October 16, 2023

ELECTRONIC SUBMISSION

Attn: NHTSA–2023–0022

U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

Re: Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027–2032 and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030–2035. Docket No. CEQ-2023-0003

To Whom It May Concern:

On August 17, 2023, the Department of Transportation (DOT) through the National Highway Traffic Safety Administration (NHTSA) proposed "Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027–2032 and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030–2035." 88 Fed. Reg. 56,128. Having been intimately involved in the preparation and review of environmental and fuel economy regulations under President Trump, and because we believe that the proposed rule is not in accordance with law, we respectfully submit these comments for NHTSA's consideration.

NHTSA's authority for the proposed rule is the Energy Policy and Conservation Act of 1975, as amended by the Energy Independence and Security Act of 2007 (hereinafter EPCA) (codified at 49 U.S.C. Chapter 329). Section 32902 of the statute requires NHTSA to set corporate average fuel economy (CAFE) standards for passenger cars and light trucks at the maximum feasible level that the agency determines vehicle manufacturers can achieve in each model year (MY) through 2030. EPCA also authorizes NHTSA to consider setting future fuel economy standards for medium-duty trucks, including those vehicles that NHTSA's proposed rule terms "heavy-duty pickups and vans," or "HDPUVs."

As with other delegations of standard-setting authorities, such as those in the Clean Air Act that apply to the Environmental Protection Agency (EPA), section 32902 contains clear principles to

guide NHTSA's setting of fuel economy standards, as well as significant limits on that authority. Those limits make clear that NHTSA cannot use its statutory authorities under EPCA to force manufacturers to switch to alternative fuel vehicles, such as electric vehicles (EVs), from internal-combustion engine (ICE) vehicles. The Clean Air Act creates analogous limits on EPA's authority to set emissions standards for vehicles, but the two statutes have different purposes. Fuel economy standards under EPCA are not environmental regulations.

Yet the Biden administration has redirected and coopted EPCA to serve the administration's climate change agenda and has subordinated NHTSA's exclusive regulatory authority to set fuel economy standards to EPA's authority under the Clean Air Act. Through the actions of EPA and NHTSA, the administration has coordinated and manipulated NHTSA's fuel economy standards and EPA's vehicle emissions restrictions in such a way that both sets of statutory authorities have been diverted from their original purposes while the careful statutory limits Congress placed on these regulatory programs have effectively disappeared from view.

Simply put, NHTSA is using the fuel economy standards as a lever to force the auto industry to convert to the production of electric vehicles in violation of the statutory authorities established by Congress to govern the CAFE program. These efforts are closely combined and coordinated with, and cannot be divorced from, the parallel actions undertaken by the EPA through its setting of emissions control limits for new motor vehicles and through its authorizations for similar regulatory mandates by the California Air Resources Board (CARB). All of these coordinated actions are occurring as part of a unified strategy of the Biden administration, as set forth in executive orders issued by President Biden. *See* Executive Order 14037 ("Strengthening American Leadership in Clean Cars and Trucks"), August 5, 2021 (directing action by EPA and NHTSA and setting goal of 50 percent of U.S. new vehicle sales to be zero-emission vehicles by 2030).

The result is that NHTSA has proposed fuel economy standards that are inconsistent with the governing statutory requirements and arbitrary and capricious in violation of the Administrative Procedure Act, or APA, 5 U.S.C. § 706(2).

## Discussion

### A. Background

In the proposed rule, NHTSA is proposing new CAFE standards for light-duty vehicles (passenger cars and light trucks) for MYs 2027–2031 and new fuel efficiency standards for heavy-duty pickup trucks and vans (HDPUVs) for MYs 2030–2035. The proposed standards for light-duty vehicles build on the draconian increases in CAFE stringency that were finalized by NHTSA in April 2022. The 2022 final rule—currently under legal challenge before the U.S. Court of Appeals for the D.C. Circuit in *NRDC v. NHTSA*, No. 22-1080 (argued Sept. 14, 2023)—imposed cumulative increases of 26 percent in fuel economy standards over three MYs,

2024-2026. Now, in the current proposal, NHTSA would add on top of those huge increases further unattainable increases in stringency of two additional percent per year for five MYs for passenger cars and four percent per year for pickups, SUVs, minivans, and other light trucks (with comparable augural increases projected for MY 2032). For HDPUVs, NHTSA is proposing to require impossible increases in fuel efficiency of ten percent per year over the period of MYs 2030 through 2035.

NHTSA's authority for the proposed light-duty vehicle standards is its statutory obligation to set CAFE standards for such vehicles at the maximum feasible level that the agency determines vehicle manufacturers can achieve in each MY through 2030. *See* 49 U.S.C. § 32902(b)(2)(B). That authority is subject to strict limits, however, which revolve around the concept of "maximum feasibility," as defined and elaborated by the factors set forth in section 32902(f), including consideration of "technological feasibility," "economic practicability," the effects of other government standards applicable to motor vehicles, and the need of the Nation to conserve energy. § 32902(f).

EPCA was passed in the context of the Arab oil embargoes of the 1970s, when American consumers and the U.S. economy were threatened by gasoline shortages and high fuel prices and Congress sought to address the national security dangers of America's dependence on foreign oil. Consistent with that context, the purpose of the CAFE program was to prod automakers into offering America's consumers more fuel-efficient vehicle options in order to advance the national goal of conserving energy while preserving the vitality of America's auto industry.

It was not Congress's purpose in EPCA to give NHTSA any authority to force a transformation in the U.S. auto industry. The gas-powered automobile has long been an engine of American freedom and prosperity, and the many assembly plants, factories, research facilities, and component suppliers that contribute to U.S. automotive production comprise a critical part of America's industrial base, and they generate and sustain millions of good-paying jobs for the Nation's workers. Accordingly, just as Congress has acted on several occasions to bail out or support the automakers during times of financial stress, Congress's delegation of authority over the fuel economy program has been carefully limited to avoid harmful dislocations in this critical industry.

