



Corporate Average Fuel Economy Standards & Greenhouse Gas Standards for Passenger Cars and Light Duty Trucks

Recent Actions

March 31, 2020 EPA and NHTSA release Part II of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule. [In the final rule](#), the agencies require an increase in fuel economy of 1.5% annually, down from 5% each year.

Feb. 27, 2020 The EPA Science Advisory Board releases its [Final Report](#) on the Scientific and Technical Basis of the EPA's Proposed Rule titled The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks.

Sept. 19, 2019 The Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) [release](#) Part I of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule: the “One National Program Rule.” In the [final rule](#), NHTSA preempts California's GHG standards and all state Zero Emission Vehicle (ZEV) programs under the Energy Policy and Conservation Act (EPCA). EPA withdraws California's waiver due to NHTSA's preemption determination and because EPA has determined California does not have the conditions necessary to retain a waiver. The final rule is [published](#) in the Federal Register on **Sept. 27, 2019** and effective **Nov. 26, 2019**.

Additional Resources

[EELP Clean Car Rules Page](#)

[Regulatory Rollback Tracker Page](#)

Magnitude of Transportation Emissions

The transportation sector is the largest source of U.S. greenhouse gas (GHG) emissions. Transportation accounted for 36.7% of U.S. CO₂ emissions from fossil fuel combustion in 2017.¹

¹ U.S. Environmental Protection Agency, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS 1990-2017, ES-6, ES-12, 2019 <https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf>.



The largest sources of transportation CO₂ emissions in 2017 were passenger cars (41.4%), medium and heavy duty trucks (23.7%), and light-duty trucks, which include sport utility vehicles, pickup trucks, and minivans (16.8%).²

EPA's most recent and comprehensive data is from 2017, but other sources like the Rhodium Group have released [preliminary estimates for 2019](#). The Rhodium Group found that transportation sector emissions have remained relatively flat, declining only 0.3% in 2019. They found that "Improvements in vehicle...efficiency have been successful in slowing the pace of emissions growth in transportation...(and perhaps even halting it in transportation), but it will require much more than efficiency to achieve meaningful absolute declines."³

Legal Background for the Standards

New cars and light trucks operate under two simultaneous sets of nationwide performance standards. One set limits greenhouse gas (GHG) emissions and the other regulates fuel economy. Although the GHG emissions limits and the fuel economy rules have been promulgated together, first in 2010 and again in 2012, they are distinct in terms of the agencies that create the standards, their purposes, and the statutes that authorize their creation.

Corporate Average Fuel Economy (CAFE) standards, first issued in 1975, by NHTSA, a part of the Department of Transportation, regulate the fuel economy of vehicles "to provide for improved energy efficiency of motor vehicles...."⁴ CAFE standards are expressed in miles per gallon and establish an average fuel economy standard to be achieved over a fleet of vehicles produced in a given model year by auto manufacturers. NHTSA is authorized to create these standards by the Energy Policy and Conservation Act (EPCA).

GHG emissions standards were first set by EPA in 2010 in order to protect public health and the environment from the effects of GHG pollution. These standards, expressed in grams per mile of a given pollutant, limit the amount of GHG that can be emitted by cars and light trucks. EPA is authorized to create these emissions standards by the Clean Air Act, and to do so on a nationwide basis.

Section 209 of the Clean Air Act (CAA) preempts states' authority to set their own standards for automotive emissions. CAA section 209(b)(1), however, requires the EPA to waive preemption if California seeks authority to enforce its own state-adopted emissions standards. Section

² Id. The remainder of transportation emissions break down as follows: commercial aircraft (7.1%); other aircraft (2.5%); rail (2.3%); pipelines (2.3%); and ships and boats (2.2%).

³ Id.

⁴ Energy Policy and Conservation Act, Pub. L. No. 94-163, § 2(5) (1975) (codified at 42 U.S.C. § 6201).



209(b)(1) states that EPA "...shall, after notice and opportunity for public hearing, waive application of this section to any State which has adopted standards...for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966, if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards."⁵

To deny a waiver under section 209, EPA must make one of three findings: (1) the state's determination that each standard would be as protective as the Federal standard is arbitrary and capricious, (2) the standards are unnecessary to meet compelling and extraordinary conditions in the state, or (3) the standards and enforcement procedures are inconsistent with section 202(a) of the Clean Air Act.⁶

EPCA does not include a waiver provision similar to section 209 of the CAA. Instead, section 509(a) of EPCA states: "Whenever an average fuel economy standard established under this part is in effect, no State or political subdivision of a State shall have authority to adopt or enforce any law or regulation relating to fuel economy standards or average fuel economy standards applicable to automobiles covered by such Federal standard."

