

October 16, 2023

The Honorable Ann Carlson
Acting Administrator
National Highway Traffic Safety Administration
United States Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, DC 20590

Re: Comments of Nissan North America, Inc. to "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 ID No. NHTSA-2023-022, RIN 2127-AM55)

Dear Acting Administrator Carlson:

Nissan North America, Inc., on behalf of itself and its parent company, Nissan Motor Co., Ltd. (collectively "Nissan"), submits these comments on the National Highway Traffic Safety Administration's ("NHTSA") proposed rule titled "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 (August 17, 2023) ("Proposed Rule").

Nissan appreciates the Administration's focus on improving fuel efficiency in the U.S. passenger car, light truck, and heavy-duty pickup truck and van ("HDPUV") fleets. However, Nissan believes that technological and economic realities, paired with the other extremely ambitious proposals put forward by the Environmental Protection Agency ("EPA"), Department of Energy ("DOE"), and the California Air Resources Board ("CARB"), combine to create a complicated and unachievable landscape for the automotive industry in the proposed timeframe.

Nissan encourages NHTSA to work collaboratively with the other agencies operating in the automotive regulatory space to develop a unified and realistic set of regulatory requirements that the industry can plan for. Nissan encourages NHTSA to continue its efforts to coordinate the corporate average fuel economy ("CAFE") program with EPA's Federal greenhouse gas ("GHG") emission standards and Criteria Emission standards ("Tier 4"), California Air Resources Board's ("CARB") emission programs (GHG standards and LEV III/IV criteria emission standards), and DOE's petroleum equivalency factor ("PEF").



Manufacturers should be able to design one cohesive fleet that meets all Federal and state standards. Close coordination between these regulatory entities would ensure that manufacturers can focus on developing the cleanest, most fuel efficient, and most affordable vehicles rather than expend excessive resources on compliance with uncertain and unnecessarily fragmented regulatory programs.

I. Background

Nissan is a global automobile manufacturer offering a full line of light-duty vehicles in the U.S. (including full-size pickup trucks and SUVs) and throughout the world, with U.S. sales of over 729,000 vehicles in CY2022. Nissan currently has three manufacturing facilities in the U.S.—Smyrna, TN vehicle assembly plant; Decherd, TN Nissan powertrain plant; and Canton, MS vehicle assembly plant. Nissan also has other facilities throughout the U.S., including Nissan North America's Corporate Headquarters in Franklin, Tennessee, and research centers, regional sales offices, training centers, and financial service offices in various locations. Nissan directly employs more than 21,000 U.S. employees (including 15,000 manufacturing jobs) and creates tens of thousands of additional jobs at U.S. Nissan/Infiniti dealerships.

II. Nissan Ambition 2030 Electrification Strategy

As an early mover, Nissan recognized that the development and widespread adoption of EVs was essential to substantially reducing—and ultimately eliminating—tailpipe emissions, and became a pioneer of EVs. Nissan launched the world's first mass-market EV, the LEAF, in 2010 and to date has sold over 650,000 units of its pure EV LEAF worldwide, with over 5 billion miles driven. Nissan's early commitment and investment into electrification helped to pave the way for EV adoption. Nissan also continues to work with industry coalitions and authorities to develop infrastructure and raise public awareness about the benefits of EVs.

Nissan is committed to continuing this important work. As part of its corporate sustainability efforts, Nissan is fully committed to the long-term reduction of GHGs and improvement of fuel economy, including through the improvement of internal combustion engine ("ICE") technology such as Nissan ePOWER¹, the deployment of additional EVs, the fostering of EV charging infrastructure, and the marketing of EV acceptance to support transformational change in the U.S. light-duty vehicle fleet.

To support these commitments, Nissan originally unveiled its long-term electrification vision, Nissan Ambition 2030, in 2021, and earlier this year bolstered its plan. With a mission to

¹ ePower – Nissan's innovative series hybrid system, which allows the wheels to be fully driven by the electric motor, with the gasoline engine used only to charge the high-output battery when necessary



achieve carbon neutrality across its operations and the life cycle of its products by 2050, Nissan has set ambitious goals to drive towards a cleaner and more sustainable future. Over the next decade, Nissan intends to deliver new and exciting electrified vehicles and technological innovations with the goal of making these mobility options more accessible for everyone, regardless of their background or location. Building on the success of the LEAF, Nissan has introduced the new all-electric model year 2023 ARIYA crossover. Nissan will further accelerate its electrification goals with an estimated 27 new electrified models, including 19 new EVs, globally planned by fiscal year 2030, offering a diverse portfolio of EVs to meet varying customer needs. In the U.S., Nissan aims to achieve a sales mix of EV offerings of 40% by fiscal year 2030. Nissan has already committed significant resources towards its electrification goals, including a \$500 million investment to transform its assembly plant in Canton, MS to become a center for U.S. EV production. All of Nissan's U.S. manufacturing facilities will see new investment as the company accelerates the electrification of its lineup.