Initially, Congress specified mileage targets by statute and put a tight collar on DOT's regulatory authority: Any proposed fuel economy standard that fell outside the collar was subject to veto by either House of Congress—a restraint that was nullified when the Supreme Court held legislative vetoes unconstitutional in *INS v. Chadha* (1983). And from time to time, Congress has put statutory caps on the mileage standards through appropriations riders. Ultimately, when it allowed broader standard-setting discretion to DOT under EPCA, Congress still did so in a manner designed to ensure that NHTSA's regulatory power would never be used to frustrate Americans' love affair with the automobile or disrupt the traditional automotive industry.

In administering the fuel economy program, NHTSA must (i) respect the practical needs and desires of American car buyers; (ii) take into account the economic realities of supply and demand in the auto markets; (iii) protect the affordability of vehicle options for American families; (iv) preserve the vitality of the domestic auto industry, which sustains millions of good-paying American jobs; (v) maintain highway traffic safety for the country; (vi) consider the nation's need to conserve energy; and (vii) advance the goal of reducing America's strategic dependence on foreign supplies of critical inputs.

There is no doubt EPCA is referring to the fuel economy that is "technologically feasible" and "economically practicable" for ICE vehicles. EPCA defines "fuel" to mean gasoline, diesel fuel, or other liquid or gaseous fuels with similar combustion properties. Electric vehicles are defined as "alternative fuel" vehicles, and EPCA specifically prohibits NHTSA from considering the fuel economy of electric vehicles in setting or amending its standards. As for hybrid gas-electric vehicles, the statute requires NHTSA to consider them only as if they were operated on gasoline or diesel fuel. *See* 49 U.S.C. § 32901(a)(1), (8), (9) & (10); § 32902(h). EPCA also prohibits NHTSA from considering the availability of compliance credits in setting or amending its standards. *See* § 32902(h)(3).

In sum, NHTSA has no authority to compel the phaseout of internal-combustion engines or to require automakers to use new technologies that are not responsive to consumer demand or that fail to align with the industry's existing production realities.

### B. NHTSA's Proposed Standards Are Unlawful Because NHTSA Has Improperly Considered the Fuel Economy of Electric and Hybrid Vehicles and the Availability of Credits in Setting the Proposed Standards.

Section 32902(h) prohibits NHTSA from considering the fuel economy of "dedicated vehicles" in setting fuel economy standards. "Dedicated vehicles" are defined to include fully electric vehicles. § 32901(a)(8). A similar principle applies to hybrid vehicles: Under section 32902(h)(2), NHTSA may not consider the fuel economy of such vehicles when operated on electricity. And section 32901(h)(3) prohibits NHTSA from considering the availability of compliance credits when prescribing standards.

The proposed rule runs afoul of these prohibitions because NHTSA's baseline model used in establishing the proposed standards incorporated the fuel economy of EVs and electric hybrids, and NHTSA took into account the availability of credits in modeling automakers' compliance for purposes of setting the standards. *See* 88 Fed. Reg. at 56,319; *see also id.* at 56,133. Among other things, NHTSA's incorporation into its modeling baseline of the expected penetration of EVs based on CARB's EV mandates, which have not yet gone fully into effect, clearly violates section 32902(h).

In these respects, NHTSA's current proposal relies on the same analytical approach that NHTSA used in its 2022 final rule setting the standards for MYs 2024-2026, and the 2022 rule is under challenge before the D.C. Circuit for violating section 32902(h). *See* Initial Brief of Petitioner

American Fuel & Petrochemical Manufacturers and State Petitioners, *NRDC v. NHTSA*, No. 22-1080 (D.C. Cir. filed Nov. 17, 2022) (Doc. #1974190). Because the proposed rule suffers from the same legal defects as the 2022 rule, the proposed standards should be withdrawn and reconsidered by NHTSA.

### C. The Proposed Standards Fail to Meet the Governing Requirements of EPCA and Exceed NHTSA's Statutory Authority.

The true purpose behind the proposed standards—that they are designed, in fact, to compel the automakers to accelerate the switchover of their production lines to the manufacture of EVs in concert with EPA's parallel regulatory actions—is betrayed by just how far the standards depart from the requirements of section 32902(f).

#### 1. The proposed standards are neither "technologically feasible" nor "economically practicable" within the meaning of EPCA.

To be "technologically feasible" for purposes of section 32902(f), fuel economy standards must be realistically achievable by the ICE vehicles that existing automakers are capable of producing in mass volume using their available production lines and that will have the power, durability, and performance attributes that meet consumer demand.

And to be "economically practicable," fuel economy standards must take account of market demand and the economic realities of the auto industry. That means that the prescribed standards will enable the automakers to produce, in large volume and at a profit, a wide range of affordable ICE vehicle options that meet the various needs and demands of America's families. Such standards also must preserve jobs in the auto sector and maintain the vitality of America's critical auto industry, and they must promote, rather than diminish, highway safety.

The proposed standards contravene all of these goals.

NHTSA's own model projects that automakers will have to convert much more of their production capacity to the manufacture of EVs in response to the proposed standards, rather than producing the full range of gas-powered ICE vehicles that America's families prefer. NHTSA's model also projects that the legacy automakers will need to purchase a large number of credits from EV manufacturers like Tesla as a compliance strategy. Even with these assumed compliance moves, moreover, NHTSA still predicts that nearly all of the legacy automakers will fail to satisfy the proposed standards and will be forced to pay sizable penalties to the U.S. Treasury.