Section 177 of the CAA allows states to "piggyback" on California's waiver by allowing them to adopt California's vehicle emission standards for new vehicles sold in their states. Specifically, section 177 allows "any State" that has submitted a state implementation plan for criteria pollutants under the CAA to adopt and enforce California's standards, so long as two conditions are met: 1) the standards "are identical to the California standards for which a waiver has been granted" and 2) they are adopted "at least two years before the commencement of such model year."⁷ Fourteen states and the District of Columbia [have adopted California's standards](#), amounting to nearly 40% of the market for new motor vehicles.

SAFE Vehicles Rule Part One: One National Program

- NHTSA preempts California's GHG standards, declaring them void.
 - NHTSA reasons that "...a State or local requirement limiting tailpipe carbon dioxide emissions from automobiles has the direct and substantial effect of regulating fuel consumption and, thus, is 'related to' fuel economy standards."⁸

⁵ 42 U.S.C. §7543(b)(1) (2018) (emphasis supplied).

⁶ 42 U.S.C. §7543(b)(1) (2018).

⁷ 42 U.S.C. §7507 (2018).

⁸ The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, 84 Fed. Reg. 51,310, 51,313 (Sept. 27, 2019).



NHTSA additionally finds that state regulation "...of all tailpipe greenhouse gas emissions from automobiles or prohibiting all tailpipe emissions is also 'related to' fuel economy standards and preempted by EPCA."⁹

- NHTSA and EPA jointly confirm that "...a Clean Air Act waiver does not waive EPCA preemption...a State or local law or regulation related to automobile fuel economy standards is void ab initio under the preemptive force of EPCA."¹⁰
- NHTSA preempts all state Zero Emission Vehicle (ZEV) programs.
 - NHTSA explains that ZEV laws "...directly and substantially affect fuel economy standards by requiring manufacturers to eliminate fossil fuel use in a portion of their fleet... [and] require the application of additional efforts and resources beyond those needed to comply with Federal standards."¹¹
- NHTSA adopts regulations that specify when EPCA preempts state or local standards, establishing express preemption under EPCA's preemption provision¹² and implied preemption under EPCA as a whole.¹³
- EPA withdraws California's waiver due to NHTSA's preemption determination.¹⁴
- EPA determines California does not need its GHG and ZEV standards to meet "extraordinary and compelling conditions," as it now interprets CAA section 209(b)(1)(B).¹⁵
 - "EPA concludes that CAA section 209(b) was intended to allow California to promulgate State standards applicable to emissions from new motor vehicles to address pollution problems that are local or regional, and that have a particular nexus to emissions from vehicles in California. EPA does not believe CAA section 209(b)(1)(B) was intended to allow California to promulgate State standards for

⁹ Id. NHTSA notes that some GHG emissions from vehicles are not related to fuel economy and could still be regulated by states, like vehicular refrigerant leakage.

¹⁰ Id. at 51,314.

¹¹ Id. NHTSA also asserts that ZEV requirements conflict with the goals of EPCA because they apply without addressing to EPCA's statutory factors to be considered when setting fuel economy standards.

¹² Id. at 51,328 ("...[A]ppendix B, section (a)(3) reads: 'A law or regulation of a State or political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is a law or regulation related to fuel economy standards and expressly preempted under 49 U.S.C. 32919.').

¹³ Id. ("Appendix B, section (b)(3) reads: 'A law or regulation of a State or political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is impliedly preempted under 49 U.S.C. Chapter 329.'").

¹⁴ Id. at 51,338 ("NHTSA's determination renders EPA's prior grant of a waiver for those aspects of California's regulations that EPCA preempts invalid, null, and void, and, to the extent that administrative action is necessary on EPA's part to reflect that state of affairs, EPA hereby withdraws that prior grant of a waiver on this basis.").

¹⁵ Id. at 51,333-51,334.



emissions from new motor vehicles designed to address global climate change problems.”¹⁶

- EPA revokes the 2013 waiver for California’s GHG standards and ZEV program after its determination that California does not meet the requirement in section 209(b)(1)(B).¹⁷
- EPA eliminates other states’ authority under § 177 of the CAA to adopt California’s GHG emission standards (states are still free to adopt California’s standards for criteria pollutants).
 - EPA argues that the title of § 177, “New motor vehicle emission standards in nonattainment areas”, its location within the broader statute, and the fact that it is limited to states that have state implementation plans for achieving attainment for traditional, criteria pollutants under the CAA all suggest that Congress intended § 177 to be available only as a tool for to help states come into “attainment” (compliance with air quality standards for criteria pollutants).
 - EPA places significant weight on the fact that § 177 is in Part D, rather than in Title II, where California’s waiver provision is located.¹⁸

Relevant Data for Comparison

[The standards adopted in 2012](#) would have reduced greenhouse gas emissions from cars and light trucks by 6 billion metric tons, cutting them half by 2025.

