GIBSON DUNN

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U.S. EPA Releases Final Model Year 2027+ Vehicle Multi-Pollutant Emissions Standards: Practical Takeaways for the Automotive Industry

The Final Rule sets new emissions standards for light- and medium-duty vehicles, including greenhouse gas emissions standards, and imposes new warranty, durability, and certification requirements, including for electric vehicles.

On March 20, 2024, the U.S. Environmental Protection Agency ("EPA") finalized its Multi-Pollutant Emissions Standards for model year ("MY") 2027 and later light- and medium-duty vehicles ("Final Rule"),[1] following promulgation of a proposed rule on May 5, 2023 ("Proposed Rule").[2] This Final Rule sets new, strict U.S. emissions standards for light- and medium-duty vehicles, including greenhouse gas ("GHG") emissions standards. It also confirms a number of changes to vehicle certification, testing, durability, warranty provisions, and credit provisions, including new in-use requirements for electric vehicles ("EVs") and updates regarding emission-related parts and auxiliary emission control device ("AECD") disclosures.

Emission Standards. Like the Proposed Rule, the Final Rule covers MY 2027 and later light- and medium-duty vehicles, and sets new standards for both GHGs and criteria pollutants that will phase-in over MYs 2027 and 2032.

1. **GHGs**. The Final Rule utilizes technology-neutral performance standards and as such, in contrast to the approach taken by the California Air Resources Board ("CARB") in its Advanced Clean Cars II rule ("ACC II"),[3] continues to avoid an explicit EV mandate. Structurally, EPA's approach employs the same framework currently used for U.S. GHG standards (i.e., a fleet average with "footprints" assigned to specific vehicle models).In the Proposed Rule, EPA set forth a preferred approach under which the industry-wide average GHG emissions target for the light-duty fleet would be 82 g/mi in MY 2032, representing a 56 percent reduction in average emission target levels from the existing MY 2026 standards. Citing comments from the automotive industry, EPA enacted via the Final Rule standards that ramp up more slowly in earlier model years and result in an industry-wide average GHG emissions target for the light-duty fleet of 85 g/mi in MY 2032. This represents a 49-percent reduction compared to MY 2026.

EPA also eased the medium-duty fleet standards, particularly for earlier model years. In the Proposed Rule, industry-wide average GHG emissions targets for the medium-duty fleet were 438 g/mi in MY 2027 and 275 g/mi in MY 2032. As enacted in the Final Rule, they are 461 g/mi in MY 2027 and 274 g/mi in MY 2032.

2. **Non-Methane Organic Gases Plus Nitrogen Oxides ("NMOG+NOx")**. EPA has similarly tightened NMOG+NOx emissions standards, but again, the standards in the Final Rule are slightly more relaxed than those in the Proposed Rule. For light-duty vehicles, EPA proposed NMOG+NOx standards that would phase-down to a fleet average level of 12 mg/mi by MY 2032; it has enacted via the Final Rule a standard of

15 mg/mi by MY 2032, representing a 50 percent reduction from the existing standards for MY 2025. For medium-duty vehicles, EPA proposed NMOG+NOX standards that would require a fleet average level of 60 mg/mi by MY 2032; it has enacted via the Final Rule a standard of 75 mg/mi, representing a 58-70 percent reduction from current Tier 3 standards. EPA also finalized cold temperature (-7°C) NMOG+NOX standards for light- and medium-duty vehicles to ensure robust emissions control over a broad range of operating conditions.

3. **Particulate Matter ("PM")**. EPA enacted its proposed PM standard of 0.5 mg/mi for light- and medium-duty vehicles and a requirement that the standard be met across three test cycles, including a cold temperature (-7°C) test. However, it has given manufacturers more time to meet these standards as compared to the Proposed Rule, generally providing an additional year to comply (until 2030 or 2031, depending on vehicle class). Notably, EPA's technical analysis on the proposed stringency of the PM standard contemplated the use of gasoline particulate filters ("GPFs"), similar to ACC II. EPA explained that its decision to allow additional time to achieve compliance was in part in recognition of the fact that GPFs are not "drop-in" technology and manufacturers will need lead time to adopt the technology for U.S. applications.