These predicted results confirm that it would be downright impossible—not just technologically infeasible and economically impracticable—for automakers to meet the proposed standards by producing at volume the full range of ICE-driven passenger cars and light trucks that American consumers want to buy. Accordingly, NHTSA's proposed approach to CAFE will not respect

and preserve market demand, consumer choice, and the economic realities of the auto industry, as Congress mandated. If finalized as proposed, NHTSA's rule would overthrow these market forces and seek to replace them with a form of centralized industrial planning designed by regulators in Washington. That is the direct opposite of what Congress instructed in EPCA.

With regard to any ICE vehicles that automakers may still be able to produce under the proposed standards (as an ever-smaller portion of their overall fleets), the proposed standards obviously do not allow for anything approaching the range of options in ICE models that consumers need.

The analysis from NHTSA's own model shows that the proposed standards will leave the automakers no choice but to manufacture anemic and impractical gas-powered vehicles that are too small and that lack the power and durability that most Americans need and want in their cars and trucks. The model contemplates that automakers will rely on smaller and lighter cars and trucks with smaller-volume engines and will need to combine those smaller engines with features designed to squeeze as much power and efficiency as possible out of the engine—features such as turbochargers, Atkinson combustion-cycle engines, high-compression ratios, automatic piston shutoff, and similar constraints. These configurations will put continuous stress on the engines and will lead to a significant loss in engine (and therefore vehicle) durability, reducing the usefulness of the vehicle and raising its operating costs for consumers.

The V-8 engine was popular because it delivered the power, durability, and performance that Americans needed and desired for many daily uses—in other words, it offered valuable utility. The anemic ICE vehicles that the proposed standards will foist on the American public will be woefully lacking in power, durability, and performance and will thus offer far less utility for America's families.

**Consumer impacts.** The proposed standards will simply destroy consumer choice at the dealership. Many of the vehicle models most popular with American families will no longer be sustainable under the proposed rule. Automobiles have long been America's favorite freedom machines, and when the models of ICE vehicles Americans love the most disappear from dealerships, that will represent an enormous drop in consumer welfare (in basic happiness and wellbeing) for the average American family and for the U.S. economy as a whole. For many of these ICE vehicle models, there is no EV option likely to be available that could provide the same performance, utility, or recreational value at a comparable price (or at all). This generational loss of consumer welfare would explode any sense in which NHTSA might claim that these proposed standards are "economically practicable" for consumers.

Consumers will also be harmed by much higher prices for new vehicles. Automakers will be forced to put enormous and rapidly increasing investments into the switchover to EV production, as necessitated by the proposed standards and the related policies pursued by the Biden administration, and they will be required to make huge purchases of costly credits from Tesla and other EV makers in an effort to lessen their CAFE penalties. These increased costs will necessarily be spread across the automakers' entire fleets and will drive up the price of all new

vehicles, with greater price increases concentrated on those vehicles for which the demand is highest relative to supply.

All Americans will be harmed by these price increases, but the biggest losers will be lower-income Americans who cannot afford to buy an EV or to pay more for a gas-powered vehicle at the dealership, as well as those who live in rural areas and need to drive longer distances and for whom EVs are impractical.

**Impacts on the auto industry.** The loss of popular new vehicle options and the significant price increases at the dealership will mean that fewer new vehicles will be purchased. This drop-off in demand will challenge the profitability of the auto industry and lead to a loss of jobs for tens of thousands of America's autoworkers, as well as a loss of jobs in the many U.S. companies that supply inputs for the production of automobiles and trucks.[1] The United Auto Workers union has warned of the potential for job losses from the transition to EVs,[2] as automakers announce more plant closures and layoffs due to the costs of electrification.[3] These outcomes are anathema to the purposes of EPCA.

NHTSA's projections of EV costs are plainly underestimated. As other commentators have noted, there are many factors, such as battery costs, lack of charging infrastructure, and high cross-subsidies, that make adoption of electric vehicles at the scales NHTSA anticipates unlikely. The end result of relying on these faulty predictions is likely to be the shrinking of the new car market and skyrocketing costs—results at complete odds with the terms of EPCA and the purposes Congress sought to advance in the CAFE program.

There is overwhelming evidence that manufacturing costs for EVs far exceed current sales prices, and that those prices are the result of cross-subsidization from the much larger number of ICE vehicles sold yearly. Manufacturers are currently willing to absorb losses on EVs because current federal and state rules require that they sell large numbers of them, and because they are able to shift the losses onto ICE vehicles by inflating prices for the latter. But according to EPA's estimates in its latest vehicle emissions standards, light-duty EV sales are set to soar from less than six percent to 67 percent by 2032. That would make it virtually impossible to mitigate the

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[1] *See* Technality, "Ford Just Proved How Far Ahead Tesla Really Is: Profitability May Continue to Be a Struggle for All Legacy Automakers," May 10, 2023, https://medium.com/tech-topics/ford-just-proved-how-far-ahead-tesla-really-is-6a4d95cff519 ("Despite wanting to be a fully-electric brand by 2035, as of Q4 2022, Ford's average net margin on the Mustang Mach-E was -40.4%. Unfortunately, that's a figure that's only gotten worse since, to the point where Ford is now losing an average of $58,000 for every EV sold.").

[2] *See* Press statement, United Auto Workers, "UAW Statement on Job Cuts at Stellantis," April 26, 2023, https://uaw.org/uaw-statement-job-cuts-stellantis.