The prior standards would have saved American families more than \$1.7 trillion dollars in fuel costs, an average fuel savings of more than \$8,000 by 2025 over the lifetime of the vehicle.

Additionally, the prior standards would have dramatically reduced reliance on oil, saving 12 billion barrels of oil and reducing oil consumption by more than 2 million barrels a day by 2025.

[The revised standards](#) will only require an increase in fuel economy of 1.5% annually, down from 5% each year.

"[T]hese final standards are estimated to result in 1.9 to 2.0 additional billion barrels of fuel consumed and from 867 to 923 additional million metric tons of CO₂ as compared to current estimates of what the standards set forth in 2012 would require..."¹⁹

¹⁶ Id. at 51,350.

¹⁷ Id.

¹⁸ Id. at 51,350-51,351.

¹⁹ The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, pre-publication 8 (March 31, 2020).



Relative to the prior standards, the revised standards will result in consumption of an additional 0.5 million barrels of oil per day.²⁰

New car prices will drop by \$977 to \$1,083 relative to the previous rules, but consumers will spend more on gasoline over the life of the vehicle- an additional \$1,110 to \$1,461, depending on the discount rate used.²¹ Even the lowest estimate for increased fuel costs outweighs the best case scenario for lower upfront vehicle cost.

The agencies estimate that the revised standards would prevent around 233 premature deaths from car accidents,²² but also estimate that 444 to 1,000 premature deaths will occur from the increased total air pollution (both upstream pollutant and tail pipe emissions).²³

The final Obama-era CAFE and GHG standards for 2017-2025:

Table I-1 Estimated Average Required Fleet-Wide Fuel Economy (mpg) under Footprint-Based CAFE Standards

	MY Baseline	2017	2018	2019	2020	2021	2022	2023	2024	2025
Passenger cars	2008	40.1 –	41.6 –	43.1 –	44.8 –	46.8 –	49.0 –	51.2 –	53.6 –	56.2 –
	2010	39.6	41.1	42.5	44.2	46.1	48.2	50.5	52.9	55.3
Light trucks	2008	29.4 –	30.0 –	30.6 –	31.2 –	33.3 –	34.9 –	36.6 –	38.5 –	40.3 –
	2010	29.1	29.6	30.0	30.6	32.6	34.2	35.8	37.5	39.3
Combined	2008	35.4 –	36.5 –	37.7 –	38.9 –	41.0 –	43.0 –	45.1 –	47.4 –	49.7 –
	2010	35.1	36.1	37.1	38.3	40.3	42.3	44.3	46.5	48.7

²⁰ Id. at 25.

²¹ Id. at 1412-19. Total fuel savings: -1423, Table VII-80 – Impacts to the Average Consumer of a MY 2030 Vehicle under CAFE Program for Final Standards, 3% Discount Rate. Total fuel savings: -1110, Table VII-81 – Impacts to the Average Consumer of a MY 2030 Vehicle under CAFE Program for Final Standards, 7% Discount Rate. Total fuel savings: -1461, Table VII-84 – Impacts to the Average Consumer of a MY 2030 Vehicle under CO2 Program for Final Standards, 3% Discount Rate. Total fuel savings: -1143, Table VII-85 – Impacts to the Average Consumer of a MY 2030 Vehicle under CO2 Program for Final Standards, 7% Discount Rate.

²² Id. at Tables VI-220, VI-221, VI-238, and VI-239. Comparison of Lifetime Vehicle-Mass-Related Fatality Impacts by Model Year for CAFE and CO2 Programs under Preferred Alternative, Relative to Augural Standards, Fatalities Undiscounted. I arrived at 233 by adding only the fatality impacts for 2021-2026 and averaging between the two sets of tables as one yielded a total of 218 and the other 247.

²³ Id. at Table VII-142 – Cumulative Changes in Adverse Health Impacts Associated with Total Pollutant Emissions for MY's 1975-2029 for Final CO2 Standards.



