Before the

National Highway Traffic Safety Administration

Washington, D.C.

In the Matter of:	)	
Proposed Corporate Average	)	
Fuel Economy Standards for	)	Docket No. NHTSA-2021-0053
Model Years 2024- 2026	)	
Passenger Cars and Light Trucks	)	

Comments of

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via electronic filing
December 11, 2021

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I. Introduction

Our names are Nathan Cash and Samuel Retter, and we are second-year students at University of Colorado Law School in Boulder, Colorado. We thank the National Highway Safety Transportation Administration (hereinafter "Agency") for the opportunity to comment on the notice of proposed rulemaking concerning Corporate Average Fuel Economy standards for model years 2024-2026 (hereinafter "CAFE standards") as we have particular interest in this subject matter. We contacted Ms. Rebecca Schade on October 21, 2021, to request an extension of the comment period but have not received a response. Nonetheless, we hope that the Agency will fully consider the merits of this comment.

The purpose of this comment is to urge the Agency to set CAFE standards which are more aggressive than what is currently proposed. The comment begins with a threshold analysis concerning the Agency's compliance with applicable statutes in the rulemaking process. Following is a comprehensive review of the three proposed alternatives, and why alternative 3 should be the least aggressive standard the Agency considers. Finally, evidence currently outside of the administrative record is presented which demonstrates why the Agency must implement an uncompromising standard.

Specifically, we urge the Agency to:

- Implement a final standard at least as stringent as alternative 3
- Consider the California Greenhouse Gas protocol in the final rule
- Consider drafting a supplemental Environmental Impact Statement based on agreements entered into at the Conference of the Parties 26

- Reform the credit banking scheme in accordance with our recommendations
- Factor the accelerating adoption of both electric and hybrid vehicles into the final standard

II. Statutory Analysis

The fate of the proposed CAFE standards depends on the Agency's compliance with both statutes and judicial interpretations of administrative law. First, the Agency must have a statutory grant of authority to regulate fuel economy standards. Additionally, the Agency must have offered sufficient analysis to pass an arbitrary and capricious review. Finally, the Agency must have complied with the requirements of the National Environmental Policy Act (hereinafter "NEPA"). Our interest in ensuring that the Agency complies with the relevant procedural requirements is to ensure that CAFE standards, which are vitally important, do not fall in litigation.

A. The Agency's Statutory Authority to Regulate CAFE Standards

The Agency possesses a statutory grant of authority to regulate CAFE standards under the Energy Policy and Conservation Act of 1975 (hereinafter "EPCA") as amended by the Energy Independence and Security Act of 2007 (hereinafter "EISA").[1] Under the statutory scheme, the Agency has authority delegated by the Secretary of Transportation to set fuel economy standards contingent on several factors. Primarily, each fleet of passenger and non-passenger automobiles must attain the maximum feasible fuel economy standards for model years 2021-2030.[2] In meeting this statutory

[1] 49 USC 32902 (EPCA), 42 USC 1700 (EISA).
[2] 42 USC 1700 (EISA).

charge, four factors must be considered under EPCA. These are (1) technological feasibility; (2) economic practicability; (3) the effect of other standards on fuel economy; and (4) the need of the United States to conserve energy.[3] As long as the requirements of the EPCA are met, the statutory grant of authority to regulate fuel efficiency standards has been upheld by courts in various jurisdictions.[4]

The EPCA in conjunction with the EISA require the Agency to not only set reasonable standards, but to set the most ambitious standards which are still feasible.[5] Later in this comment, each alternative is evaluated against the four criteria established by the EPCA. Prior to that analysis, the EPCA requirements demand a point of emphasis. Even if a proposed alternative is found to meet the four criteria, this does not mean that the alternative meets the grant of statutory authority under the EPCA. In contrast with simply falling within the stated criteria, a proposed alternative must be as ambitious as possible without violating the factors of analysis. Thus, an alternative cannot be implemented if a more ambitious alternative is consistent with the stated criteria. The Agency only has the authority to set fuel efficiency standards so long as the proposed standard is as bold as possible without violating the criteria set by the EPCA.

B. Arbitrary and Capricious Analysis

After an establishment of a statutory grant of authority, the Agency must create an administrative record which satisfies arbitrary and capricious review. This

[3] Id.
[4] *New York v. National Highway Traffic Safety Administration*, No. 1902385 (2d Cir. 2020), *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508F.3d 508 (9th Cir. 2007).
[5] 49 U.S.C. §32902(b)(2)(B).

requirement is established by the Administrative Procedure Act (hereinafter "APA"), section 706(2)(a), which reads that an "Agency action must be upheld unless it is arbitrary, capricious, and abuse of discretion, or otherwise unsupported by law."[6] This requirement has been interpreted by the Supreme Court in *Motor Vehicles Manufacturers Association v. State Farm Mutual Automobile Insurance Company* (hereinafter "*State Farm*") and in *FCC v. Fox Television Stations* (hereinafter "*Fox"*).[7] The Supreme Court noted four applicable factors to use when reviewing agency action in *State Farm*. These are whether the Agency: (1) relied on factors which Congress had not intended it consider; (2) Entirely failed to consider an important aspect of the problem; (3) Offered an explanation for its decision that runs counter to the evidence; and (4) whether the decision is completely implausible.[8] *Fox* is relevant where an agency action contradicts a previous agency decision. As these standards represent a change in course from the standards during the Trump Administration, to pass muster under *Fox,* the Agency must provide a reasoned explanation for why facts and circumstances that underlined the previous policy were disregarded.[9] Because alternative 2, which is proposed by the Agency would not meet APA requirements found in section 706, alternative 3 is preferable. For clarity, we first engage in a *Fox* analysis, before turning to evaluating each alternative under *State Farm*.