EV Durability and Warranty Requirements. Similar to ACC II, EPA is adding a new battery durability requirement for light- and medium-duty battery-electric vehicles ("BEVs") and plug-in hybrid electric vehicles ("PHEVs"). In addition, the Agency has revised regulations to include BEV and PHEV batteries and associated electric powertrain components under existing emission-related warranty provisions.

1. **Durability**. EPA has finalized a new battery durability program, the requirements and framework of which are largely identical to those outlined in the United Nations Economic Commission for Europe's Global Technical Regulation No. 22 ("GTR No. 22"), which is incorporated by reference in the Final Rule. GTR No. 22 includes three components—battery state-of-health monitoring, monitoring accuracy requirements, and minimum performance requirements. Thus, the Final Rule requires manufacturers to develop and implement an on-board battery state-of-health monitor and demonstrate its accuracy through in-use vehicle testing. The Final Rule also requires minimum performance requirements for the battery throughout the vehicle's useful life. EPA has created additional testing requirements for BEVs and PHEVs by manufacturers (to be performed several times during their useful life), and reporting requirements to demonstrate that the vehicles are meeting the proposed durability requirements.

2. **Warranty**. For both light- and medium-duty BEVs and PHEVs, EPA has also finalized its designation of the high-voltage battery and associated electric powertrain components as "specified major emission control components" under Clean Air Act Section 207(i)(2), subjecting these parts to a warranty period of 8 years or 80,000 miles.

3. **Legal Authority.** In the Final Rule, EPA addressed comments—particularly from the Alliance for Automotive Innovation—that it does not have authority to adopt durability and warranty requirements for batteries in BEVs. EPA has taken the position that batteries are emission-related by nature because battery integrity is vital to the vehicle's

emission performance, *e.*, the battery is the component that allows a BEV to operate without emissions and is thus emission-related.

Other Certification Changes. The Final Rule contains a number of changes to the requirements applicable to the certification and testing of vehicles.

1. **Changes to the Part 2 Application – GHG Emission-Related Parts and AECDs**. Consistent with the Proposed Rule, EPA has in the Final Rule revised the regulatory text regarding certification applications to make clear that manufacturers must include part numbers and descriptions of GHG emission-related parts, components, systems, software or elements of design, and AECDs. The new language for 40 C.F.R. § 86.1844-0.1(e) requires manufacturers to "Identify all emission-related components, including those that can affect GHG emissions. Also identify software, AECDs, and other elements of design that are used to control criteria, GHG, or evaporative/refueling emissions."

2. **Changes to AECD Determinations**. The Final Rule includes certain changes relating to the use and disclosure of AECDs. First, it prohibits the use of commanded enrichment as an AECD for either power or component protection during normal operation and use. Second, as it relates to manufacturers' consideration of allowable AECDs, the rule points to the regulatory definition of "normal operation and use," which is "vehicle speeds and grades of public roads, and vehicle loading and towing within manufacturer recommendations, even if the operation occurs infrequently." In particular, the inclusion of towing as "normal operation and use" mirrors CARB's move to strengthen medium-duty standards under ACC II, citing the need to ensure that vehicles used for towing have sufficient emission controls during the higher-load operations associated with towing.

3. **Non-EV Warranties**. EPA has also revised the emission-related warranty provisions for non-electric vehicles by designating additional components as "specified major emission control components" subject to the 8 year/80,000 mile warranty period—specifically selective catalytic reduction ("SCR") catalysts, exhaust gas recirculation components, and diesel and gasoline particulate filters. EPA has also confirmed that it considers pumps, injectors, sensors, tanks, heaters, and other components related to these systems to be within the definition of "specified major emission control components" and thus subject to this longer warranty period. The amended regulatory text of 40 C.F.R. § 85.2103(d)(1) lists the following components subject to these warranty terms: "(i) Catalytic converters and SCR catalysts, and related components[;] (ii) [p]articulate filters and particulate traps, used with both spark-ignition and compression-ignition engines[;] (iii) [c]omponents related to exhaust gas recirculation with compression-ignition engines[;] (iv) [e]mission control module; and (v) [b]atteries serving as a Renewable 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."

Credits. Beyond emission standards, the Final Rule includes a number of important changes to certain optional credit programs, although it offers greater flexibility than the Proposed Rule.