TABLE III-11—ESTIMATED FLEET-WIDE CO₂-EQUIVALENT LEVELS CORRESPONDING TO THE STANDARDS

Model year	Cars CO ₂ (g/mile)	Trucks CO ₂ (g/mile)	Fleet CO ₂ (g/mile)
2017	212	295	243
2018	202	285	232
2019	191	277	222
2020	182	269	213
2021	172	249	199
2022	164	237	190
2023	157	225	180
2024	150	214	171
2025 and later	143	203	163

The Trump administration's proposed CAFE and GHG standards for passenger cars (Table I-1), light trucks (Table I-2), and combined average for passenger cars and light trucks (Table I-3):

Table I-1 - Average of OEMs' CAFE and CO₂ Estimated Requirements for Passenger Cars

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	39.1	220
2018	40.5	210
2019	42.0	201
2020	43.7	191
2021	43.7	204
2022	43.7	204
2023	43.7	204
2024	43.7	204
2025	43.7	204
2026	43.7	204

Table I-2 - Average of OEMs' CAFE and CO₂ Estimated Requirements for Light Trucks

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	29.5	294
2018	30.1	284
2019	30.6	277
2020	31.3	269
2021	31.3	284
2022	31.3	284
2023	31.3	284
2024	31.3	284
2025	31.3	284
2026	31.3	284



Table I-3 - Average of OEMs' Estimated CAFE and CO₂ Requirements (Passenger Cars and Light Trucks)

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	34.0	254
2018	34.9	244
2019	35.8	236
2020	36.9	227
2021	36.9	241
2022	36.9	241
2023	36.9	241
2024	37.0	241
2025	37.0	240
2026	37.0	240

Final, revised CAFE and GHG standards for 2021-2026:

Table II-3 – Average of OEMs' CAFE and CO₂ Estimated Proposed Requirements (Passenger Cars and Light Trucks)

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	33.8	261
2018	34.8	248
2019	35.7	236
2020	36.8	224
2021	37.3	214
2022	37.9	211
2023	38.5	207
2024	39.1	204
2025	39.8	202
2026	40.4	199

Upcoming and Ongoing Litigation

California and a group of 22 states, New York, Los Angeles, and Washington, D.C. are likely to challenge these final rules given the challenges they have filed to the Part I rule. Relying on the Administrative Procedure Act, challengers will likely argue that the new standards are arbitrary or capricious. The challengers may assert that the agencies improperly ignored evidence in the rulemaking process and relied on incomplete or flawed information to support the new standards. The agencies will likely respond by attempting to show that they considered all of the



evidence before them in the record to reach standards that are technologically and scientifically justified.

Meanwhile, litigation over the Part I: One National Program Rule is ongoing.

California and a coalition of 22 states, New York, Los Angeles, and Washington, D.C. filed a case against NHTSA in the D.C. District Court (Case 1:19-cv-02826-KBJ). California and the other parties [assert that the final rule](#) "...exceeds NHTSA's authority, contravenes Congressional intent, and is arbitrary and capricious, and...NHTSA has failed to conduct the analysis required under the National Environmental Policy Act ("NEPA")."

California and the same coalition of states and cities have also [filed a case against EPA](#) in the D.C. Circuit Court of Appeals challenging EPA's findings and actions in the final rule (Docket No. 19-1239).

On February 11, 2020, the D.C. District Court issued a stay, pausing California's case against NHTSA until the related case against EPA in the D.C. Circuit is resolved.

Timeline of Relevant Actions:

1967 California Governor Ronald Reagan signs legislation creating the California Air Resources Board to regulate air pollution statewide, including by strictly curbing vehicle emissions.

1967 Congress passes the Air Quality Act of 1967, which allowed California to set its own stricter-than federal standards for vehicles.

1970 Congress passes the Clean Air Act, which retained the feature allowing California to adopt its own standards for vehicles.

1975 The Energy Policy and Conservation Act is adopted and the first CAFE standards for passenger cars and light trucks are created for model year 1978.

1977 Congress amends the Clean Air Act, adding section 177 which authorizes other states adopt California's standards subject to certain conditions.

July 8, 2009 EPA [grants California its first waiver for GHG standards for vehicles](#).

May 7, 2010 [NHTSA adopts CAFE standards and EPA adopts GHG emission standards](#) for cars and light trucks for model years 2012-2016.

Oct. 15, 2012 [NHTSA adopts CAFE standards for model years 2017-2021](#) and EPA adopts GHG emission standards for cars and light trucks for model years 2017-2025. The rule also sets augural CAFE standards through 2025 alongside the GHG standards because NHTSA cannot officially adopt fuel economy standards beyond a five-year cycle. This package of rules, known



as the National Program, is crafted by NHTSA and EPA working closely with automakers and California.