1. The Proposed CAFE Standards do not Survive Scrutiny Under Fox

[6] 5 USC 551-559, 706(2)(a).
[7] *Motor Vehicle Manufacturers Association of the United States, Inc. v. State Farm Mutual Automobile Insurance Company*, 463 US 29 (1983), *FCC v. Fox Television Stations*, 556 US (2009).
[8] *State Farm Mutual Automobile Insurance Company*, 463 US 29 (1983).
[9] *Fox Television Stations*, 556 US (2009).

Regardless of which alternative the Agency decides to implement, the rule may not pass scrutiny under *Fox*. The regulation proposed by the Agency is starkly different from the 2020 CAFE standards propagated by the previous administration. The Agency addresses this fact, as the proposal reads, "This proposal is significantly different from the conclusion that NHTSA reached in the 2020 final rule, but this is because important facts have changed, and because NHTSA has reconsidered how to balance the relevant statutory considerations in light of those facts."[10] The Agency continues by writing that, "… significantly more stringent standards are maximum feasible," and that "… [The Agency] recognizes that the need of the United States to conserve energy must include serious consideration of the energy security risks of continuing to consume oil, which more stringent fuel economy standards can reduce."[11] Finally, the Agency writes that "Reducing our Nation's climate impacts can also benefit our national security."[12] Finally, the Agency notes the updates to assumptions which underlie the rule in Table I-2.[13] While the Agency notes the differences between the current proposal and the 2020 proposal, this may not be sufficient to meet judicial muster.

The Agency's failure to provide adequate reasoning for its change of course causes it to fail to meet the standard set in *Fox*. While the Agency offered a sufficient explanation for the change in values which underlies the policy shift from the previous administration, they do not offer a reasoned explanation for disregarding the facts and

[10] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021).
[11] *Id.*
[12] *Id.*
[13] *Id.*

circumstances which were engendered by the 2020 CAFE standards. The previous standards proposal justifies its relatively weak requirements by citing its concern with diminishing returns. Put simply, the agency stated that "as CAFE and CO_2 emissions standards increase in stringency, the benefit of continuing to increase in stringency decreases."[14] The previous administration supported its assumption by offering a hypothetical which states,

> "[A] vehicle owner who drives a light vehicle 15,000 miles per year (a typical assumption for analytical purposes) 31 and trades in a vehicle with fuel economy of 15 mpg for one with fuel economy of 20 mpg, will reduce their annual fuel consumption from 1,000 gallons to 750 gallons—saving 250 gallons annually. If, however, that owner were to trade in a vehicle with fuel economy of 30 mpg for one with fuel economy of 40 mpg, the owner's annual gasoline consumption would drop from 500 gallons/year to 375 gallons/year—only 125 gallons even though the mpg improvement is twice as large. Going from 40 to 50 mpg would save only 75 gallons/year. Yet each additional fuel economy improvement becomes much more expensive as the easiest to achieve low-cost technological improvement options are chosen."[15]

[14] Nat'l Highway Transportation Safety Admin, *Fuel Economy: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA–2018–0067, U.S. Dept. of Transportation (2020).
[15] *Id.*

While the Agency conducts a comprehensive costs and benefits analysis, they do not specifically address why diminishing returns with regard to CAFE standards should not be a concern. Opponents to the proposed rule will likely state that more stringent CAFE standards not economically feasible. Further, they will attempt to find weakness in the costs and benefits analysis offered by the Agency. While these arguments almost certainly have little merit, stating that while diminishing returns to cost are inevitable, the current proposal is financially practical will remove concerns that would arise under *Fox*. With an increasingly conservative judiciary, it is vital to cover all possible avenues by which the proposed standard can be attacked. Because the current change in course by the Agency is drastic and does not fully explain why it disregards the notion of diminishing returns, the proposal could be challenged under *Fox*.

2. An Analysis of the Proposed CAFE Standards Under State Farm

All the alternatives proposed by the Agency comply with several of the *State Farm* criteria. These are that none of the proposed agency actions run counter to available evidence or are implausible. Within the notice of proposed rulemaking, tables I-3—I-9 provide a comprehensive cost and benefits analysis for all of the evaluated alternatives.[16] In addition to forecasting cumulative impacts, differing discount rates are used to predict future costs and benefits of each alternative. Further, we commend the Agency for providing comprehensive scientific support for each alternative. Additionally,

[16] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021).

tables I-10—I-13 provide support for the feasibility of each alternative.[17] Overall, the administrative record provides ample evidence for the plausibility of each alternative.

Unfortunately, the administrative record may not meet one *State Farm* factor, regardless of which alternative is implemented. The Agency failed to consider an important aspect of the problem with regard to CAFE standards. In addition to asking for feedback on the technical basis of the proposal, the Agency asked whether to account for the reinstatement of California's Greenhouse Gas protocol (hereinafter "GHG") standards and Zero Emission Vehicle program (hereinafter "ZEV").[18] According to the EPA, "[t]he Clean Air Act allows California to seek a waiver of the preemption which prohibits states from enacting emission standards for new motor vehicles"[19] Since 2013, California has possessed a waiver of Clean Air Act preemption which allows it to enforce its own GHG standards and ZEV mandate.[20] Under the previous administration, the EPA revoked California's waiver.[21] Within the proposed rule, the Agency accounts for the likely reinstatement of California's ZEV mandate, while neglecting to account for the reinstatement of GHG standards. This opens the proposal to an arbitrary and capricious challenge under *State Farm*.

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[17] *Id.*

[18] Lance Bultena et. al., *NHTSA proposed MY2024-2026 Corporate Average Fuel Economy Standards* (*NHTSA proposes MY2024-2026 Corporate Average Fuel Economy standards | Hogan Lovells - JDSupra).*

[19] EPA, *Vehicle Emissions California Waivers and Authorizations* (https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations).

[20] EPA, *EPA Reconsiders Previous Administration's WIthdrawal of California's Waiver to Enforce Greenhouse Gas Standards for Cars and Light Trucks* (https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations).