Nissan also recognizes the critical importance of battery technology in the continued development and implementation of EVs. Development of All-Solid-State-Batteries ("ASSBs") and related technologies—which are smaller in size, have significantly faster charging times, and lower overall costs—will provide safer, more efficient, and more affordable EVs. Nissan is investing in ASSB research and development in order to make this technology a reality for its customers. In the future, Nissan hopes to launch an EV with ASSBs that have been developed in-house.

To support the successful and widespread adoption of EVs in the U.S., Nissan is committed to partnering with governments, energy providers, and other stakeholders to build a comprehensive EV charging network and to support policies that promote sustainable mobility. Nissan is also working towards development of a battery ecosystem to support decentralized, onsite power generation for buildings with renewable energy sources, and increased collaboration with the energy sector to support the decarbonization of power grids.

Nissan is committed to helping create a carbon neutral society and accelerate the global effort against climate change. While Nissan believes that ambitious fuel economy standards are important to improving our environment and protecting the public, those standards must also be achievable for the regulated industry and must leave room for the broader goal of fleet electrification. The considerations discussed in these comments are critical for ensuring automotive manufacturers and all other implicated market sectors are able to achieve the applicable regulatory standards while also striving towards the Administration's overall electrification goals and ensuring that customer needs and expectations are met. NHTSA's current proposal would divert significant resources towards further technological development of



ICE vehicles, rather than allowing automotive manufacturers to focus on fleet electrification goals.

III. NHTSA inappropriately relies on EVs in developing its baseline and proposed standards

In developing maximum feasible fuel economy standards, NHTSA is statutorily prohibited from considering the fuel economy of electric vehicles. 49 U.S.C. 32902(h)(1). Despite this clear limitation and expression of Congressional intent, NHTSA acknowledges that its baseline calculation and modeling assumptions consider assumed electric vehicle penetration rates both from California's zero emission vehicle ("ZEV") program and EPA's current GHG program. Moreover, NHTSA's baseline and modeling calculations assume full compliance with these programs, including CARB's Advanced Clean Cars II ("ACC II") program. Although California and certain Clean Air Act § 177 states ("Section 177 States") have adopted final regulations for the ACC II beyond MY 2025, California has not yet received a Clean Air Act waiver of preemption from EPA. Unless and until EPA grants such a waiver, NHTSA should not include ACCII in its assumptions. Further, a risk of future market conditions and lack of EV charging infrastructure, especially in non-California states, presents significant uncertainty regarding the long-term success of the program.

Manufacturers have made clear that compliance with ACC II penetration rates will be extremely challenging, with many automakers relying on the use of credits to comply or planning for the payment of civil penalties due to anticipated non-compliance. Despite these concerns that raise serious doubts about whether the industry will actually be able to achieve these penetration rates, NHTSA assumes—without providing any support—full compliance with these regulatory programs, without even accounting for the use of credits. 88 Fed. Reg. 56,176. NHTSA's assumption that manufacturers will meet these penetration rates "fully through the production of new ZEVs" is unrealistic and ignores significant hurdles to ZEV production and consumer adoption. NHTSA asserts that it must consider the EV penetration resulting from these programs in order to demonstrate "reality"; however, the very assumption that these penetration rates will be met (let alone without the use of any credits or payment of fines) is unrealistic. NHTSA also overestimates the number of states that have adopted ACC II and does not account for states that have adopted only certain model years of ACC II, as described in more detail in the comments submitted by the Alliance for Automotive Innovation ("the Alliance"). If NHTSA does decide to account for EVs in its baseline and standard setting assumptions (despite clear statutory restrictions to the contrary), NHTSA must do so with careful consideration.

NHTSA's baseline and proposed standards are also impacted by NHTSA's use of the DOE's proposed new PEF beginning in MY27. Under DOE's proposed new PEF, electric vehicles



would be valued significantly lower in compliance calculations. As a result, NHTSA's decision to utilize the current PEF (which counts EVs significantly higher in compliance calculations) in the baseline but the proposed new PEF (which counts EVs significantly lower) in the standard setting years, only serves to further inflate the baseline upon which the proposed standards are determined while simultaneously making it harder for automakers to comply during the standard setting years.

As a threshold issue, the PEF should not even be a factor in NHTSA's standard setting process, since it is not authorized to consider the fuel economy of alternative fuel vehicles in its standard setting process. Nonetheless, if NHTSA does choose to rely on EVs in its analysis, NHTSA must carefully assess the impact of DOE's proposal on standard setting and compliance feasibility. Further, NHTSA should not rely on a proposed rule in its underlying assumptions for its proposed standards, particularly when that rule is subject to change and, importantly, under re-consideration by DOE itself. Careful analysis is required on the potential impact of the proposed new PEF on the regulated industry and alignment of NHTSA and DOE's programs (along with EPA and CARB) is critical. To properly address alignment issue, NHTSA should defer the use of any change in PEF until after this rulemaking.

