

The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light-Trucks

Presentation for the Clean Air Act Advisory Committee

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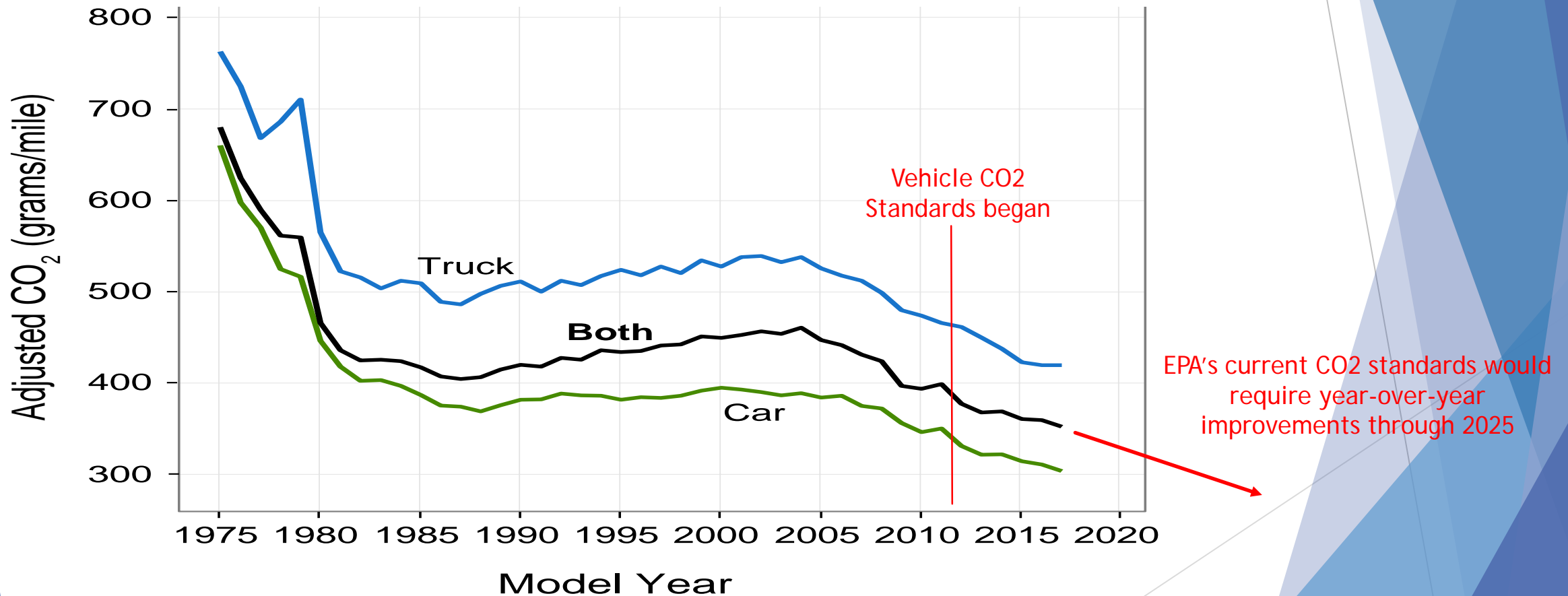
Office of Transportation and Air Quality