[21] Coral Davenport, *Trump to Revoke California's Authority to Set Stricter AUto Emissions Rules* (https://www.nytimes.com/2019/09/17/climate/trump-california-emissions-waiver.html).

The likely reinstatement of California's GHG requirements must be considered by the Agency prior to the issuance of the final rule to comply with requirements posed by *State Farm*. The Agency cites manufacturer overcompliance with ZEV as a reason to factor the regulation into the proposal despite the previous administration's revocation of the program.[22] Conversely, the Agency has failed to account for GHG in its proposal citing both the pending waiver decision and their inability to model a subnational fleet. [23] The Agency should apply the reasoning present for the inclusion of ZEV to consider GHG when drafting the final proposal. According to the EPA Automotive Trends Report released in 2020, manufacturers over-complied with GHG standards despite the previous administration's rescission of the requirements.[24] Because the Agency did not factor GHG standards as its baseline for drafting the proposal despite accounting for ZEV, it has likely not met the *State Farm* requirement to consider all important aspects of the problem.

Both proposed alternatives 1 and 2 violate a key standard under *State Farm*. The Agency did not rely solely on factors which Congress intended for it to consider. Under the EPCA as amended by the EISA, the Agency must implement the maximum viable fuel efficiency standards. The Agency recognizes this statutory charge and writes in the proposed rulemaking, "[The Agency] has reconsidered how to balance the relevant statutory considerations in light of those facts. [The Agency] tentatively concludes that

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[22] Lance Bultena et. al., *NHTSA proposed MY2024-2026 Corporate Average Fuel Economy Standards (NHTSA proposes MY2024-2026 Corporate Average Fuel Economy standards | Hogan Lovells - JDSupra).*

[23] *Id.*

[24] EPA, *The 2021 EPA Automotive Trends Report* (The 2021 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975 (EPA-420-R-21-003, November 2021).

significantly more stringent standards are maximum feasible."[25] Despite acknowledging its charge, neither proposed alternative 1 or 2 set fuel efficiency standards at the maximum feasible level. When accounting for all relevant factors, only alternative 3 may meet this charge. While the feasibility of each alternative is explored in depth later in this comment, it is vital to note that a failure to set fuel efficiency standards at the maximum possible level may render the proposed rule susceptible to an arbitrary and capricious challenge.

It follows that only alternative 3 is well positioned to withstand an arbitrary and capricious challenge. Alternative 3 arguably sets a high enough fuel efficiency standard to meet the Agency's charge under the EPCA and EISA. Thus, with alternative 3, the Agency relies only on factors which Congress intended for consideration. Further, while as previously stated, failing to account for the reimplementation of GHG raises problems under arbitrary and capricious review, alternative 3 sets standards high enough to arguably still be sufficient had GHG been considered while propagating this proposed rule. Further, as with all of the proposed alternatives, alternative 3 does not run counter to the evidence. Finally, as will be discussed further later in this comment, alternative 3 is not implausible. If the Agency wishes to avoid potential arbitrary and capricious challenges, it must set fuel efficiency standards at least at the level prescribed by alternative 3.

C. The Agency's Compliance with NEPA

[25] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021).

Further information needs to be added to the administrative record to ensure that the Agency complies with NEPA requirements. The procedural requirements prescribed by NEPA are detailed in 40 CFR 1508.1.[26] NEPA requires agencies to draft an Environmental Impact Statement (hereinafter "EIS"). This statement must: (1) contain a clear and plausible purpose; (2) present viable alternatives; (3) include a reasonable environmental consequences analysis; and (4) incorporate any necessary supplemental EIS.[27] Looking at the administrative record, the Agency may not have sufficiently complied with the procedural requirements of NEPA while drafting the proposed rule.

Before analyzing whether the Agency's EIS was insufficient under NEPA, it should be noted that they complied with a majority of NEPA requirements. First, the Agency's EIS contains a clear and plausible purpose. This is evident through the language on page S-2 which both reiterates the Agency's statutory charge under the EPCA as amended by the EISA and further states, "…when determining the maximum feasible levels, the agency considers relevant safety and environmental factors."[28] Further, the Agency presents multiple viable alternatives. While the Agency prefers alternative 2, they consider the impacts of the more stringent alternative 3, the less stringent alternative 1, and even taking no action, which is represented by alternative 0. Additionally, the Agency includes a reasonable environmental consequences analysis. The EIS considers energy, air quality, greenhouse gas emissions, climate change, life-cycle assessment implications of vehicle energy, materials, and technologies, as well as

[26] 40 CFR 1508.1 (NEPA).
[27] *Id.*
[28] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021).

other miscellaneous impacts.[29] While the Agency meets most of NEPA's procedural requirements, they may have failed to comply with one requirement.

We suggest that the Agency draft a supplemental EIS based on the recent international agreements the United States entered at the Conference of the Parties 26 (hereinafter "COP26"). Under NEPA, an agency must draft a supplemental EIS when there are significant new circumstances or information relevant to the environmental concerns that have bearing on the proposed action or its impacts.[30] The agreements entered into at COP26 possibly trigger this requirement. Specifically, the Glasgow Climate Pact, which was reached at the conference, contains several provisions which the Agency should consider accounting for in a supplemental EIS.[31] First, the United States agreed with other countries to meet in 2022 to pledge further cuts to carbon dioxide emissions.[32] Additionally, the agreement includes a scheme to cut 30% of methane emissions by 2030.[33] Further, the United States and China entered a bilateral agreement in which they pledge to cooperate to reduce methane emissions and to switch to clean energy.[34] According to the EPA, transportation is the largest source of carbon dioxide emissions in the United States.[35] Additionally, gas production is the largest contributing sector to methane emissions.[36] It is important to note that these

[29] *Id.*
[30] EPA, *National Environmental Policy Act Review Process* (https://www.epa.gov/nepa/national-environmental-policy-act-review-process).
[31] BBC, *COP26: What was agreed at the Glasgow climate conference?* (COP26: What was agreed at the Glasgow climate conference? - BBC News).
[32] *Id.*
[33] *Id.*
[34] *Id.*
[35] EPA, *Sources of Greenhouse Gas Emissions* (Sources of Greenhouse Gas Emissions | US EPA).
[36] EIA, *Emissions of Greenhouse Gases in the U.S.* (EIA - Greenhouse Gas Emissions - Methane Emissions).

statistics account for natural gas production, which is likely irrelevant with regard to the proposed standard. Further, the extent to which domestic oil production contributes to methane has not been studied in depth. Regardless, drafting a supplemental EIS would ensure that the proposed rule meets our newly entered commitments at COP26.