[3] *See* Michael Wayland, "Stellantis to indefinitely idle Jeep plant, lay off workers to cut costs for EVs," CNBC.com, December 9, 2022, https://www.cnbc.com/2022/12/09/stellantis-to-idle-jeep-plant-lay-off-workers-to-cut-costs-for-evs.html.

high losses on EV production by marginally inflating ICE vehicle prices. If the proportion of EV sales increased as projected, the cross-subsidization scheme would result in increasingly inflated prices for ICE vehicles, which will reduce sales of ICE vehicles, and thereby reduce manufacturers' ability to absorb losses in EV production at all, resulting in higher EV prices.

NHTSA ignores the high risk that the proposed rule will make both ICE vehicles and EVs unaffordable for most Americans, significantly reducing mobility while decimating the U.S. auto industry. The proposed rule is almost certain to entail soaring unemployment among both consumers and workers in the auto- and related industries. NHTSA appears oblivious to these risks.

**Safety impacts.** Also anathema to EPCA will be the negative impact on highway safety that would result from application of the proposed standards. To put it bluntly, the proposed rule will cause an increase in traffic deaths and serious injuries on America's highways.

Some of these deaths and injuries will result from the fact that automakers will have to manufacture ICE cars and trucks that are lighter and smaller and therefore less protective in a collision. In addition, as new vehicle models become unaffordable or unappealing, many American families will be left driving older and older used cars, and the age of the nation's auto fleet will rise dramatically. Already, the average age of a car on the road in the United States is approaching 13 years, and many cars are on their fifth or sixth owners. The aging of the American fleet has very negative safety consequences, as NHTSA's own statistics show that older vehicles are much less safe than newer models in an accident.[4]

In its analysis of the proposed rule, NHTSA has downplayed and minimized the loss of lives and serious injuries its standards will cause by attributing many of these deaths and injuries to other regulators that are also pursuing the Biden administration's goals—to EPA's parallel rules and to the EV mandates issued by CARB—in other words, by assuming them away and not counting them for purposes of the current rulemaking. That hide-the-ball approach to highway safety—a kind of cynical legerdemain and regulatory manipulation—betrays the public trust. NHTSA is the Nation's premier highway traffic safety regulator; it should not be purposefully proposing fuel economy standards that it knows will cause a significant increase in highway deaths and serious injuries. To do so is scandalous.[5]

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[4] *See* https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/newer-cars-safer-cars_fact-sheet_010320-tag.pdf.

[5] NHTSA is proposing to set binding fuel economy standards for light-duty vehicles produced through MY 2031, but EPCA does not require NHTSA to promulgate CAFE standards for MYs beyond 2030, and there is a strong basis to conclude that Congress has not granted NHTSA the statutory authority to do so. *See* 49 U.S.C. § 32902(b)(2)(B) (directing NHTSA to set "maximum feasible" fuel economy standards for passenger cars and light trucks only "for model years 2021 through 2030"). The proposed rule does not address this issue concerning the scope of NHTSA's statutory authority, and it is incumbent on NHTSA to consider it.

**2. The proposed standards fail to reflect America's current energy conservation needs following the shale-oil boom and will only undermine national security in violation of EPCA.**

A proper consideration of "the need of the United States to conserve energy" should result in fuel economy standards that become *less stringent* when America's proven oil reserves expand. But the proposed rule goes in the opposite direction, requiring more stringency at a time when U.S. oil and gas reserves have never been more plentiful.

**America's liquid-fuel independence.** The proposed standards ignore the fact that the U.S. currently possesses a superabundance of domestic energy resources, especially petroleum and natural gas, and does not have the same need to conserve liquid-fuel energy resources that it had in the wake of the Arab oil embargoes of the 1970s.[6] For this reason alone, the proposed standards should be rejected and reconsidered.

**America's critical dependence on foreign sources for needed EV inputs.** When Congress enacted EPCA in 1975, America's strategic dependence on oil supplies from the Middle East posed an acute national security threat, and a central purpose of EPCA was to address and mitigate that strategic dependency. Any use of the CAFE program, like the current proposal, that tends to push automakers into converting to the production of EVs more rapidly than market demand would otherwise support cuts sharply against the design and purposes of EPCA, because such an industrial transformation will render the United States dramatically more dependent on and vulnerable to China and other unfriendly foreign sources of critical inputs, such as the processed minerals required for EV batteries.

China today controls nearly 70 percent of global EV battery manufacturing capacity—including 70 percent of the world's lithium supply; 80 percent of the necessary rare earth minerals; and approximately 75 percent of the magnets needed for EV motors—and it boasts 107 of the 142 lithium-ion battery mega-factories planned or under construction in the world today (with only 9 planned for the U.S.).[7]

The average EV battery uses about 8-10 kilograms of lithium (even more for higher performance batteries), and the world today mines a total of about 130,000 tons of lithium per year. That means that if the Biden administration succeeds in converting 60 percent of annual U.S. car sales to EVs (about 7.8 million vehicles), those EVs (just for the U.S. market) would require 60 percent of the entire world's current production of lithium.[8]

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[6] *See, e.g.*, Robert Bryce, *Drill, Baby, Drill*, robertbryce.substack.com (Oct. 11, 2023).

[7] *See* https://secureenergy.org/safe-urges-bipartisan-coordinated-policy-to-lead-new-tech-in-auto-industry-and-protect-against-chinese-supply-chain-dominance-in-new-report/.

[8] *See* https://pubs.usgs.gov/periodicals/mcs2023/mcs2023-lithium.pdf.