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Outline

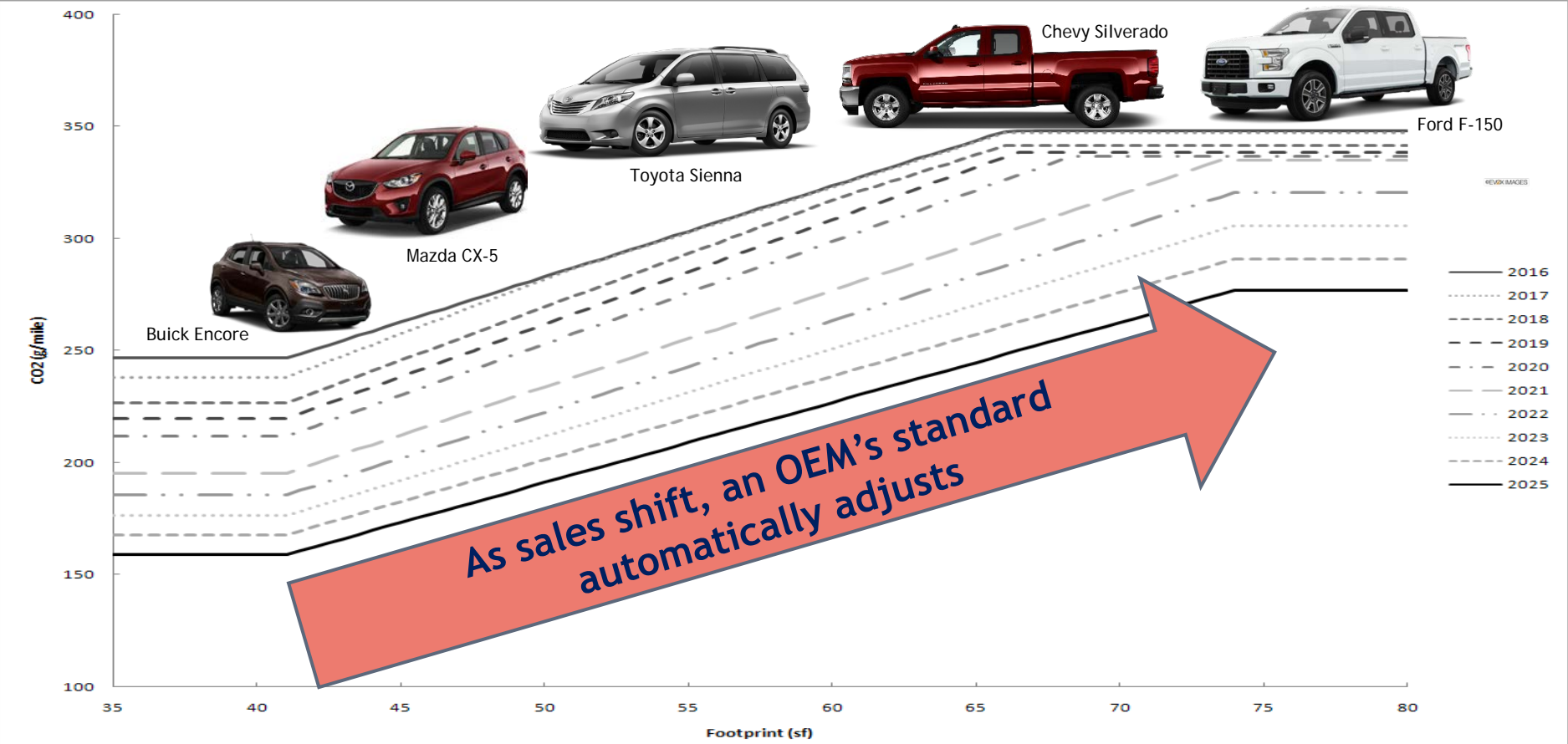
- ▶ Background
 - ▶ Light-duty vehicle greenhouse gas (GHG) standards currently in place
 - ▶ Midterm Evaluation process leading to SAFE NPRM
- ▶ Highlights of EPA's proposal
- ▶ Public hearings and comment period
- ▶ Questions/Discussion

Light-duty Vehicle CO₂ Emission Rates



Standards based on Vehicle Size (“Footprint”)

CO₂ Footprint Target Curves for Trucks
(Separate footprint curve for Cars)



As sales shift, an OEM's standard automatically adjusts

As sales shift from cars to SUVs/trucks, an OEM's standard becomes less stringent

2025 Projection: ~50 mpg compliance = ~36 mpg real-world

Midterm Evaluation Process

- ▶ In the 2012 rule finalizing standards for the model year (MY) 2017-2025 standards, EPA committed to conduct a Midterm Evaluation to determine whether the standards for MY 2022-2025 remained appropriate
- ▶ **January 2017:** Former EPA Administrator McCarthy made a determination that the 2022-2025 standards remained appropriate
 - ▶ Following public comment on a July 2016 Draft Technical Assessment Report issued by EPA/NHTSA/California Air Resources Board and a November 2016 EPA Proposed Determination.
- ▶ **March 2017:** EPA announced the Agency would reconsider the Final Determination
- ▶ **August-September 2017:** EPA held a public comment period/hearing to gather updated data and information to inform the Reconsideration
- ▶ **April 2018:** Former EPA Administrator Pruitt determined that the MY2022-2025 standards are not appropriate, and announced that EPA and NHTSA would work in partnership to initiate a notice and comment rulemaking to set appropriate standards