III. The Agency's Proposed Alternatives are not Ambitious Enough to Meet Fuel Economy Standards Pursuant to the EPCA and EISA

In light of the four EPCA factors, the agency has not offered a convincing case for its proposal. All three alternatives are technologically feasible and implementing them would be economically practicable. However, considering the overwhelming need for the United States to conserve energy, as well as the Agency's duty to implement the maximum feasible standards pursuant to the Statute, neither of the Agency's proposed alternatives are entirely sufficient. Alternatives 1 and 2 do not adequately push for more ambitious technologically feasible possibilities, nor do they yield adequate social, economic, and environmental benefits. Moreover, the Agency's consideration of only 3 alternatives itself is insufficient. While Alternative 3 is the most stringent alternative proposed by the Agency, the Agency failed to consider the feasibility of other reasonable, more stringent alternatives and their implications on technological feasibility, economic practicability, as well as possible social and environmental benefits. Finally, the Agency failed to adequately consider the role of alternative fuel vehicles (AFVs) in promulgating more stringent standards.

A. Alternative 1 is Insufficient to Meet the Agency's Statutory Requirements

Alternative 1 would require a fleet-wide increase in fuel economy by 10.5% for MY 2024 over MY 2023 and a 3.26% average annual fleet-wide increase in fuel economy for both passenger cars and light trucks for MYs 2025–2026. The Agency assumes for purposes of its analysis that the MY 2026 CAFE standards for each alternative would continue indefinitely.[37] By comparison, the Office of Energy Efficiency and Renewable Energy reported that average light-duty (both passenger cars and light trucks) fuel economy increased from roughly 13mpg in 1975 to about 22mpg by 1987 - a 68% increase.[38] The average increase in fuel economy per year during that 12-year period was approximately 5.7% - nearly double that proposed by Alternative 1 for MY 2026 over MY 2025. Under the Agency's analysis, with a 10.5% increase for MY 2024 over MY 2023 and an assumed 3.26% average annual increase thereafter, fleet-wide fuel economy would increase by roughly 46% between 2024 and 2036 - nearly 22% less than the increase achieved between 1975 and 1987. A proposed standard that would yield a significantly smaller increase in fuel economy after 12 years than that 46 years ago is grossly inadequate considering technologies generative of greater fuel economy, such as AFVs and high compression ratio engines, have largely existed for over two decades. Indeed, average fuel economy in the same fleet category rose only 29% between 2005 and 2020.[39] This means that light-duty fuel economy increased by 39% more in a 12-year period 46 years ago than within the last 15 years. The Agency

[37] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021) at S-3

[38] Vehicle Technologies Office, *Preliminary Data Show Average Fuel Economy of New Light-Duty Vehicles Reached a Record High of 25.7 Mpg in 2020*, Office of Energy Efficiency and Renewable Energy (Mar. 15, 2021) https://www.energy.gov/eere/vehicles/articles/fotw-1177-march-15-2021-preliminary-data-show-average-fuel-economy-new-light.

[39] *Id.*

has lacked adequate ambition in the past decade to induce automakers to match or exceed required fuel economy standards, and Alternative 1 is no exception.

1. Alternative 1 is not Conducive to Feasibly Ambitious Technological Innovation

The first EPCA factor requires the Agency to consider technological feasibility in its proposed fuel economy standards. Alternative 1, while technologically feasible, will not induce manufacturers to substantially increase and compete for technological innovation, and consequently will not push the industry to a trajectory consistent with what is needed to address climate change.[40] Given that average fuel economy would increase at a slower rate within the next 12 years than during 1975-1987 under Alternative 1, the status quo would effectively remain unchanged.

Automakers are moving with increasing pace towards electrification, various hybrid formats, and improved internal combustion engines. As of 2017, there were 21 million flex-fuel vehicles in the United States alone (internal combustion vehicles that are compatible with a blend of gasoline and up to 83% ethanol, a renewable fuel).[41] Additionally, over 6.4 million EVs are expected to sell globally by the end of this year, with 297,000 new units already registered in the United States in 2021 alone - a 166% increase over 112,000 units bought in 2020.[42] Clearly there is significant and increasing demand for such alternative fuel vehicles both globally and domestically, yet Alternative 1 does not reflect this trend.

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[40] Comment from Union of Concerned Scientists, Docket No. NHTS-2021-0053-1567 at 4
[41] Alternative Fuels Data Center, *Flexible Fuel Vehicles,* U.S. Dept. of Energy, https://afdc.energy.gov/vehicles/flexible_fuel.html.
[42] Virta, *The Global Electric Vehicle Market In 2022* (November 4, 2021) https://www.virta.global/global-electric-vehicle-market

Automakers are producing EVs and hybrid vehicles in increasing numbers. For example, Hyundai, Chevrolet, Nissan, Volvo, and Kia, among others, are continuing to increase their EV lineups for MY 2022, and their prices (with the exception of more luxury brands like Mercedes, Audi, and Volvo) are comparable to their combustion engine counterparts. Stronger CAFE standards will naturally drive even greater EV production and in turn will help ensure that CAFE goals are met. There are also growing trends among non-profit groups to increase fuel economy standards. For example, the Climate Group initiated its EV100 program, in which its members have committed to convert over 5.2 million vehicles to electric and zero-emission and deploy charging at over 7,000 locations by 2030.[43] However, Alternative 1 would do virtually nothing to continue encouraging these kinds of initiatives due to a lack of any meaningful pressure on the industry to meet ambitious targets. Without induced competition among auto industry firms, automakers will continue (or stagnate) EV and other AFV production at their discretion. It is thus imperative that the Agency adopt a much more stringent standard.

