

---

# Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards

## Regulatory Update

# Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards -Proposed Rule

The Environmental Protection Agency (EPA) is proposing to strengthen federal greenhouse gas (GHG) emissions standards for passenger cars and light trucks by setting stringent requirements for reductions through Model Year (MY) 2026. The proposed 2023-2026 MY standards would achieve significant GHG emissions reductions along with reductions in other pollutants. The proposal would result in substantial public health and welfare benefits, while providing consumers with savings from lower fuel costs.

Today’s action would set the U.S. on a course to achieve ambitious GHG emissions reductions from transportation over the long term. The proposal provides a foundation for building on rapidly developing trends toward zero-emission technologies and the substantial reductions in air pollution they will make possible. The proposal also outlines the Agency’s plans for a subsequent rulemaking to set standards for MY 2027 and beyond to further transition the light-duty vehicle fleet toward a zero emissions future.

## Putting the Program Back on Track

Today’s proposal puts EPA’s clean cars program back on track to achieve significant GHG emissions reductions over the long term. The proposal would prompt automakers to use clean technologies that are available today, and would help stimulate production of more electric and hybrid vehicles. This rule is a critical step to setting the U.S. on a path to a zero-emissions transportation future.

The proposal would revise current GHG standards beginning in MY 2023 and increase in stringency year-over-year through MY 2026. These proposed standards would increase in stringency from MY 2022 to MY 2023 by 10 percent, followed by a nearly five percent stringency increase in each model year from 2024 through 2026. This proposal would significantly strengthen current standards, which become only 1.5 percent more stringent each year. EPA is not proposing to revise GHG emissions standards for MY 2021 and MY 2022.

**Table 1: Comparisons of Proposed Standard to Previous Light Duty GHG Emission Standard Projections for Model Year 2026**

	<b>EPA Projected Fleet-wide CO<sub>2</sub> Emissions Standards</b>	<b>EPA CO<sub>2</sub> standards expressed as “MPG equivalent”</b>	<b>EPA Estimated Real World Label Value*</b>
<b>Proposed Standards</b>	171 grams/mile	52.0 mpg	38.2 mpg
<b>2020 Final Rule standard (currently in effect)</b>	205 grams/mile	43.3 mpg	32.2 mpg
<b>2012 Final Rule standards</b>	177 grams/mile	50.1 mpg	36.8 mpg

\*This is a value that would be comparable to what a consumer would see on a fuel economy label and does not incorporate the GHG emissions reduction benefits of improved air conditioning.

## **Climate Urgency**

Making cars cleaner is critical to address climate change. Transportation is the single largest source of GHG emissions in the United States, making up 29 percent of all emissions. Within the transportation sector, passenger cars and trucks are the largest contributor, at 58 percent of all transportation sources and 17 percent of total U.S. GHG emissions. The proposed standards will contribute toward the goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels, and reducing the probability of severe climate change-related impacts, including heat waves, drought, sea level rise, extreme climate and weather events, coastal flooding, and wildfires. Reductions in GHG emissions from this rule would benefit populations that may be especially vulnerable to damages associated with climate change, such as the very young, the elderly, communities of color, low-income disabled, and indigenous populations.

## **Benefits and Costs**

This proposal would provide significant benefits with respect emission reductions, public health, and fuel savings.

- The proposed rule would save American drivers between \$120 to \$250 billion in fuel costs through 2050.
- This proposal would result in 2.2 billion tons of avoided CO<sub>2</sub> emissions through 2050. The cumulative emissions avoided through 2050 are roughly equal to GHG emissions from all petroleum combustion in the U.S. for all of 2019.
- EPA estimates that on average, the cost to auto manufacturers to comply would be just over \$1,000 per vehicle in MY 2026.
- Overall, the benefits of the proposed standards would far exceed the total costs. The proposal would provide between \$86 and \$140 billion in net benefits through 2050. Benefits result from improved public health, fuel savings, and reduced impacts from climate change such as property damages due to increased flooding and changes to agricultural production.
  - Between \$3.6 and \$8.8 billion of the total benefits through 2050 are attributable to reduced emissions of non-GHG pollutants primarily those that contribute to ambient concentrations of smaller particulate matter (PM<sub>2.5</sub>). PM<sub>2.5</sub> is associated with premature death and serious health effects such as hospital admissions due to respiratory and cardiovascular illnesses, nonfatal heart attacks, aggravated asthma, and decreased lung function.

