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Proposed SAFE Rule Could Improve Net Benefits of CAFE Standards

By: Mark Febrizio | November 12, 2018

The National Highway Traffic Safety Administration ([NHTSA](#)) and the Environmental Protection Agency ([EPA](#)) are now evaluating the more than [600,000 comments](#) they received on their jointly proposed rule setting Corporate Average Fuel Economy (CAFE) and carbon dioxide (CO₂) emissions standards. The proposed *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks* ([SAFE rule](#)) amends the previous [2012 rulemaking](#) that set CAFE and CO₂ standards. Notably, the proposed rule relies on [new information and analyses](#) that indicate the existing standards for Model Year (MY) 2021 and beyond are not [feasible](#).

One of the comments the agencies will be reviewing is a 28-page [public interest comment](#) by Julian Morris—an economist who focuses on environmental laws, policies, and regulations—submitted on behalf of the GW Regulatory Studies Center.¹ Morris’s comment on the proposed rule and its preliminary Regulatory Impact Analysis concludes that it would be net beneficial to society, primarily by saving thousands of lives and avoiding billions of dollars in costs, while achieving nearly the same environmental benefits as the 2012 rulemaking.

Background and Statutory Authority

The Energy Policy Conservation Act (EPCA) of 1975 laid the foundation for CAFE standards, which were [first effective](#) for MY 1978 vehicles. EPCA, as amended by the Energy Independence and Security Act (EISA) of 2007, remains the statutory authority for NHTSA’s regulations. EPA is authorized to establish greenhouse gas (GHG) emission standards under the Clean Air Act (CAA) and related [judicial decisions](#).

The joint notice of proposed rulemaking (NPRM) freezes, through MY 2026, CAFE and CO₂ emissions standards at the level set for MY 2020, even though the original 2012 rulemaking would have continued to escalate the standards through MY 2025. Another change from the

¹ Public comments submitted on behalf of the GW Regulatory Studies Center reflect the views of the author, and do not represent an official position of the GW Regulatory Studies Center or the George Washington University. The Center’s policy on research integrity is available at <https://regulatorystudies.columbian.gwu.edu/policy-research-integrity>.

2012 rule is that the NPRM [proposes](#) to “exclude air conditioning refrigerants and leakage, and nitrous oxide and methane emissions for compliance with CO₂ standards after model year 2020.”

Regulatory Analysis

Citing multiple pieces of research, Morris [suggests](#) that current fuel economy standards implemented in compliance with EPCA and EISA “have likely imposed net costs on society” (*see*, pp. 3–5). Relying on [de novo analysis](#), the agencies seek to align their actions and propose standards that reflect “the best and most up-to-date information available” and [are](#) “technologically feasible and economically practicable.” This commentary will focus on the comment’s arguments related to fuel economy, road safety, and environmental effects.

Fuel Economy

CAFE standards have likely increased fuel efficiency and—along with declining fuel prices—have expanded the demand for larger vehicles. Nevertheless, fuel economy may improve even absent CAFE standards. Based on a [recent study](#), Morris [argues](#) that “if gas prices are higher than expected in the proposed SAFE rule, the fuel economy standards could cease to be binding, thereby reducing the costs they impose on society.”

Morris considers the effects of the standards on consumers, affordability and the total cost of ownership, fuel expenditures, and fuel costs, and discusses NHTSA’s revision to its accounting of two consumer responses to the rule:

- [Rebound effect](#) – drivers respond to the reduced cost of driving by driving more (substituting driving for other modes of transportation and increasing the amount or length of trips)
- [Scrappage effect](#) – vehicle owners keep existing vehicles longer because of the higher price of new ones; the supply of used vehicles declines, leading to an increase in used vehicle prices and reduced scrappage rates; the scrappage rate of fuel-intensive vehicles also falls because manufacturers produce fewer new, fuel-intensive ones

Notably, NHTSA [revised](#) its estimate of the rebound effect from 10% to 20% in the proposed SAFE rule based on its reevaluation of the evidence. The agency increased its estimate of the rebound effect because the 10% value is [inconsistent](#) with more recent research and new analyses [called into question](#) the agencies’ previous understanding of the relationship between rising incomes and the rebound effect.