Highlights of Light-duty Vehicle GHG/CAFE SAFE Proposal

- ▶ EPA and NHTSA jointly released the Safer Affordable Fuel-Efficient (SAFE) proposal on August 2, 2018.
 - ▶ Published in the Federal Register on August 24, 2018
- ▶ The proposed alternative would reduce the stringency of the CO2 vehicle standards for MY2021-2026 to the level of the MY2020 standards.
 - ▶ Beginning in MY 2021, EPA proposes to eliminate the option for manufacturers to apply credits for air conditioning refrigerant leakage toward tailpipe CO2 compliance.
 - ▶ Similarly, EPA proposes to eliminate manufacturers' flexibility options to either use CO2-equivalent credits to meet methane and nitrous oxide emissions standards, or to fold in methane and nitrous oxide emissions (on a CO2-equivalent basis) into their CO2 fleet average
- ▶ The agencies are taking comment on a wide range of alternative stringencies (next slide)
- ▶ EPA is also proposing to withdraw the Clean Air Act waiver for California's GHG and zero emissions vehicle (ZEV) program, which was approved in January 2013, for MY2021-2025 vehicles.

Regulatory Alternatives for Public Comment

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

Existing EPA CO₂ standards average ~4.7%/year stringency increase from MY2020-2025

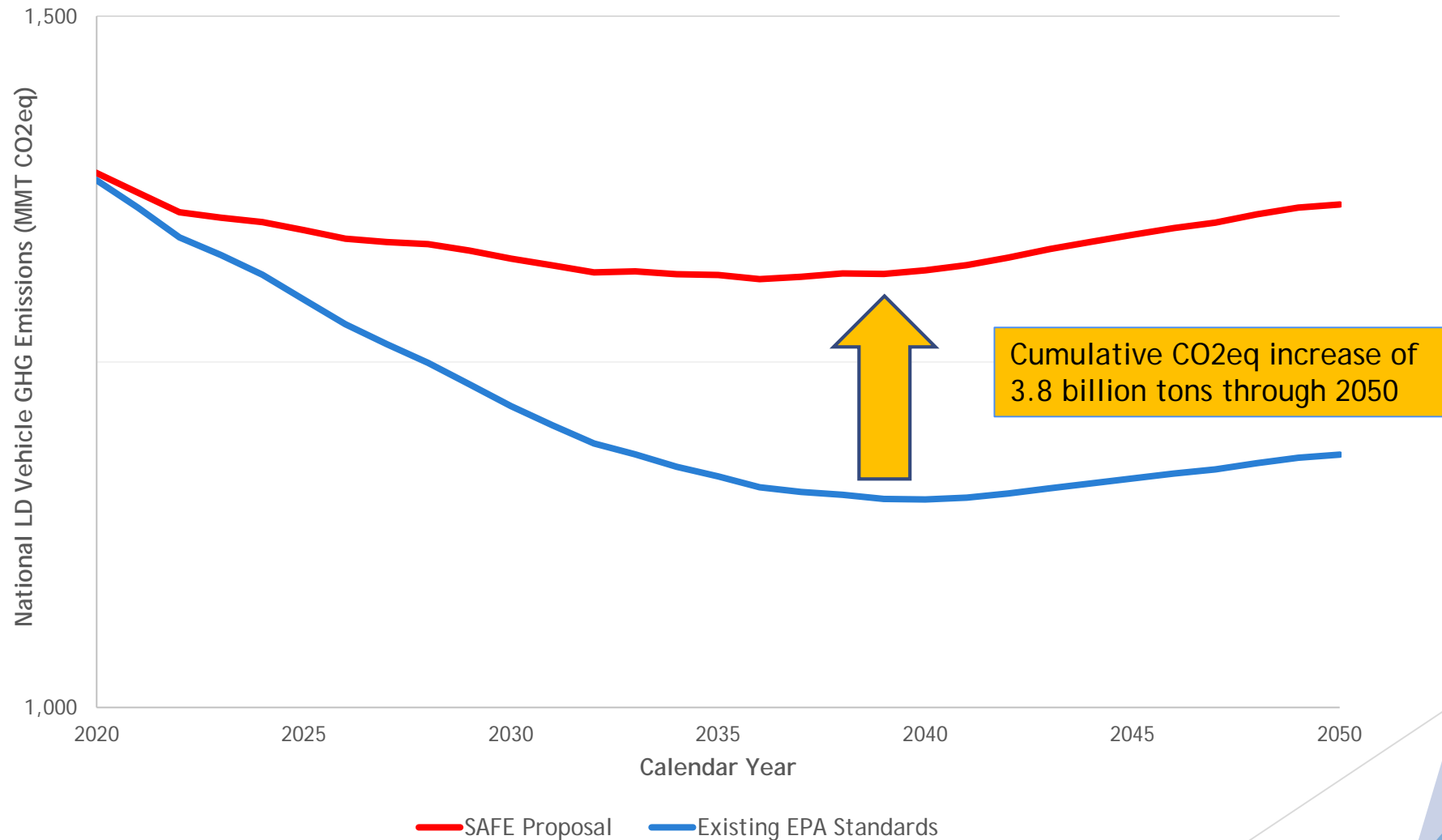
Major Projected Impacts of SAFE Proposal for GHG Program