## **Cost Savings for Consumers**

Consumers would benefit from EPA's proposed standards due to cost savings from reduced fuel costs. EPA estimates that reduced fuel costs would outweigh the increase in vehicle costs by about \$900 over the lifetime of a MY 2026 vehicle. The fuel savings accumulate over time, with savings growing relative to costs. For example, a consumer who purchases a new MY2026 car or truck would recover 70 percent of the added vehicle cost through fuel savings after five years. The benefits are even higher for used car buyers. A consumer purchasing a used MY 2026 car in 2031 would recover twice the added vehicle cost through fuel savings after five years. Further, a consumer purchasing a used MY 2026 car in 2036 would recover three times the added vehicle cost through fuel savings after five years.

## **Achievable Efficiency Gains, Building on Sector Trends**

EPA's in-depth and rigorous technical analysis demonstrates that the proposed standards are readily achievable. The proposed standards build upon the decade-long progress the auto industry has made in introducing a wide lineup of ever more fuel-efficient, GHG-reducing technologies. Under EPA's new proposed standards, manufacturers will continue to increase the use of advanced engine and transmission technologies, and further expand offerings of car and truck models with either mild or strong electric hybridization. These technologies are already available and exist in many vehicles sold today, and expanding their use will allow the auto industry to achieve the proposed standards. Achieving the proposed standards from MYs 2023 to 2026 is facilitated by the various flexibilities the program affords manufacturers including credit-based emissions averaging, banking and trading.

Most automakers have recently launched ambitious plans to develop and produce increasing numbers of zero- and near-zero-emission vehicles. EPA recognizes, however, that during the near-term timeframe of the proposed standards through MY 2026, the new vehicle fleet likely will continue to consist primarily of gasoline-fueled vehicles. We project that during the four-year ramping-up of the stringency of this proposed program, the standards could be met with a combination of internal combustion engine vehicles, hybrid electric vehicles, and gradually increasing sales of electric vehicles (EVs)<sup>1</sup>, up to about an eight percent market share by MY 2026. Given that EVs represented about two percent of the new vehicle market in MY 2019, this would represent a significant increase in EV market penetration. We believe this increase is reasonable when considering the momentum with which automakers have announced plans to increase their production.