B. More Stringent Alternatives will Yield Greater Socioeconomic Benefits

Under Alternative 1, total net economic benefits to society would amount to $81B under a 3% discount (interest) rate and $36.4B under a 7% discount rate, compared to $100B at 3% and $37.1B at 7% under Alternative 2, and $131.7B at 3% and $45.9B at 7% under Alternative 3.[44] Alternative 1 would therefore yield the lowest net societal

[43] Comment from the Climate Group, Docket No. NHTSA-2021-0053-0052
[44] Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks, 86 Fed. Reg. 49602, 49608 (proposed Sept. 3, 2021) (to be codified at 49 C.F.R. pts. 531, 533, 536, and 537)

benefits out of all three alternatives. Moreover, for MY 1978-2029, consumers would gain, on net, roughly $250 per vehicle in benefits, compared to $380 in net benefits under Alternative 2, and $530 in net benefits under Alternative 3.[45] Ultimately, the greater the fuel savings, the more likely consumers will be able to reinvest household income that would have been wasted on gas expenditures into the broader economy.[46] Under Alternative 2, consumers could save roughly 52% more on fuel than they could under Alternative 1, compared to an even greater 112% under Alternative 3.

It must be noted that the Agency's net societal benefit estimates are largely based upon the social cost of carbon. The discount rate, which primarily involves the social cost of carbon, indicates the extent to which society is willing to trade present benefits for future ones. A high discount rate therefore indicates that society values present benefits over future ones, while a low discount rate indicates society's willingness to incur greater costs today to protect future generations.[47] Presently, the Biden Administration has given the interim social cost of carbon a value of $51 per ton of carbon dioxide emissions at a 3% discount rate.[48] Similarly, for purposes of its analysis, the Agency discounts the social cost of carbon at 2.5% when other benefits and costs are discounted at 3%.[49] These estimates, however, are conservative and their methodology is questionable. Neither the Biden Administration nor the Agency adequately account for inherent and unquantifiable uncertainties in predicting the future

[45] Comment from Union of Concerned Scientists at 10
[46] *Id.*
[47] Renee Cho, *Social Cost of Carbon: What Is It, and Why Do We Need to Calculate It?* State of the Planet, Columbia Climate School (Apr. 1, 2021). https://news.climate.columbia.edu/2021/04/01/social-cost-of-carbon/.
[48] *Id.*
[49] 86 Fed. Reg. 49602 at 49605 (Sept. 3, 2021)

social cost of carbon, such as the extent and cost of human conflict resulting from climate change, as well as the effect and cost of societies adapting to climate change.[50] However, most people value uncertainties by paying more to avoid the most extreme costs, regardless of how unlikely they may be. For example, "Americans buy home insurance to prevent financial ruin in [the] event of a catastrophic fire, even if the risk of such a fire is small."[51] Accordingly, people would likely pay more to avoid the most devastating impacts of climate change, especially considering that severe climate change effects are already occurring.[52] Indeed, economist Martin Weitzman demonstrates in his private study that "uncertainty about future discount rates suggests using lower and lower rates for longer and longer time horizons, which is particularly relevant for the very long time horizons considered in the SCC."[53] Other studies suggest a more appropriate discount rate would be roughly 2% or $121 per ton of carbon dioxide emissions - more than double that of the current estimate.[54] As such, the Agency should consider a lower discount rate for the social cost of carbon when factoring more stringent fuel economy standards.

Notwithstanding the Agency's discount rate assumptions, more stringent fuel economy standards would also likely lead to more robust job growth. More stringent standards would naturally induce industry competition, resulting in greater industry investment in research and development, as well as increased production of AFVs and

[50] Cho, *supra* note 42.
[51] Tom Erb, *The Social Cost of Carbon – Going Nowhere but Up*, Center for Climate and Energy Solutions (March 30, 2021), https://www.c2es.org/2021/03/the-social-cost-of-carbon-going-nowhere-but-up/
[52] *Id.*
[53] Brian Prest et al., *Improving Discounting in the Social Cost of Carbon*, Resources for the Future (Oct. 21, 2021) https://www.resources.org/archives/improving-discounting-in-the-social-cost-of-carbon/.
[54] *Id.*

improved combustion engines. This, in turn, would foreseeably require an increase in workforce, and would prompt the industry to hire more employees to accommodate a growing need for specialists, engineers, and other individuals versed in the AFV market. Under Alternative 1, the auto sector could see as many as 31,400 new jobs, compared to 33,600 under Alternative 2, and 67,100 under Alternative 3.[55] As such, the job growth rate would seemingly increase exponentially as fuel economy standards become more stringent. Indeed, under Alternative 3, job growth would increase by nearly 114% more than that under Alternative 1.

Furthermore, a reduction in petroleum usage will directly translate to an increase in consumer fuel savings. Since the price of crude oil (the derivative of petroleum) is mainly dependent upon the level of supply relative to the level of demand, a decrease in petroleum demand will generally result in an increase in supply and, in turn, a decrease in price. Therefore, the more stringent the fuel economy standards, the less demand consumers will have for petroleum products like gas. In turn, the price of gas will ideally decrease, while consumer fuel savings will increase. For MY 1978-2029, Alternative 1 would yield net consumer fuel savings of $45.3B at a 3% discount and $28.4B at a 7% discount, compared to $58.3B at 3% and $35.6B at 7% under Alternative 2, and $104.8B at 3% and $64.8B at 7% under Alternative 3.[56] Alternative 3 would therefore yield over 131% more in net consumer fuel savings than Alternative 1. As such, it is demonstrably clear that more stringent benefits would yield much greater socioeconomic benefits.

