U.S. DEPARTMENT OF TRANSPORTATION
U.S. ENVIRONMENTAL PROTECTION AGENCY

NHTSA and EPA Proposed SAFE Vehicle Rule

Overview of the Alternatives Analyzed

Today, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (EPA) released a notice of proposed rulemaking, the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule).

Agencies typically consider regulatory alternatives in proposals as a way of evaluating the comparative effects of different potential ways of accomplishing their desired goal. To ensure robust public comment, NHTSA and EPA are evaluating eight alternatives.

Alternatives analysis begins with a "no-action" alternative, typically described as what would occur in the absence of any regulatory action. Today's proposal includes a no-action alternative, described below, as well as seven "action alternatives" besides the proposal.

Aside from the no-action alternative, NHTSA and EPA defined the different regulatory alternatives in terms of percent-increases in corporate average fuel economy (CAFE) and greenhouse gas (GHG) stringency from year to year. Under some alternatives, the rate of increase is the same for both passenger cars and light trucks; under others, the rate of increase differs. Two alternatives also involve a gradual discontinuation of CAFE and average GHG adjustments reflecting the application of technologies that improve air conditioner (A/C) efficiency or, in other ways, improve fuel economy under conditions not represented by long-standing fuel economy test procedures. For increased harmonization with NHTSA CAFE standards, which cannot account for such issues, under Alternatives 1-8, EPA would regulate tailpipe carbon dioxide (CO_2) independently of A/C refrigerant leakage, nitrous oxide (N_2O) and methane (CH_4) emissions.

Under the no-action alternative, EPA would continue to regulate A/C refrigerant leakage, nitrous oxide and methane emissions under the overall CO_2 standard. Like the baseline no-action alternative, all of the alternatives are more stringent than the preferred alternative.
EPA also seeks public comment on retaining the existing credit program for regulation of A/C refrigerant leakage, nitrous oxide, and methane emissions as part of the CO_2 standard.
The agencies have examined these alternatives because the agencies intend to continue considering them as options for the final rule. The agencies seek public comment on these alternatives and on the analysis presented here, seek any relevant data and information, and will review responses. That review could lead the agencies to select one of the other regulatory alternatives for the final rule.

The table below shows the different alternatives evaluated in this proposal.

Regulatory Alternatives Currently under Consideration

Alternative	Change in stringency	A/C efficiency and off-cycle provisions	CO_2 Equivalent AC Refrigerant Leakage, Nitrous Oxide and Methane Emissions Included for Compliance?
Baseline/ No-Action	MY 2021 standards remain in place; MYs 2022-2025 augural CAFE standards are finalized and GHG standards remain unchanged; MY 2026 standards are set at MY 2025 levels	No change	Yes, for all MYs [1]
1 (Proposed)	Existing standards through MY 2020, then 0%/year increases for both passenger cars and light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021[2]
2	Existing standards through MY 2020, then 0.5%/year increases for both passenger cars and light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021
3	Existing standards through MY 2020, then 0.5%/year increases for both passenger cars and light trucks, for MYs 2021-2026	Phase out these adjustments over MYs 2022-2026	No, beginning in MY 2021
4	Existing standards through MY 2020, then 1%/year increases for passenger cars and 2%/year increases for light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021
5	Existing standards through MY 2021, then 1%/year increases for passenger cars and 2%/year increases for light trucks, for MYs 2022-2026	No change	No, beginning in MY 2022
6	Existing standards through MY 2020, then 2%/year increases for passenger cars and 3%/year increases for light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021
7	Existing standards through MY 2020, then 2%/year increases for passenger cars and 3%/year increases for light trucks, for MYs 2021-2026	Phase out these adjustments over MYs 2022-2026	No, beginning in MY 2021

[1] Carbon dioxide equivalent of air conditioning refrigerant leakage, nitrous oxide and methane emissions are included for compliance with the EPA standards for all MYs under the baseline/no-action alternative. Carbon dioxide equivalent is calculated using the Global Warming Potential (GWP) of each of the emissions.

[2] Beginning in MY 2021, air conditioning refrigerant leakage, nitrous oxide, and methane emissions may be regulated independently by EPA. The GWP equivalent of each of the emissions would no longer be included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

8	Existing standards through MY 2021, then 2%/year increases for passenger cars and 3%/year increases for light trucks, for MYs 2022-2026	No change	No, beginning in MY 2022

Also, EPA seeks public comments on whether to proceed with this proposal to discontinue accounting for A/C leakage, methane emissions, and nitrous oxide emissions as part of the CO_2 emissions standards to provide for better harmony with the CAFE program or whether to continue to consider these factors toward compliance and retain that as a feature that differs between the programs. EPA seeks comment on whether to change existing methane and nitrous oxide standards that were finalized in the 2012 rule. Specifically, EPA seeks information from the public on whether the existing standards are appropriate, or whether they should be revised to be less stringent or more stringent based on any updated data.

The agencies are providing a short narrative of the alternatives below.

No-Action Alternative

The No-Action Alternative applies the augural CAFE and final GHG targets announced in 2012 for MYs 2021-2025. For MY 2026, this alternative applies the same targets as for MY 2025. Carbon dioxide equivalent of air conditioning refrigerant leakage, nitrous oxide, and methane emissions are included for compliance with the EPA standards for all model years under the baseline/no-action alternative.

Alternative 1 (Proposed)

Alternative 1 holds the stringency of targets constant and MY 2020 levels through MY 2026. Beginning in MY 2021, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 2

Alternative 2 increases the stringency of targets annually during MYs 2021-2026 (on a gallon per mile basis, starting from MY 2020) by 0.5% for passenger cars and 0.5% for light trucks. Beginning in MY 2021, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 3

Alternative 3 phases out A/C and off-cycle adjustments and increases the stringency of targets annually during MYs 2021-2026 (on a gallon per mile basis, starting from MY 2020) by 0.5% for passenger cars and 0.5% for light trucks. Beginning in MY 2021, air conditioning

refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 4

Alternative 4 increases the stringency of targets annually during MYs 2021-2026 (on a gallon per mile basis, starting from MY 2020) by 1.0% for passenger cars and 2.0% for light trucks. Beginning in MY 2021, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 5

Alternative 5 increases the stringency of targets annually during MYs 2022-2026 (on a gallon per mile basis, starting from MY 2021) by 1.0% for passenger cars and 2.0% for light trucks. Beginning in MY 2022, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 6

Alternative 6 increases the stringency of targets annually during MYs 2021-2026 (on a gallon per mile basis, starting from MY 2020) by 2.0% for passenger cars and 3.0% for light trucks. Beginning in MY 2021, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 7

Alternative 7 phases out A/C and off-cycle adjustments and increases the stringency of targets annually during MYs 2021-2026 (on a gallon per mile basis, starting from MY 2020) by 1.0% for passenger cars and 2.0% for light trucks. Beginning in MY 2021, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.

Alternative 8

Alternative 8 increases the stringency of targets annually during MYs 2022-2026 (on a gallon per mile basis, starting from MY 2021) by 2.0% for passenger cars and 3.0% for light trucks. Beginning in MY 2022, air conditioning refrigerant leakage, nitrous oxide, and methane emissions are no longer included with the tailpipe CO_2 for compliance with tailpipe CO_2 standards.