Similarly, each EV battery requires about 10 kilograms of cobalt, which translates into one metric ton for each 100 EVs and 10,000 tons of cobalt for one million new EVs. There are only between 150,000 and 190,000 tons of cobalt mined every year worldwide (the lion's share from the Democratic Republic of the Congo). Here again, if 60 percent of annual U.S. auto sales were EVs by 2030 (7.8 million vehicles), those EVs (just in the U.S.) would consume about 78,000 tons of cobalt—half the world's supply.[9]

To put these percentages in perspective, according to the International Energy Agency (IEA), "In 2022, about 60% of lithium, 30% of cobalt and 10% of nickel demand was for EV batteries" worldwide.[10] Because the U.S. market accounts for less than 20 percent of new vehicle sales globally,[11] and other governments, particularly China and the EU, are pushing for similar rapid transitions to EVs, the overall worldwide supply of the critical minerals needed to produce EV batteries will have to increase at a truly astounding rate in the next several years to meet the Biden administration's assumptions.[12] Government subsidies will not solve this problem in the near future, and there is no reasonable prospect that the Biden administration or local permitting authorities will fast-track the environmental approvals needed for new mining operations and mineral-processing facilities to be brought to our shores, even if the projects were otherwise shovel ready.

Because the proposed rule will drive the U.S. to critical dependency on China, NHTSA should reject the proposal on this ground, too.

**Stressing the electricity grid.** A proper consideration of energy conservation and national security concerns would also avoid overstressing America's already vulnerable and under-resourced electricity grid. By forcing a mass conversion to EVs, the proposed rule—especially in combination with EPA's parallel tailpipe rules and the EV mandates promulgated by CARB in coordination with the Biden administration's policies—will put an unmeetable strain on our electricity grid. In this way, too, the proposed standards cannot be squared with the purposes of EPCA.

To accommodate the future fleet of EVs envisioned by the Biden administration, our national electric grid capacity would need to grow 60 percent or so by 2030 and much more over the long

[9] *See* https://pubs.usgs.gov/periodicals/mcs2020/mcs2020-cobalt.pdf.

[10] IEA, Global EV Outlook 2023: Trends in batteries, https://www.iea.org/reports/global-ev-outlook-2023/trends-in-batteries.

[11] *See* Alex Kopestinsky, "20 In-Depth Global and US Auto Sales Statistics for 2023," *Policy Advice*, March 23, 2023, https://policyadvice.net/insurance/insights/us-auto-sales-statistics/.

[12] *See* Doomberg, "Separation Anxiety," June 27, 2023, https://doomberg.substack.com/p/separation-anxiety (explaining why it is doubtful "the world can mine a sufficient amount of the necessary battery materials to meet anticipated demand").

term,[13] and that is growth in infrastructure alone, not in power generation. This buildout is simply not practicable in the timeframe the administration is contemplating.[14] Even if it could happen, it will have to be paid for, and those costs will inevitably be reflected in higher electricity rates for all users of electricity across the U.S. and higher EV charging fees in particular. Inevitably, government will try to manage the EV charging draw on the grid by rationing the hours for charging. American drivers will not tolerate such rationing.[15]

### D. NHTSA's Analysis of the Regulatory Effects of the Proposed Standards Is Arbitrary and Capricious.

NHTSA has gravely understated the costs of its proposed rule and overinflated the estimated benefits. The regulatory effects calculations are thus arbitrary and capricious and need to be fundamentally reconsidered.

#### 1. Deficiencies in NHTSA's cost calculations.

NHTSA has undercounted many of the direct technology costs needed to comply with the proposed standards, has assumed unrealistic demand for EVs and other new technologies that run against customer needs and market realities, has failed to consider costs associated with greater production and deployment of EVs, and has improperly excluded from its cost calculations the costs associated with EPA's and CARB's related regulatory requirements, which, in reality, are part of one unified set of Biden administration policy actions and should be treated together.

**Flawed demand assumptions.** NHTSA assumes a near-term future in which market demand for the new fleet of EVs will be just as high as it currently is for the most popular brands of ICE and hybrid vehicles, like the Ford F-150 pickup, the Chevy Silverado pickup, or the Toyota Camry. That assumption is highly suspect: the average price of an EV today is $61,000 (24 percent

[13] *See* https://www.energy.gov/policy/queued-need-transmission.

[14] *See* Robert Bryce, "47,300 Gigawatt-Miles from Nowhere," May 26, 2023, https://robertbryce.substack.com/p/47300-gigawatt-miles-from-nowhere.

[15] NHTSA's proposal to impose hyper-stringent new fuel economy requirements on medium-duty trucks (HDPUVs) for MYs 2030 through 2035 is misguided, and the proposed standards for such trucks, if finalized as proposed, would be arbitrary and capricious. The customers for HDPUVs are primarily commercial entities well aware of their own fuel-economy needs, and their purchases of these trucks are informed business decisions that occur in a highly competitive market. Especially given the abundance of America's petroleum reserves, there is no justifiable need for NHTSA to interfere with this market by dictating artificial and unachievable fuel economy mandates for HDPUVs by regulation. EPCA does not require NHTSA to set standards for these trucks, and NHTSA should refrain from doing so. If finalized as proposed, these standards will have seismic effects that will reverberate across the many sectors of the U.S. economy that depend upon the efficient and economical availability and use of HDPUVs.

higher than the average ICE vehicle),[16] and EVs come with limitations and question marks that concern many buyers.[17]

In the real world of the marketplace, the automakers cannot manage the huge capital costs of the Biden administration's assumed production switchover to battery-electric technology unless consumer demand for EVs is strong. Without sufficient market demand, at levels far more robust than currently seen, the effective costs of the proposed standards will be much higher than NHTSA projects and will not be sustainable for the automakers.

The Biden administration is hoping that generous federal subsidies for EV purchases will help consumers overcome their reluctance, but that hope is questionable at best. For one thing, Congress may change course and repeal these costly subsidies.