[55] Comment from Union of Concerned Scientists at 10
[56] *Id.*

C. More Stringent Alternatives will Yield Greater Environmental and Public Health Benefits

Carbon dioxide (CO_2) is the primary contributing greenhouse gas (GHG) to climate change. CO_2 emissions from passenger cars and light trucks account for 58% of total U.S. CO_2 emissions from transportation.[57] These emissions are significant contributing factors to rising global temperatures, rising sea levels, and more frequent weather extremes.[58]

Pursuant to the Agency's analysis, Alternative 1 would yield a 4,100 million metric tons of CO_2 ($MMTCO_2$) reduction in CO_2 emissions from 2021-2100 compared to a "no action" baseline alternative, while Alternative 2 would yield a 6,400 $MMTCO_2$ reduction, and Alternative 3 would yield an 8,600 $MMTCO_2$ reduction.[59] Consequently, total emissions during this time period would be 85,500 $MMTCO_2$, 83,200 $MMTCO_2$, and 81,000 $MMTCO_2$, respectively. Alternative 3 would therefore yield a 5.2% greater emissions reduction than Alternative 1, and a 2.6% greater reduction than Alternative 2.

The Union of Concerned Scientists produced similar metrics projecting decreases in greenhouse gas emissions across the three alternatives. Under Alternative 1, greenhouse gas emissions would be reduced by 409 $MMTCO_2$ from MY 1978-2029.[60] By comparison, Alternative 2 would yield a 517 $MMTCO_2$ reduction, while Alternative 3 would yield a 967 $MMTCO_2$ reduction. Accordingly, Alternative 2 would yield a 26.4% greater emissions reductions than Alternative 1, while Alternative 3 would yield a staggering 136.4% greater increase in emissions reductions than Alternative 1.

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[57] NHTSA, *Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks* at 5-8
[58] *See Id.* at 5-10
[59] *Id.* at 5-35
[60] Comment from Union of Concerned Scientists at 12.

Alternative 3 would also yield a substantial 87% greater emissions reduction than Alternative 2.

These metrics also have significant implications on public health. More stringent fuel economy standards would have an inverse effect on social costs associated with preventing sickness and disease. In turn, more stringent fuel economy standards would increase social benefits such as prolonging life and promoting physical and mental health. For example, from MY 1978-2029, public health benefits would amount to roughly $18B at 3% social cost of carbon (SCC) under Alternative 1, while Alternative 2 would produce $22.5B at 3%, and Alternative 3 would produce $42.3B at 3%. Alternative 2 would therefore yield 25% more in public health benefits over Alternative 1, while Alternative 3 would yield 88% more in public health benefits over Alternative 2. Ultimately, higher fuel economy standards would result in greater greenhouse gas emissions, which in turn would provide greater public health benefits in the form of consumer savings on preventing sickness and disease.

Furthermore, this will not only benefit communities located in close proximity to urban and metropolitan areas, roads, and refineries, but will also help provide broader benefits to economically disadvantaged and marginalized communities who have historically been disproportionately affected by harmful environmental exposures. Indeed, “underserved communities have been disproportionately affected by harmful environmental exposures, such as ambient air pollution and climate-change related health impacts.”[61] For example, researchers have found that, “due to decades of residential segregation, African Americans tend to live where there is greater exposure

[61] Comment from MWAQC, CEEPC, and TPB, Docket No. NHTSA-2021-0053 at 2.

to air pollution."[62] Additionally, multiple large studies have shown that "low socioeconomic status consistently increased the risk of premature death from fine particle pollution among 13.2 million Medicare recipients studied in the largest examination of particle pollution-related mortality nationwide."[63] Similar studies of Atlanta, Georgia, also found that "particle pollution increased the risk of asthma attacks for zip codes where poverty was high and among people eligible for Medicaid."[64] Therefore, more stringent CAFE standards and subsequent emissions reductions have the potential to help the most vulnerable populations."[65] The Metropolitan Washington Air Quality Committee (MWAQC), the Metropolitan Washington Council of Governments' (COG) Climate, Energy and Environment Policy Committee (CEEPC), and the National Capital Region Transportation Planning Board (TPB) also collectively indicated that observations in metropolitan Washington show that atmospheric temperatures and the Potomac River water level continue and will continue to rise, while "extreme weather events and increases in the number of days with extreme heat or extreme cold will increase risks to health, energy usage patterns, plant and animal habitats, and infrastructure."[66] Consequently, the coalition urges the Agency to adopt more stringent standards to help mitigate the effects of climate change.

IV. The Agency Should Adopt the Most Stringent Feasible Fuel Economy Standards

[62] *Disparities in the Impact of Air Pollution*, American Lung Association (Apr. 20, 2020) https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities.
[63] *Id.*
[64] *Id.*
[65] Comment from MWAQC, CEEPC, and TPB, Docket No. NHTSA-2021-0053 at 2.
[66] *Id.*

From 1985 until 2010, the Agency kept its CAFE standards the same at 27.5mpg for passenger cars and between 20.0-23.4mpg for light trucks.[67] In 2010, the Agency implemented a national fuel economy standard requiring automakers to achieve 35mpg by 2020 for all fleets.[68] However, modern automobile technology has changed exponentially in virtually every major vehicle component since the Agency implemented CAFE standards in 1978. Many modern vehicles come standard with touch screen infotainment systems, state of the art safety mechanisms, unprecedented comfort elevation features, and hands-free communication functions. It would be logical, then, to expect fuel economy standards to increase proportionally with the continuous advent of such complex technologies. Unfortunately, this has not happened despite the years-long existence of advanced technology that could facilitate more ambitious fuel economy standards. It has been more than a decade since the Agency reformed the CAFE standards. This extensive hiatus signals that it is time for the Agency to act ambitiously in accordance with its statutory requirements and to reflect in its decision the advancements that modern technology can feasibly deliver. As such, the Agency must adopt the maximum feasible fuel economy standard and must also consider relevant factors such as the role of AFVs like EVs on the feasibility of more stringent standards.