1. **Air Conditioning ("AC") Credits**. In the Proposed Rule, EPA proposed limiting eligibility for AC system efficiency credits to only vehicles with internal combustion engines starting in MY 2027. It has finalized this proposal. In addition, EPA proposed eliminating credits for the use of low refrigerant leakage systems and for the use of alternative low global warming potential refrigerants. However, the Final Rule takes a different approach—EPA is instead phasing down available credits for MYs 2027–2030 and will retain a small permanent leakage credit for MY 2031 and later.

2. **Off-Cycle Credits**. EPA had also proposed to sunset the off-cycle credits program for both light- and medium-duty vehicles, phasing down credit availability starting in MY 2028 and eliminating credits altogether in MY 2031. Finding that the off-cycle program achieved its goal of incentivizing the adoption of innovative technologies to reduce emissions, while stating that some vehicles would still benefit from these off-cycle technologies and that manufacturers may have already made use of off-cycle credits in planned compliance strategies, the Final Rule instead begins to limit off-cycle credits in MY 2031. Credits will no longer be available starting in MY 2033.

Comparison to ACC II and Key Takeaways.

1. The emissions standards in the Final Rule and in ACC II diverge in several meaningful respects. Most significantly, the agencies have articulated fundamentally different approaches to try to reduce the prevalence of internal combustion engine vehicles: EPA has presented its rule as continuing with the traditional footprint-based approach, ostensibly allowing a wide variety of technologies to be combined in a manufacturer's compliance plan, whereas CARB is using a fleet composition mandate focused on EVs.

2. From a practical implementation perspective, the divergences between the rules with respect to warranty and durability are significant because manufacturers will have to ensure (and track) compliance with distinct EPA and CARB regulations—not only for emissions standards, but also for the novel regulatory provisions attached to EVs. For example, CARB's new "propulsion-related parts" warranty in ACC II is different than the EPA-mandated warranty coverage of the high-voltage battery and associated electric powertrain components. The federal and state rules also vary significantly on their approach to battery durability. And while EPA will accept compliance with the entirety of ACC II in lieu of the EPA durability program, manufacturers must declare their intention to use this pathway if this is how they intend to comply.

3. Like the new concept of propulsion-related parts in ACC II, under the EPA Final Rule, manufacturers may need to set up new processes and guidelines to identify all components that "can affect GHG emissions" for their AECD disclosures by MY 2027.

4. Although EPA did not update the definition of "defeat device" in this rulemaking, prior EPA guidance has indicated the Agency considers the Clean Air Act's defeat device prohibition applicable to EVs. Manufacturers should ensure that certification range testing procedures consider EPA guidance on the use of drive modes and adaptive features.

[1] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles (Mar. 20, 2024), *available at* https://www.epa.gov/system/files/documents/2024-03/lmdv-veh-standrds-ghg-emission-frm-2024-03.pdf.

[2] Proposed Rule, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 88 Fed. Reg. 29184 (May 5, 2023).

[3] *See Advanced Clean Cars II (ACC II) Regulations*, CA.Gov, https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii (last updated Aug. 22, 2022).

The following Gibson Dunn attorneys assisted in preparing this update: Stacie Fletcher, Rachel Levick, Mia Donnelly, and Veronica J.T. Goodson.

Gibson Dunn's lawyers are available to assist in addressing any questions you may have regarding these developments. To learn more about these issues, please contact the Gibson Dunn lawyer with whom you usually work, the authors, or any of the following leaders and members of the firm's Environmental Litigation and Mass Tort practice group:

Environmental Litigation and Mass Tort:
Stacie B. Fletcher – Washington, D.C. (+1 202.887.3627, sfletcher@gibsondunn.com)
David Fotouhi – Washington, D.C. (+1 202.955.8502, dfotouhi@gibsondunn.com)
Rachel Levick – Washington, D.C. (+1 202.887.3574, rlevick@gibsondunn.com)
Mia Donnelly – Washington, D.C. (+1 202.887.3617, mdonnelly@gibsondunn.com)
Veronica J.T. Goodson – Washington, D.C. (+1 202.887.3719, vgoodson@gibsondunn.com)