Jan. 9, 2013 EPA [grants California its second waiver for GHG standards](#) and its Advanced Clean Cars Program

Aug. 2, 2018 [EPA and NHTSA release](#) new proposed standards for greenhouse gas emissions and fuel economy. The agencies propose maintaining the CAFE and CO2 standards applicable in model year 2020 for model years 2021-2026. The agencies propose withdrawing the permission granted to California to set its own greenhouse gas emissions standards, which a dozen other states also use. The [Federal Register publishes](#) the Trump administration's proposed fuel economy and greenhouse gas emissions standards for cars and light trucks on **Aug. 24, 2018**.

Aug. 2, 2018 EPA and NHTSA [release](#) proposed standards for greenhouse gas emissions and fuel economy. The agencies propose maintaining the CAFE and CO2 standards applicable in model year 2020 for model years 2021-2026. The agencies propose preempting and withdrawing California's waiver to set its own greenhouse gas emissions standards and ending other states' authority to adopt California's GHG standards.

July 25, 2019 California and four automakers (Ford, BMW, VW, and Honda) [announce](#) they have reached an agreement on compromise standards where requirements would increase an average of 3.7% annually starting for the 2022 model year through 2026 with 1% of that rate eligible to be achieved with electric vehicle credits.

Sept. 19, 2019 The Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) [release](#) Part I of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule: the "One National Program Rule."²⁴ In the [final rule](#), NHTSA preempts California's GHG standards and all state Zero Emission Vehicle (ZEV) programs under the Energy Policy and Conservation Act (EPCA). EPA withdraws California's waiver due to NHTSA's preemption determination and because EPA has determined California does not have the conditions necessary to retain a waiver. The final rule is [published](#) in the Federal Register on **Sept. 27, 2019** and effective **Nov. 26, 2019**.

Sep. 20, 2019 California [leads a coalition](#) of 23 states, the District of Columbia, and the cities of Los Angeles and New York in filing a lawsuit against NHTSA for its determination that California's GHG standards and Zero Emission Vehicle program are preempted by Energy Policy & Conservation Act.

²⁴ A play on the name of the Obama-era "National Program" created in 2012.



Sep. 25, 2019 Minnesota and New Mexico [announce](#) that they will adopt California's clean car standards, despite NHTSA and EPA's recent moves to deprive California of its standards and disallow other states from following California's GHG standards.

Sep. 27, 2019 Nine environmental organizations [file a complaint](#) against NHTSA in the U.S. District Court for the District of Columbia challenging NHTSA's determination as beyond its authority, among other claims. On **Oct. 28, 2019**, GM, Toyota, and Fiat Chrysler [announce](#) they will side with the administration in the litigation.

Nov. 15, 2019 California [files a lawsuit](#) against EPA for revocation of California's waiver under the Clean Air Act, leading a coalition of 22 states, two cities, and the District of Columbia. *California v. Wheeler*, No. 19-1239 (D.C. Cir.). Several regional California air districts and environmental groups file similar challenges against EPA in the D.C. Circuit. *South Coast Air Quality Mgmt. v. EPA*, No. 19-01241 and *Union of Concerned Scientists v. EPA*, No. 19-1230 (D.C. Cir.).

Dec. 18, 2019 EPA files a motion to expedite the case and California files a motion to hold the case in abeyance until part two of the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule is finalized and the case against NHTSA in the D.C. District Court is resolved. The court [denies](#) both the request to expedite and the request for abeyance on **Feb. 4, 2020**. The case will proceed normally.

Dec. 31, 2019 EPA's Science Advisory Board [releases a draft report](#) that identifies flaws in the proposed rules' analysis, like how car sales and turnover rates would be affected by various fuel economy and emissions standards. The board said the Obama-era standards "might provide a better outcome for society than the proposed revision...."

Jan. 14, 2020 EPA and NHTSA [send the second part](#) of the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule to the Office of Management and Budget for review. This final rule contains the fuel economy and GHG emissions standards for model years 2021-2026 for passenger cars and light trucks.

Feb. 11, 2020 The D.C. District Court issues a stay, pausing California's case against NHTSA until the related case against EPA in the D.C. Circuit is resolved.

Feb. 27, 2020 EPA's Science Advisory Board [releases its final report](#) on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which discusses "...significant weaknesses in the scientific analysis of the proposed rule" and the Board's recommendations to strengthen the science supporting the rule.



Note on the California Agreement

The [California Agreement](#) is a separate, voluntary agreement between the state and four automakers (Ford, BMW, Volkswagen, & Honda) based on more ambitious standards than those to be finalized by NHTSA and EPA. The same day the revised federal standards were released, [California announced](#) that Volvo would also be entering into an agreement with the state. The automakers involved will voluntarily comply with agreed-upon standards nationwide, which is notable because they account for about 30% of vehicle sales in the U.S. This agreement is not affected by the revised federal standards. For more information, [see our blog on the California Agreement here](#).