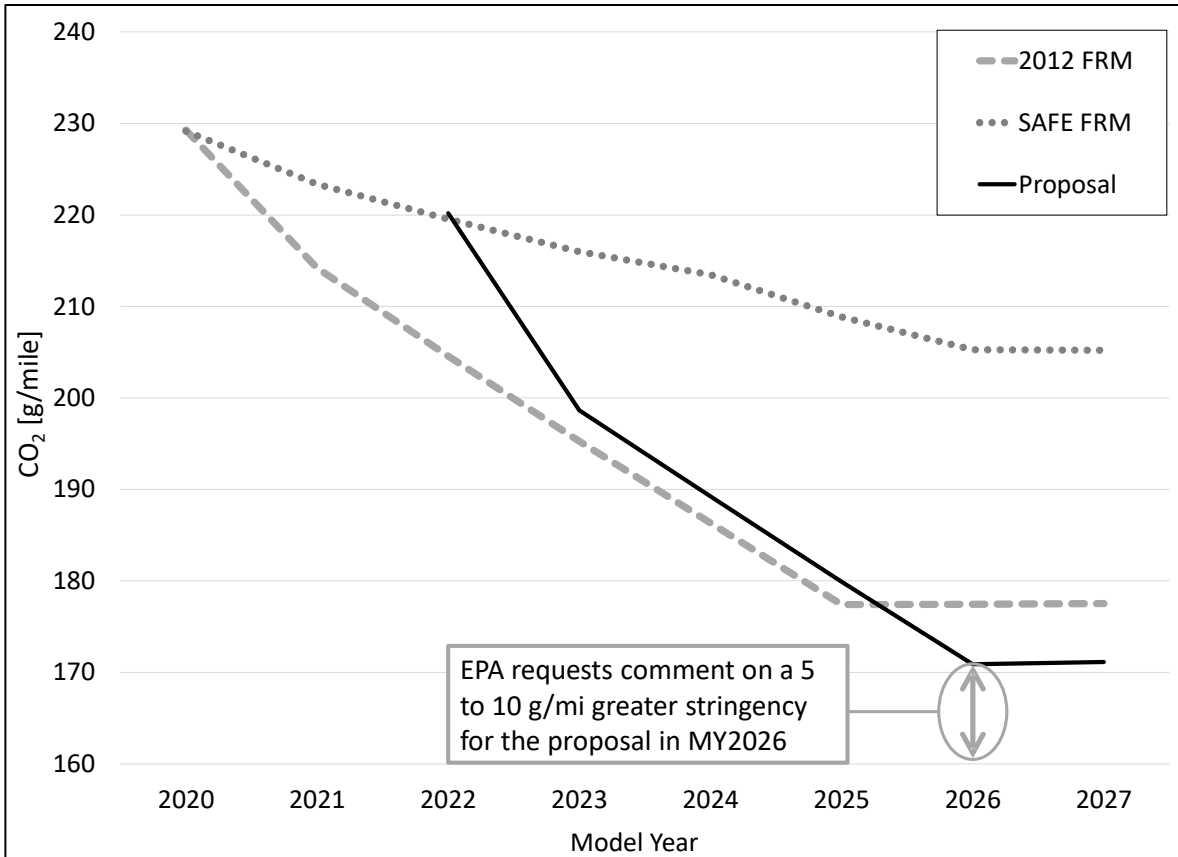
## **Emissions Standards**

As with EPA's previous light-duty GHG programs, EPA is proposing standards expressed as "footprint-based curves" for both passenger cars and trucks. Under this approach, each manufacturer has a unique standard for the passenger car and truck categories, for each model year, based on the sales-weighted footprint-based CO<sub>2</sub> targets of the vehicles produced in each MY.

The graphic below (Figure 1) shows EPA's proposed standards, expressed as average fleetwide GHG emissions targets (cars and trucks combined), projected through MY 2026. For comparison, the figure also shows the corresponding targets for the 2020 rule that is currently in effect and the prior standards under the 2012 rule. The projected fleet targets for this proposed rule increase in stringency in MY 2023 by about 10 percent (from the existing standards in MY 2022), followed by stringency increases thereafter of about 5 percent year over year from MY 2024 through MY 2026. As with all EPA vehicle emissions standards, the proposed MY 2026 standards would then remain in place for all subsequent MYs, unless and until they are revised in a subsequent rulemaking.

---

<sup>1</sup>This includes both electric vehicles and plug-in hybrid electric vehicles (PHEVs).



**Figure 1: EPA Proposed Industry Fleet-Wide CO<sub>2</sub> Compliance Targets, Compared to 2012 and 2020 Rules, grams/mile, 2021-2026**

Table 1 (below) presents the estimates of EPA’s proposed standards presented in Figure 1, in terms of the projected overall industry fleetwide CO<sub>2</sub>-equivalent emission compliance target levels. The industry fleetwide estimates in Table 1 are projections based on modeling EPA conducted for the proposed rule, taking into consideration projected fleet mix and footprints for each manufacturer’s fleet in each model year. In addition to the standards for MY 2026 presented here, EPA is also requesting comment on MY 2026 standards that would result in fleet average levels that are 5-10 g/mile more stringent than the levels shown. Table 2 presents projected industry fleet average year-over-year percent CO<sub>2</sub> reductions comparing the existing standards under the existing standards (2020 rule) and the proposed revised standards.