The true per-vehicle technology costs of the proposed standards will be far higher than NHTSA's analysis suggests. The super-aggressive increases in EV penetration that the rule assumes could only come about *after all the early adopters have already purchased their EVs.* Such an industry-wide transformation in production volumes and sales of EVs to non-early-adopters would involve a massive capital investment and marketing surge, and all the costs associated with that transformation must be accounted for as regulatory costs.

**Omitting significant costs of EV ownership.** In addition, the comparative lifecycle costs of owning and operating an EV versus an ICE vehicle are not nearly so different as NHTSA's analysis asserts. NHTSA claims huge cost savings for EV owners over ICE owners from the avoided costs of fuel and maintenance and repairs over the life of the vehicle, but this analysis fails to include the full costs of owning an EV.

For one thing, NHTSA ignores the cost of battery replacements for EV owners. EV batteries degrade over time with each charge and discharge, and this degradation will be accelerated if the EV gets heavy use, if it is driven through cold winters, or if the owner uses rapid recharging.[18] Battery degradation reduces significantly the power and range of the EV and will eventually lead to an unacceptable risk of thermal runaway and fire. At a certain point in the life of the EV, depending on the nature of its use, the type of recharging, and the environment where the vehicle

[16] *See* https://www.kbb.com/car-news/average-new-car-price-tops-49500/.

[17] For example, reports suggest that some electric pickups may have a greatly reduced effective range when towing heavy loads—a limitation likely to be of concern to prospective pickup buyers. *See* https://www.motortrend.com/reviews/ford-f150-lightning-electric-truck-towing-test/.

[18] *See* Jacqueline S. Edge, et al., "Lithium ion battery degradation: what you need to know," *Royal Society of Chemistry*, March 22, 2021, https://pubs.rsc.org/en/content/articlehtml/2021/cp/d1cp00359c (identifying 5 principal and 13 secondary mechanisms causing degradation of lithium-ion batteries in EVs, and explaining that degradation will be exacerbated by, among other things, usage profile, outside temperature, and the use of fast charging); Niall Kirkaldy, et al., "Lithium-Ion Battery Degradation: Measuring Rapid Loss of Active Silicon in Silicon-Graphite Composite Electrodes," *American Chemical Society Applied Energy Materials*, November 3, 2022, https://pubs.acs.org/doi/10.1021/acsaem.2c02047 (similar).

is driven, the owner will need to replace the battery (if replacement is even feasible)—just to maintain or restore the utility of the vehicle or for safety reasons. Further, independent of use, if the battery is scratched or suffers other forms of damage in a relatively minor traffic accident, the battery may need to be replaced prematurely (or the vehicle may be considered a total loss).[19]

Battery replacement, when available, will undoubtedly be very expensive. For an EV battery pack with a capacity of 100 kWh (the capacity level assumed by the EPA in its models), the replacement battery alone (not including labor, any fee for disposing of the old battery, and any other associated expenses) would cost at least $15,300. That figure is based on the Energy Department's 2022 estimated cost of manufacturing the battery—$153 per kWh of capacity. Uncertainty about the remaining life and capacity of the vehicle's battery, combined with the high cost of any potential replacement, will likely mean that a used EV will have much lower resale or trade-in value relative to a comparable used ICE vehicle. This loss in value will be a significant cost disadvantage of EV ownership.

NHTSA also undercounts the cost of electricity charging over the life of the EV. Even absent high EV penetration, the Bureau of Labor Statistics reports that electricity prices are steadily rising in the U.S.[20] Increased EV charging demand will only cause those prices to rise even faster. Driving a single EV 15,000 miles per year and charging it at home could raise the annual electricity bill for the average family by 50 percent or more.[21] If the Nation converts to EV ownership at the rates the Biden administration is aiming for, such a large increase in overall electricity demand will inevitably cause electricity rates to rise significantly.

The glib premise that car buyers in the U.S. will respond with strong demand for the supposed flood of future EVs (notwithstanding the practical concerns, cost considerations, and other uncertainties that surround EVs in the minds of American consumers), is critical to NHTSA's totally unrealistic assumptions about the cost implications of its proposed standards.

Other costs that will follow as a consequence of the proposed standards are completely ignored. These include:

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[19] *See* https://www.reuters.com/business/autos-transportation/scratched-ev-battery-your-insurer-may-have-junk-whole-car-2023-03-20/.

[20] *See generally* https://data.bls.gov/pdq/SurveyOutputServlet (allowing user to generate graph showing the rise from 2003 to the present in the average price of electricity in the U.S.).

[21] The Energy Information Agency reports that the average American household uses about 886 kilowatt hours of electricity per month, https://www.eia.gov/tools/faqs/faq.php, and the EPA says the average EV consumes 36 kilowatt hours of electricity per every 100 miles driven, https://www.epa.gov/greenvehicles/comparison-your-car-vs-electric-vehicle. If the family's EV is driven 15,000 miles per year, or 1,250 miles per month, it would consume 450 kilowatt hours of electricity every month.

**Requiring massive expenditures in electric charging infrastructure.** If finalized as proposed, NHTSA's fuel economy standards will hold America's automotive freedom hostage to the need for huge new investments in electric infrastructure throughout the U.S. NHTSA should recognize these infrastructure costs and include in its cost-benefit analysis the portion of these costs appropriately attributable to the proposed rule. It has failed to do so.

**Putting the Highway Trust Fund at risk.** The Highway Trust Fund, which covers a large percentage of the costs of state and local highway improvements and maintenance in the U.S., is currently funded through a gas tax. The gas tax is relatively easy to administer because it is paid at the level of wholesale gasoline and diesel fuel distribution by a small number of large distributors. If more than half of new vehicles sold in the U.S. were EVs, as contemplated by NHTSA and the Biden administration's policies, the gas-tax revenues for the Fund would drop dramatically, and the solvency and utility of the Fund would collapse. That would threaten the viability of the national highway system and the capacity of states to maintain highways in good repair.

