PROCEDURES

21. The authority citation for part 1066 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

§ 1066.801 Applicability and general provisions.

* * * * *

(c) * * *

(1) * * *

(i) The FTP consists of one Urban Dynamometer Driving Schedule (UDDS) as specified in paragraph (a) of appendix I to 40 CFR part 86, followed by a 10-minute soak with the engine off and repeat driving through the first 505 seconds of the UDDS. Note that the UDDS represents about 7.5 miles of driving in an urban area. Engine startup (with all accessories turned off), operation over the initial UDDS, and engine shutdown make a complete cold-start test. The hot-start test consists of the first 505 seconds of the UDDS following the 10-minute soak and a hot-running portion of the UDDS after the first 505 seconds. The first 505 seconds of the UDDS is considered the transient portion; the remainder of the UDDS is considered the stabilized (or hot-stabilized) portion. The hot-stabilized portion for the hot-start test is generally measured during the cold-start test; however, in certain cases, the hot-start test may involve a second full UDDS following the 10-minute soak, rather than repeating only the first 505 seconds as described in § 1066.815. These FTP provisions and sampling options apply equally for cold temperature testing as described in paragraph (c)(6) of this section.

* * * * *

22. Amend § 1066.815 by revising paragraphs (a) through (c) to read as follows:

§ 1066.815 Exhaust emission test procedures for FTP testing.

(a) *General*. The FTP exhaust emission test sequence for –7 °C and 25 °C testing consists of a cold-start test and a hot-start test as described in § 1066.801. Except as specified, the same procedures apply for gaseous emission measurements you use to calculate fuel economy.

(b) *PM sampling options*. Collect PM using any of the procedures specified in paragraphs (b)(1) through (5) of this section and use the corresponding equation in § 1066.820 to calculate FTP composite emissions, except that you must use the procedures specified in paragraph (b)(7) of this section for HEV testing at 25 °C. Testing must meet the requirements related to filter face velocity as described in § 1066.110(b)(2)(iii)(C), except as specified in paragraphs (b)(5) and (6) of this section. For procedures involving flow weighting, set the filter face velocity to a weighting target of 1.0 to meet the requirements of § 1066.110(b)(2)(iii)(C). Allow filter face velocity to decrease as a percentage of the weighting factor if the weighting factor is less than 1.0 and do not

change the nominal CVS flowrates or secondary dilution ratios between FTP or UDDS test intervals. Use the appropriate equations in § 1066.610 to show that you meet the dilution factor requirements of § 1066.110(b)(2)(iii)(B). If you collect PM using the procedures specified in paragraph (b)(5) or (6) of this section, the residence time requirements in 40 CFR 1065.140(e)(3) apply, except that you may exceed an overall residence time of 5.5 s for sample flow rates below the highest expected sample flow rate.

(1) You may collect a separate PM sample for transient and stabilized portions of the cold-start UDDS and the hot-start UDDS with three bags. Use the stabilized portion of the cold-start test (bag 2) in place of the stabilized portion of the hot-start test (bag 4).

(2) You may collect a separate PM sample for transient and stabilized portions of the cold-start UDDS and the hot-start UDDS with four bags.

(3) You may collect PM on one filter over the cold-start UDDS and on a separate filter over the hot-start UDDS.

(4) You may collect PM on one filter over the cold-start UDDS (bag 1 and bag 2) and on a separate filter over the 867 seconds of the stabilized portion of the cold-start UDDS and the first 505 seconds of the hot-start UDDS (bag 2 and bag 3). Note that this option involves duplicate measurements during the stabilized portion of the cold-start UDDS.

(5) You may collect PM on a single filter over the cold-start UDDS and the first 505 seconds of the hot-start UDDS using one of the following methods:

(i) Adjust your sampling system flow rate over the filter to weight the filter face velocity over the three intervals of the FTP based on weighting targets of 0.43 for bag 1, 1.0 for bag 2, and 0.57 for bag 3.

(ii) Maintain a constant sampling system flow rate over the filter for all three intervals of the FTP by increasing overall dilution ratios for bag 1 and bag 3. To do this, reduce the sample flow rate from the exhaust (or diluted exhaust) such that the value is reduced to 43% and 57%, respectively, of the bag 2 values. For constant-volume samplers, this requires that you decrease the dilute exhaust sampling rate from the CVS and compensate for that by increasing the amount of secondary dilution air.