Morris reports that the SAFE rule’s analysis employs higher estimates of average new vehicle prices relative to the estimates in the previous 2012 rulemaking. According to the NPRM, the discounted lifetime increase in costs of a 2025 vehicle would be [\\$2,700](#) more than an equivalent 2016 vehicle. In justifying the 2012 rule, the agencies estimated cost increases of \$2,300 to \$2,400 per vehicle. They explain that [differences](#) in how technologies in the fleet evolved,

[diminishing marginal returns](#) to fuel economy benefits, and [shifts](#) in consumer preferences have [led](#) to the higher vehicle prices in recent years.

The analysis of fuel expenditures also changed significantly. According to Morris, the original rulemaking [judged](#) that “consumers significantly undervalue the future benefits of more fuel-efficient vehicles”—i.e., higher fuel efficiency would produce benefits for consumers because of reduced fuel expenditures. Citing his [previous research](#) on the topic, Morris argues that consumers do account for the cost savings from more fuel-efficient vehicles when weighing their options. His analysis [critiqued](#) the 2012 rulemaking’s attribution of consumers’ undervaluation of fuel efficiency to the “energy paradox”—the phenomenon that “consumers are slow to adopt more energy-efficient technologies even when those technologies could save them money.” His critique cited three journal articles published since 2013 that provide evidence that consumers are not selectively myopic when considering the benefits of fuel economy.

Finally, Morris [calculates](#) the net effects of proposed changes to the CAFE standards as “a quick gut-check to NHTSA’s more sophisticated analysis.” Using three scenarios, two vehicles, and three parameters (gas costs, a rebound effect estimate, and a discount rate), he [concludes](#) “there would be substantial consumer welfare gains arising from keeping the mandated fuel economy at the level set for 2020 rather than increasing it.” The results of this back-of-the-envelope calculation are [broadly consistent](#) with the agencies’ findings, suggesting that their analysis is “in the right ballpark.”

Road Safety

While NHTSA has recognized the effects of its regulations on safety for a long time and EPA has also integrated safety effects into past analyses, Morris believes that the SAFE rule incorporates an improved analysis of the safety effects of the rule by better accounting for price increases, the scrappage effect, the rebound effect, and the new footprint-based standard.

The agencies calculate that the SAFE rule would reduce road fatalities by increasing the proportion of new vehicles, increasing the average weight of newer cars relative to light trucks, and reducing the total number of vehicle miles traveled. Specifically, the NPRM [anticipates](#) that the rule could “prevent more than 12,700 on-road fatalities,” in large part to a higher rate of fleet turnover. Morris agrees with the direction of these results but not necessarily the precise numerical estimates.

Environmental Effects

Morris explains how the better analysis of scrappage and rebound effects also improves estimates of environmental effects of the rule. Relative to the baseline (the existing rule), the SAFE rule would [produce](#) “small effects on net emissions of [criteria pollutants](#)” and an insignificant effect on CO₂ emissions, resulting in “no discernible effect on climate change.”

Air quality would not be significantly affected, as [smog-forming emissions](#) under the proposed standards would track closely with the baseline standards. While improved fleet turnover would lead consumers to replace older vehicles with newer, cleaner ones, the agencies also predict more fuel consumption and emissions from petroleum refining.

The NPRM finds that the climate change impacts would be minimal as well, when comparing the agencies' preferred alternative with the 2012 rule. NHTSA [conducted](#) an Environmental Impact Statement for the rulemaking, which [concluded](#) that, relative to the standards in the 2012 rule, global average temperatures would increase by 0.003 degrees Celsius and net CO₂ emissions would increase by 0.08% by 2100.

Conclusion

In a detailed public comment, Morris analyzes the SAFE rule—a joint rulemaking from NHTSA and EPA that would amend CAFE and CO₂ emission standards for MY 2021–2026. His [assessment](#) is overall a positive one, especially because “the agencies included more realistic estimates of the rebound effect, developed a sophisticated model of the scrappage effect, and better accounted for various factors affecting vehicle fatality rates.”

These updates to the agencies' analysis suggest that freezing the standards at MY 2020 levels could save consumers a significant amount of money with negligible effects on the environment. Nevertheless, [other analyses](#) of the NPRM have critiqued aspects of the agencies' economic model, particularly the modeling of the rebound and scrappage effects. But, as is intended with the notice-and-comment process, NHTSA and EPA should now sort out the comments on their proposed rule and consider the best way to move toward a final rulemaking.

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READ JULIAN MORRIS' PUBLIC INTEREST COMMENT:
[NHTSA's SAFE Vehicles Rule](#)

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