If the Fund were to be retained in some form, it would require a new source of revenue, such as a tax on all vehicle miles traveled, or VMT. The idea behind a VMT tax is that it would equitably capture the VMT of EVs, just as well as ICE vehicles. However, a VMT tax is likely to be more complicated and costly to administer than the gas tax. There are significant questions about the design and administrability of a VMT tax that would need to be worked out and proven—for example, through one or more state-wide pilot programs—before implementation. Since NHTSA is proposing to adopt rules that would cause a national shift to EVs, which in turn would undermine the revenue basis for the Highway Trust Fund, NHTSA should recognize and consider as part of these rulemakings the upfront costs and dislocations that would be involved in transitioning to a new revenue basis for the Highway Trust Fund, as well as the ongoing higher costs of administering such an alternative tax.

**Increasing highway infrastructure costs.** Similarly, the cost of increased wear and tear on highway infrastructure, including the cost of increased frequency of required repairs, should also be recognized in the proposal. If, as the Biden administration is aiming for, EVs were to comprise more than half of new light-duty vehicle sales, and if a large percentage of new medium-duty trucks were battery powered, that would have a definite negative impact on highway infrastructure. The batteries in EVs are heavy, and, as a consequence, EVs tend to be considerably heavier than comparably sized ICE vehicles. The greater weight of EVs would cause faster wear and tear on highways if the number of EVs on the road were to increase significantly.

**Increasing the costs and burdens of first responders.** There is no mention in the proposed rule of the impact NHTSA's preferred fuel economy standards would have on first responders. If EVs come to comprise a greatly increased percentage of the nation's auto fleet, as the Biden administration contemplates, state and local first responders will inevitably incur significantly higher costs and burdens in the form of specialized fire-suppression chemicals and equipment

and additional hazard-response training requirements. Lithium-ion battery fires are a common occurrence with EVs, and these fires generate intense heat and toxic fluoride gas emissions, making them more difficult to extinguish than conventional vehicle fires and increasing the costs and management challenges of maintaining effective first responder capabilities.[22]

### 2. NHTSA's benefits estimates are flawed and arbitrary.

On the benefits side, NHTSA's calculations are wildly overinflated. They are based on predicted reductions in the amount of gasoline and diesel fuel that would be burned if the U.S. auto fleet converts to EVs at the aggressive and unrealistic rates projected by the Biden administration. But, at the same time, they ignore the very large *increase* in carbon dioxide emissions that would necessarily occur from the projected expansion in the production of EV batteries. They also ignore the upstream emissions of carbon dioxide from the increased electricity generation that would be needed to charge the projected fleet of EVs.

**Ignoring countervailing offsets.** As NHTSA touts the benefits from the projected conversion to expensive EVs, it ignores the fact that as consumers turn away from new models and the overall U.S. fleet ages, the older cars left on America's highways will produce more smog and other traditional air pollutants that degrade local air quality. And if there truly were an explosion in the sale of EVs, those EVs would need to be charged using electricity produced mostly from fossil-fuel-fired power plants, increasing the national emissions of carbon dioxide.[23]

Furthermore, NHTSA has omitted from its cost-benefit equation the upstream carbon dioxide emissions associated with EV production. The minerals and components used in EV batteries are mostly processed or manufactured in China using power generated from coal. While the U.S. has achieved huge reductions in carbon dioxide emissions by converting coal-fired power plants to natural gas, China's and other Asian nations' carbon emissions are growing rapidly because of their heavy reliance on coal, and the Biden administration's efforts to force increased EV production will only accelerate that dynamic.[24]

An automotive engineering analysis published in 2022 estimated that the carbon dioxide emissions from producing the battery used in one small EV (the Nissan Leaf) were equivalent to

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[22] *See* Fredrik Larsson, et al., "Toxic fluoride gas emissions from lithium-ion battery fires," *Scientific Reports*, *Nature*, August 30, 2017, https://www.nature.com/articles/s41598-017-09784-z (corrected March 22, 2018) (also available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5577247/).

[23] *See* Roger Pielke Jr., "The Energy Transition Has Not Yet Started: Global fossil fuel consumption is still increasing," *The Honest Broker*, June 29, 2023, https://rogerpielkejr.substack.com/p/the-energy-transition-has-not-yet; Robert Bryce, "The Energy Transition Isn't: Despite $4.1 trillion spent on wind and solar, they aren't even keeping pace with the growth in hydrocarbons," July 1, 2023, https://robertbryce.substack.com/p/the-energy-transition-isnt.

[24] *See* Robert Bryce, "The Iron Law of Electricity Strikes Again as Vietnam Boosts Coal Burn," June 17, 2023, https://robertbryce.substack.com/p/the-iron-law-of-electricity-strikes.

driving an ICE vehicle 24,000 miles (two years of driving), and those from producing the battery used in a large EV (the Tesla Model S) were equivalent to driving an ICE vehicle 60,000 miles (five years of driving).[25] In this proposed rule, NHTSA ignores the fact that EVs start out their lives on the road with such a huge head start (two to five years worth) in carbon dioxide emissions over their ICE counterparts.

NHTSA's failure to account for these huge offsetting emissions of carbon dioxide fundamentally distorts its analysis of net benefits in a manner that arbitrarily favors the preferred regulatory outcome. It is, in fact, false and misleading to label EVs "zero-emission vehicles" when the production of EV batteries and the charging of the batteries over the life of the vehicles both generate enormous amounts of carbon dioxide.