(6) You may collect PM on a single filter over the cold-start UDDS and the full hot-start UDDS using one of the following methods:

(i) Adjust your sampling system flow rate over the filter to weight the filter face velocity based on weighting targets of 0.75 for the cold-start UDDS and 1.0 for the hot-start UDDS.

(ii) Maintain a constant sampling system flow rate over the filter for both the cold-start and hot-start UDDS by increasing the overall dilution ratio for the cold-start UDDS. To do this, reduce the sample flow rate from the exhaust (or diluted exhaust) such that the value is reduced to 75% of the hot-start UDDS value. For constant-volume samplers, this requires that you decrease the dilute exhaust

sampling rate from the CVS and compensate for that by increasing the amount of secondary dilution air.

(7) For HEV testing at 25 °C, you must operate the vehicle and collect PM over a full cold-start UDDS and a full hot-start UDDS. You may use any of the methods described for four-bag sampling in paragraphs (b)(2) through (6) of this section.

(c) *Gaseous sampling options*. Collect gaseous samples using one of the following procedures:

(1) Except as specified in paragraph (c)(2) of this section, you must collect separate gaseous samples for transient and stabilized portions of the cold-start UDDS (bag 1 and bag 2) and for the transient portion of the hot-start UDDS (bag 3). Do not collect a sample for the stabilized portion of the hot-start test (bag 4), even if testing includes vehicle operation over a full hot-start UDDS. Exceptions for certain circumstances apply as follows:

(2) For HEV testing at 25 °C, you must operate the vehicle over a full cold-start UDDS and a full hot-start UDDS. Collect gaseous samples separately or together for the transient and stabilized portions of each UDDS (bag 1 and bag 2 together or separately, and bag 3 and bag 4 together or separately). Collect gaseous samples as described in paragraph (c)(1) of this section for HEV testing at –7 °C.

* * * * *

23. Amend § 1066.830 by revising paragraph (b) to read as follows:

§ 1066.820 Composite calculations for FTP exhaust emissions.

* * * * *

(b) Calculate the final composite gaseous test results as a mass-weighted value, $e_{[\text{emission}]\text{-FTPcomp}}$, in grams per mile using the following equation:

$$e_{[\text{emission}]\text{-FTPcomp}} = 0.43 \cdot \left(\frac{m_{\text{c}}}{D_{\text{ct}} + D_{\text{cs}}}\right) + 0.57 \cdot \left(\frac{m_{\text{h}}}{D_{\text{ht}} + D_{\text{hs}}}\right)$$

Eq. 1066.820-1

Where:

m_{c} = the combined mass emissions determined from the cold-start UDDS test interval (generally known as bag 1 and bag 2), in grams.

D_{ct} = the measured driving distance from the transient portion of the cold-start test (bag 1), in miles.

D_{cs} = the measured driving distance from the stabilized portion of the cold-start test (bag 2), in miles.

m_{h} = the combined mass emissions determined from the hot-start UDDS test interval in grams. This is the hot-stabilized portion from either the first or second UDDS (bag 2, unless § 1066.815(c) requires you to measure bag 4), in addition to the hot transient portion (bag 3).

D_{ht} = the measured driving distance from the transient portion of the hot-start test (bag 3), in miles.
D_{hs} = the measured driving distance from the stabilized portion of the hot-start test (bag 4), in miles. Set $D_{hs} = D_{cs}$ for testing where the hot-stabilized portion of the UDDS is not used for emission sampling.
* * * * *

24. Amend § 1066.830 by revising the introductory text to read as follows:

§ 1066.830 Supplemental Federal Test Procedures; overview.
Sections 1066.831 and 1066.835 describe the detailed procedures for the Supplemental Federal Test Procedure (SFTP). This testing applies for Tier 3 vehicles subject to the SFTP standards in 40 CFR 86.1811-17 or 86.1816-18. The SFTP test procedure consists of FTP testing and two additional test elements—a sequence of vehicle operation with more aggressive driving and a sequence of vehicle operation that accounts for the impact of the vehicle's air conditioner. Tier 4 vehicles subject to 40 CFR 86.1811-29 must meet standards for each individual driving cycle.
* * * * *