A. Alternative 3 May be More Effective if the Agency Amended its Credit Banking Scheme

[67] Nat'l Highway Traffic Safety Admin, *Summary of Fuel Economy Performance (Public Version)* (Dec. 15, 2014).
[68] Office of the Press Secretary, *Fact Sheet: Energy Independence and Security Act of 2007*, National Archives and Records Administration (Dec. 19, 2007) https://georgewbush-whitehouse.archives.gov/news/releases/2007/12/20071219-1.html.

One major obstacle inhibiting automakers from actually achieving the fuel economy standards is the laissez-faire credit banking system permitted by the Agency. When an automaker's actual average fuel economy for a given fleet category (car or light truck) exceeds the applicable fuel economy standard for the same category, the automaker earns credits. When the auto manufacturer fails to meet CAFE standards, the auto manufacturer faces civil penalties.[69] These compliance costs are what incentivizes automakers to earn or buy credits. Under this system, individual auto manufacturers are permitted to "carry" credits forward up to 5 MYs into the future, carry them back up to 3 MYs into the past, transfer credits between fleets, and trade (buy or sell) credits in unlimited quantities.[70] This scheme poses notable problems to compliance. First, an automaker can earn credits for overcompliance and then use those credits to reduce compliance without penalty. This may incentivize overcompliance in the short term, but it ultimately incentivizes noncompliance in the long term. This credit system allows automakers to "bank" or save credits over long periods of time.[71] Consequently, automakers who have accumulated large sums of credits may fail to comply with CAFE standards for as long as those credits will cover their shortfalls. This system also allows automakers to trade (or purchase) credits from other manufacturers. This may pose additional problems for compliance, especially when the automakers that are selling credits are zero-emission or EV manufacturers.

[69] Hui He, *Credit Trading in the US Corporate Average Fuel Economy (CAFE) Standard,* The International Council on Clean Transportation (Mar. 7, 2014) https://theicct.org/publications/credit-trading-us-corporate-average-fuel-economy-cafe-standard

[70] 86 Fed. Reg. 49602 at 49609 (Sept. 3, 2021)

[71] Leard, B., & McConnell, V, *New Markets for Credit Trading under US Automobile Greenhouse Gas and Fuel Economy Standards,* Resources for the Future (May 4, 2017) https://www.rff.org/publications/reports/new-markets-for-credit-trading-under-us-automobile-greenhouse-gas-and-fuel-economy-standards/

Auto manufacturers like Tesla can accumulate mass quantities of credits for overcompliance because they are zero-emission vehicle manufacturers. Because they have no need to use those credits due to the naturally high fuel economies of their vehicles, they can profit from selling those credits to automakers who might not manufacture zero-emission or EVs, and who might be facing civil penalties for shortfalls. Indeed, this is exactly what Tesla has been doing.[72] The problem with this scheme is that it might, for example, disincentivize automakers from pursuing technological innovations in the EV market and may likely incentivize noncompliance with CAFE standards when automakers know they can buy their way out of compliance.

To mitigate this issue, the Agency should consider amending its credit rules. First, the Agency should consider prohibiting the sale of credits between companies. This would prevent zero-emission automakers from inducing other automakers to buy credits to avoid compliance costs. This would also induce automakers with little zero-emission vehicle market presence to invest in research and development to begin producing vehicles that can achieve or exceed CAFE standards. Furthermore, the Agency should prohibit automakers from accumulating credits and banking them indefinitely. The Agency should require automakers to use their credits within 1 year from when they are earned so that automakers could not fail to comply with CAFE standards for more than one MY. In combination with this rule, the Agency could also consider limiting the amount of credits permitted within a certain MY period, such as 3 MYs. This would allow automakers to earn credits for use within 1 year from when they are earned, but would prohibit those automakers from earning more credits until several

[72] Fortuna, C, *Tesla Pushes For Stricter CAFE Penalties In USA* (Sept. 24, 2021) https://cleantechnica.com/2021/09/24/tesla-pushes-for-stricter-cafe-penalties-in-usa/

MYs in the future, even if they over comply. This would require automakers to at least meet CAFE standards to avoid civil penalties. Finally, the Agency could diminish the value of credits such that they may alleviate some compliance costs but would not compensate entirely for noncompliance. This would lessen the financial burden on automakers facing penalties, but would still allow for enough financial pressure to induce automakers to meet or exceed CAFE standards.

V. The Agency Must Consider the Projected Increase in Market Share of both Electric Vehicles and Hybrid Electric Vehicles

The increasing adoption of electric vehicles (hereinafter "EV") and hybrid electric vehicles (hereinafter "HEV") make implementing more stringent CAFE standards than proposed possible. Within the proposed rule, the Agency admits that EV and HEV will become more commonly manufactured in the coming years.[73] Specifically, the Agency states that there exists, "…a perceived shift in manufacturer's confidence in selling electric vehicles…"[74] Further, the Agency states that manufacturers are "more sanguine about consumer demand for fuel efficiency and the market for fully electric vehicles going forward than they have been previously."[75] Despite these strong statements, the Agency does not consider EV and HEV when determining the maximum feasible CAFE levels.[76] Further, the Agency is prohibited from considering this important factor.[77]

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[73] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021).
[74] Lance Bultena et. al., *NHTSA proposed MY2024-2026 Corporate Average Fuel Economy Standards (NHTSA proposes MY2024-2026 Corporate Average Fuel Economy standards | Hogan Lovells - JDSupra).*
[75] *Id.*
[76] *Id.*
[77] *Id.*

Because the increased adoption of EV and HEV will significantly impact the maximum feasible CAFE levels, we urge the Agency to incorporate this factor into its proposed rule.