**Flawed use of "social cost of carbon."** NHTSA's projections of benefits from carbon dioxide reductions are primarily based on the so-called "social cost of carbon" models. However, as summarized in analyses published by our colleague from The Heritage Foundation, Kevin Dayaratna, these models are deeply flawed and unreliable. Among other things, they depend on outdated assumptions and fail to account for the positive agricultural effects of higher carbon dioxide levels. Using more appropriate assumptions, these models would show a social cost of carbon dioxide emissions that effectively approaches zero (and may even be negative).[26]

Regrettably, there would appear to be little or no chance that NHTSA will adjust its "social cost of carbon" benefits estimates downward at all. The current estimates rely on the usual discount rates of 3 and 7 percent traditionally used by the Office of Management and Budget (OMB) when estimating the present value of benefits expected to accrue in the distant future. But the Biden OMB has recently proposed to amend its Circular A-4 (governing such calculations) to encourage agencies to use lower discount rates (such as the 1.7 percent rate generally applicable

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[25] *See* Tristan Burton, et al., Convergent Science, Inc., "A Data-Driven Greenhouse Gas Emission Rate Analysis for Vehicle Comparisons," *SAE Int'l Journal of Electrified Vehicles*, April 13, 2022, https://doi.org/10.4271/14-12-01-0006 (also available at https://www.sae.org/publications/technical-papers/content/14-12-01-0006/).

[26] *See* Kevin D. Dayaratna, "Climate Change, Part IV: Moving Toward a Sustainable Future," Testimony before Subcommittee on Environment Committee on Oversight and Reform, U.S. House of Representatives, September 24, 2020; Kevin Dayaratna and David Kreutzer, Loaded DICE: An EPA Model Not Ready for the Big Game, Backgrounder No. 2860, The Heritage Foundation, November 21, 2013, https://www.heritage.org/environment/report/loaded-dice-epa-model-not-ready-the-big-game; Kevin Dayaratna and David Kreutzer, "Unfounded FUND: Yet Another EPA Model Not Ready for the Big Game," Backgrounder No. 2897, April 29, 2014, http://thf_media.s3.amazonaws.com/2014/pdf/BG2897.pdf; Kevin Dayaratna, Ross McKitrick, and David Kreutzer, "Empirically Constrained Climate Sensitivity and the Social Cost of Carbon," Climate Change Economics, Vol. 8, No. 2 (2017), pp. 1750006-1-1750006-12, https://www.worldscientific.com/doi/abs/10.1142/S2010007817500063; and Kevin Dayaratna, Ross McKitrick, and Patrick Michaels, "Climate sensitivity, agricultural productivity and the social cost of carbon in FUND," Environmental Economics and Policy Studies, 22: 433-448 (2020), https://link.springer.com/article/10.1007/s10018-020-00263-w.

to interest on long-term Treasury bonds) in assessing the value of long-term or so-called "inter-generational" benefits.[27] The use of the lower rate would increase the monetized present value of such claimed benefits considerably and would only exacerbate the arbitrary nature of the proposed rule's inflated benefit estimates.

Moreover, NHTSA's proposal to count the purported benefits of carbon dioxide reductions on a *global* basis, as opposed to confining its estimates to domestic U.S. effects, is flawed and inappropriate. Even if they were accurately estimated, which they are not, these global benefit forecasts could not properly and reasonably justify the regulatory costs that the proposed rules would impose on businesses and individuals in the U.S. It is more appropriate and consistent with the purposes of regulatory cost-benefit analyses for federal agencies to consider only the estimated benefits that a proposed rule is expected to have domestically on the U.S. economy and on persons in the United States.[28]

At the same time, while touting the benefits of carbon dioxide reductions, NHTSA avoids claiming that its proposed standards will achieve any specific reduction in global temperatures. That is not surprising. In reality, of course, any actual global temperature reductions that could be expected to follow from compliance with the proposed standards will be immeasurably tiny. Using the UN Climate Panel's model for global average temperature effects, Bjorn Lomborg has shown that if every country in the world achieved its stated EV targets by 2030, the total savings in carbon dioxide emissions would be expected to reduce global temperature by only 0.0002 degree Fahrenheit by the year 2100.[29]

## Conclusion

If climate change poses the danger that the Biden administration claims, such a global environmental challenge requires that society make difficult choices among competing priorities of great significance. In a democracy, those choices are for people to make through their elected representatives after debate and deliberation. They are not for unaccountable bureaucrats to make on the basis of legislative powers that Congress clearly did not intend to delegate.

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[27] *See* https://www.whitehouse.gov/wp-content/uploads/2023/04/DraftCircularA-4.pdf.

[28] Generally, federal agencies are authorized only to promulgate rules that apply domestically, unless the federal statute under which the agency is acting clearly and expressly authorizes the agency to issue rules to achieve benefits outside the territorial reach of the United States. Correspondingly, absent such a clear statutory mandate, the requirement of a regulatory cost-benefit analysis imposed under Executive Order 12,866 and administered by OMB's Office of Information and Regulatory Affairs (OIRA) is properly limited to considering only the benefits the rule is expected to produce for the American people in the U.S.

[29] *See* Bjorn Lomborg, "If Electric Vehicles Are So Great, Why Mandate Them?," *Wall Street Journal* , September 10, 2022, https://www.wsj.com/articles/policies-pushing-electric-vehicles-show-why-few-people-want-one-cars-clean-energy-gasoline-emissions-co2-carbon-electricity-11662746452.

Simply put, the risk of climate change does not justify the risk of departing from statutory text and purpose and from constitutional democratic governance. NHTSA should confine its setting of fuel economy standards to the more modest and less transformational role mandated by Congress under EPCA and let the people decide what sorts of cars to drive.

Thank you for your consideration of these comments.

Respectfully Submitted,

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