**Table 1: Projected Industry Fleet-wide CO<sub>2</sub> Compliance Targets (grams/mi)**

	2022*	2023	2024	2025	2026**
Cars	180	165	157	149	142
Trucks	260	232	221	210	199
Combined Cars and Trucks	220	199	189	180	171

\*2020 rule targets included for reference.

\*\* EPA is also considering MY 2026 standards that would result in fleet average levels that are 5-10 g/mile more stringent than the levels shown.

The combined car/truck CO<sub>2</sub> targets are a function of assumed car/truck shares. For this illustration, we assume an approximately 50/50% split in MYs 2023-2026.

**Table 2: Projected Industry Fleet Average Target Year-Over-Year Percent Reductions**

	<b>2020 Rule</b>			<b>Proposal</b>		
	<b>Cars</b>	<b>Trucks</b>	<b>Combined</b>	<b>Cars</b>	<b>Trucks</b>	<b>Combined</b>
2023	1.7%	1.5%	1.6%	8.3%	10.8%	9.8%
2024	1.1%	1.2%	1.2%	4.8%	4.7%	4.7%
2025	2.3%	2.0%	2.2%	5.1%	5.0%	4.9%
2026	1.8%	1.6%	1.7%	4.7%	5.2%	5.0%

**Table 3: Model Year 2026 Technology Penetrations Projected under the Proposal**

<b>Technology</b>	<b>New Light-duty Vehicle Fleet Penetration</b>
Advanced High-efficiency Engines	56%
8 speed and other advanced transmissions	64%
Mild Hybrid	2%
Strong Hybrid	5%
Battery Electric Vehicles + Plug-in Hybrid Electric Vehicles	8%

## **Program Flexibilities and Incentives**

EPA's regulatory programs for cars and trucks offer automakers compliance options to help them meet standards in the ways that are most appropriate for each company. In this proposal, EPA retains the existing GHG program credit-based emissions averaging, banking, and trading flexibilities that have been a feature of EPA's CO<sub>2</sub> emissions standards since EPA first established them in 2010 and that automakers have relied on since then. In addition, we are proposing a targeted set of new or modified compliance flexibilities and incentives that we believe are appropriate given the stringency and lead time of the proposed standards, including:

- A limited extension of credits generated by overcompliance with the MYs 2016 through 2020 standards that can be carried forward for compliance with the proposed standards.
- A restoration of the advanced technology vehicle multiplier credits for MYs 2022 through 2025 with a cumulative credit cap, to encourage manufacturers to accelerate the introduction of zero and near-zero emissions vehicles and maintain momentum for that market transition.
- Restoration of the 2012 rule's full-size pickup truck incentives for strong hybrids or similar performance-based credit for MYs 2022 through 2025. These provisions were removed in the 2020 rule.
- An increase of the "off-cycle" credits menu cap from 10 g/mile to 15 g/mile. Off-cycle credits recognize the emissions benefits of technologies that provide real-world emissions reductions but which are not captured on the EPA compliance tests. These include technologies such as high-efficiency headlamps or solar reflective paint that keeps the vehicle cabin cooler to reduce air conditioning needs.

## **Safety**

EPA has always considered safety in its rulemakings, and this proposal is no exception. This proposal would have no adverse impact on driving safety. EPA estimates that the risk of fatal and non-fatal injuries will remain virtually unchanged by this program.

## **Public Participation**

EPA welcomes public input into this rulemaking. EPA plans to hold a virtual public hearing on August 25, 2021. An additional session may be held on August 26, if necessary to accommodate the number of testifiers that sign up to testify.

Please refer to the separate *Federal Register* notice issued by EPA for public hearing details. The hearing notice is available at <https://www.epa.gov/regulations-emissions-vehicles-and-engines/proposed-rule-revise-existing-national-ghg-emissions>.

Written comments must be received on or before September 27, 2021.