The market share of EV are projected to spike significantly in the next few years. According to the EPA, there will be a 7.8 percent increase in the market share for EV by model year 2026.[78] This represents a threefold increase from model year 2020.[79] Further, according to recent estimates shared by IHS Markit in August of this year, EV and HEV will represent twenty-three percent of new light vehicle sales by model year 2026.[80] Further, the recently passed bipartisan infrastructure bill includes $7.5 billion for EV charging stations.[81] It is reasonable to believe that this may spur even more investment in EV technology by auto manufacturers. A cursory look at available projections demonstrates that EV are going to increase substantially in volume over the time frame of the proposed rule.

While the future looks bright for EV, the HEV revolution may already be upon us. According to a study conducted in 2018, which examined a time period until 2026, HEV will increase in market share by over 8.1 percent.[82] As of 2019, HEV makeup 2.4 percent of all auto sales in the United States.[83] Further, in model year 2021, a variety of

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[78] EPA, *Electric Vehicle Trends and Projections* (Electric Vehicle Trends and Projections (epa.gov)).
[79] *Id.*
[80] IHS Markit, *Ev Charging Infrastructure Report and Forecast* (EV Charging Infrastructure Report and Forecast | IHS Markit).
[81] Green Car reports, *Infrastructure bill: $7.5B toward nationwide network of 500,000 EV chargers* (https://www.greencarreports.com/news/1134092_infrastructure-bill-7-5b-toward-nationwide-network-of-500-000-ev-chargers).
[82] Markets and Markets, *Hybrid Vehicle Market by Electric Powertrain… (Hybrid Vehicle Market Size, Share and Industry Forecast to 2025 | MarketsandMarkets).*
[83] BTS, *Hybrid-Electric, Plug-in Hybrid-Electric and Electric Vehicle Sales* (Hybrid-Electric, Plug-in Hybrid-Electric and Electric Vehicle Sales | Bureau of Transportation Statistics (bts.gov)).

auto manufacturers are releasing hybrid models with impressive fuel efficiency. For instance, the model year 2021 Hyundai Ioniq Hybrid gets a combined fifty-nine miles per gallon.[84] Further, the model year 2021 Toyota Prius gets a combined fifty-six miles per gallon.[85] Finally, both the model year 2021 Honda Insight and the model year 2021 Kia Niro get approximately a combined fifty miles per gallon.[86] Both the increasing prevalence of EV and HEV should factor heavily into the maximum feasible CAFE standard set by the Agency.

If these estimates are accurate, alternative 3 would likely be met without any innovation by auto manufacturers. Alternative 3 would require an average fuel economy of approximately 51.2mpg by 2026.[87] Assuming that the fuel economy equivalent across both EV and HEV is 120mpg and that the average fuel economy of all other vehicles stays at the 2020 level of 25.7mpg[88], the average fuel economy will be approximately 47.39mpg across all vehicles in 2026. Further, if the estimate is conservative and EV and HEV make up at least 30% of all vehicles by 2026, then without any other innovations, the average fuel economy of all vehicles would be approximately 54mpg across all vehicles in that year. Thus, simply by accounting for current trends, Alternative 3 may be met without posing any burden on auto manufacturers. Arguably,

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[84] Kelley Blue Book, *Most Efficient Hybrids of 2021,(* Most Fuel Efficient Hybrids of 2021 | Kelley Blue Book (kbb.com)).
[85] *Id.*
[86] *Id.*
[87] Nat'l Highway Transportation Safety Admin, *Fuel Economy: Draft SEIS for Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks,* Docket No. NHTSA-2021-0053, U.S. Dept. of Transportation (2021).
[88] Vehicle Technologies Office, *Preliminary Data Show Average Fuel Economy of New Light-Duty Vehicles Reached a Record High of 25.7 Mpg in 2020*, Office of Energy Efficiency and Renewable Energy (Mar. 15, 2021) https://www.energy.gov/eere/vehicles/articles/fotw-1177-march-15-2021-preliminary-data-show-average-fuel-economy-new-light.

the issuance of CAFE standards in and of itself will increase EV and HEV adoption, so it is possible that alternative 3 will be exceeded by the status quo.

Looking at available data, it becomes clear that the Agency should reverse its decision to not consider future EV and HEV adoption. While both EV and HEV make up a relatively small percentage of the total automobile market share in the United States, their adoption is growing rapidly. Projections already show the market share of both EV and HEV growing at a staggering pace, and the recent passage of infrastructure legislation as well as COP26 agreements may increase the adoption of these technologies even faster. Finally, with several HEV from this year already meeting the model year 2026 CAFE standards as proposed, we urge the agency to set more ambitious fuel efficiency standards. By considering EV and HEV adoption throughout the automobile industry, the Agency can be justified in setting more rigorous CAFE standards.

VI. Conclusion

We commend the Agency for reversing the previous administration and proposing CAFE standards which benefit consumers and attempt to meet pressing environmental concerns. Regardless, we urge the Agency to not limit its ambition, and to amend the proposed CAFE standards to meet the specifics laid out by alternative 3 at a minimum. Neglecting to do so would put the proposed rule in danger of being overturned in future litigation. Alternative 2 does not meet the EPCA and EISA requirement of setting the most stringent feasible standard. Additionally, it may not even pass an arbitrary and capricious analysis under APA section 706. Further, alternative 2

does not meet the need of the United States to conserve energy. Finally, the Agency did not fully consider the projected increase in the market share of EVs, and the complementary role they will play in achieving Alternative 3 at a minimum.

Once again, we are grateful for the opportunity to provide the Agency with input regarding the proposed CAFE standards. It is our hope that we have provided valuable information to the Agency which will guide its ultimate decision on the matter. Further, we hope to have added to the strength of the administrative record. While we did not meet the posted comment deadline, we hope to have our comment fully considered, as it provides much value to the Agency.