	Projected Impact
Reduction in Vehicle Cost (MY2029)	\$2,300/vehicle
Increase in Fuel Costs (MY2029, 3% DR)	\$1,850/vehicle
Reduction in Crash Fatalities (lifetime of MY2029)	1,000
Increased Vehicle Sales (MY2029)	170,000
Reduction in Regulatory Costs (MY2029)	\$50 billion
Reduction in Automotive Employment (MY2029)	64,000
Increase in US petroleum consumption (CY2029)	1/2 million bpd
Increase in CO2 emissions (CY2029)	83 MMT

MY Lifetimes through MY2029	
Total Costs	-\$830 billion
Total Benefits	-\$540 billion
Net Benefits	\$290 billion

Light-duty Vehicle GHG Emission Inventories

Annual U.S. Light-Duty Vehicle GHG Emissions (MMT CO₂eq)



Note - includes upstream GHG emissions from petroleum extraction, refining, transportation

Request for Comment on Enhanced Flexibilities Alternative

- ▶ EPA is seeking comment on a variety of “enhanced flexibilities” to broaden the pathways available to manufacturers in meeting a given level of stringency of the standards
 - ▶ Advanced technology incentives
 - ▶ Hybrid incentives
 - ▶ Off-cycle emissions credits
 - ▶ Connected/autonomous vehicle incentives
 - ▶ Emission credit life extension
 - ▶ Natural gas vehicle incentives
 - ▶ High octane gasoline fuel blends

Enhanced Flexibility Scenarios Illustrated in NPRM

**Effect of Different Example Flexibilities in Reducing Program Stringency
Compared to the Current EPA Standards (which average 4.7% per year stringency increase from MY2020-2025)**

Example Enhanced Flexibility Scenarios	Average Year-over-Year Reduction in CO2 for MYs 2020-2025
No Action Alternative (the existing EPA standards)	4.7% per year
Example Enhanced Flexibility A: EPA extends the 0 g/mi factor and a multiplier of 2x for BEVs, and BEV sales achieve a level of 3% of new vehicle sales.	4.0% per year
Example Enhanced Flexibility B: EPA extends the 0 g/mi factor and a multiplier of 4.5x for BEVs, and BEV sales achieve a level of 3% of new vehicle sales.	2.8% per year
Example Enhanced Flexibility C: EPA extends the 0 g/mi factor and a multiplier of 4.5x for BEVs, and BEV sales achieve a level of 6% of new vehicle sales, mild hybrid light-trucks receive a 10g/mi credit and achieve 20% new sales, strong hybrid light-trucks receive a 20g/mi credit and achieve a 10% new sales level.	0.8% per year
Alternative 1 (EPA proposal)	0 % per year

Public hearings and comment period

- ▶ EPA and NHTSA held 3 public hearings
 - ▶ September 24: Fresno, CA
 - ▶ September 25: Dearborn, MI
 - ▶ September 26: Pittsburgh, PA
- ▶ The public comment period has been extended by 3 days, and closes on October 26, 2018
- ▶ EPA looks forward to assessing the public comments

For more information on the SAFE proposal:

<https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-proposed>

Questions?