NHTSA must show that its proposed fuel economy standards are the maximum feasible *without* considering the fuel economy of electric vehicles. Simply put, once electric vehicles are removed from the modeling, NHTSA's proposed standards are not feasible for ICE vehicles alone.

IV. NHTSA's proposed standards are not the maximum feasible standards

The standards and requirements set out in the proposal are technologically and economically unrealistic, especially when overlaid with the other extremely ambitious GHG, and criteria pollutant proposals put forward by other agencies. Even though NHTSA is statutorily prohibited from considering electrification when setting CAFE standards, NHTSA's fleet baseline and modeling assumes unrealistic EV penetration rates, which ultimately leads to an inflated set of proposed CAFE standards. As outlined in more detail below, NHTSA's reliance on EV penetration rates is premised on unrealistic assumptions about the availability and consumer demand for EVs. NHTSA has not sufficiently considered the significant constraints facing automotive manufacturers in ramping up the production and sale of EVs, including technological limitations (primarily in battery technology), supply chain constraints, limited/unavailable critical minerals supply, lacking energy grid, insufficient charging infrastructure, and significantly lagging consumer demand.



As currently proposed, the stringency rates for the standard setting years are unachievable. The proposal is neither technologically feasible nor economically practicable for ICE vehicles and is fully reliant on the embedded EV penetration rates assumed in NHTSA's modeling. In particular, the ramp-in rates of the proposal are front-loaded and go well beyond established and demonstrated rates of historical ICE improvements that the industry has achieved. Without significant and cost-prohibitive investments in EVs, NHTSA's proposal is not feasible. In reality, NHTSA's proposed standards project significantly higher rates of fuel economy improvement than have been achieved historically. For example, as described in more detail in comments submitted by the Alliance, average historic rates of 2-cycle fuel consumption (gal/mile) of non-EVs improved at an average annual rate of 1.3% for passenger cars and 2.0% for light trucks, as compared to the significantly more aggressive assumption of 2.2% and 2.9% per year, respectively, between the 2022 and 2032 period under NHTSA's projections. These projections are unrealistic, particularly in light of the additional resource constraints automakers will already face due to the need for drastic resource commitments for expansion of EVs.

In particular, NHTSA's assumptions regarding the increased possible rate of improvement for light trucks are misplaced. NHTSA proposes light truck standards that increase at a rate of 4% per year, under the assumption that "light trucks have significantly more opportunity for fuel economy improvements due to lower baseline technology levels and greater average VMT values." 88 Fed. Reg. at 56,259. NHTSA's assumption that light trucks have a lower baseline technology is incorrect—in fact, ICE passenger cars and light trucks have similar levels of technology in both the baseline and standard setting years. As described in more detail in the comments submitted by the Alliance, the main differential between the passenger car and light truck fleets is the degree of electrification. As supported in the analysis submitted by the Alliance, light trucks generally appear to have similar or even higher levels of technology penetration in the baseline than passenger cars, therefore calling into question NHTSA's proposal to require standards that increase twice as fast as those proposed for passenger cars.

In light of these myriad challenges, NHTSA should adjust the standards set forth in the Proposed Rule. Nissan supports a final rule that takes these realities into consideration and seeks ambitious yet achievable targets for fuel economy improvement. Nissan and others in the industry are committed to transforming the industry and have already invested significantly in pressing forward on the transition to EVs. The Proposed Rule goes beyond what is achievable and forces too much too quickly. There simply is not a realistic path to achieve the level of accelerated shift in the proposed timeframe. More time is needed for such extensive and transformational change.

a. NHTSA's proposal is not technologically feasible



In determining maximum feasible fuel economy standards, NHTSA is directed to consider the technological feasibility of its proposed standards. As described above, NHTSA is statutorily prohibited from considering the fuel economy of electric vehicles. Nonetheless, NHTSA has accounted for significant electric vehicle penetration rates in its underlying baseline and modeling for the proposed standards. In doing so, NHTSA has failed to adequately account for the significant real-world constraints that make achieving those assumed rates technologically infeasible. For example, NHTSA ignores significant challenges faced by the industry in obtaining necessary critical minerals and manufacturing capabilities, as well as insufficient consumer demand and supporting infrastructure.

Nissan understands the critical importance of battery performance to achieving overall electrification goals. As a result, Nissan has committed to significant investments in research and development of state-of-the-art battery technology, including a focus on development and implementation of ASSBs in future EV offerings. Thanks to the leadership and early investment of Nissan, the EV market has steadily grown over the last 10 years, albeit slower than many expected. Transitioning from long-existing and established technology takes time and significant financial investment. This responsibility must be shared among the industry, its customers, and governmental entities. Widespread adoption of EVs requires not only that the automotive industry broadly embrace investment in this technology, but also that consumers show willingness to adopt the new technology. Nissan has invested billions of dollars in an effort to stimulate growth, not only investing in technology and product development but also in infrastructure and consumer outreach/education. Nissan strongly supports federal, state, and local investment in market measures to complement the efforts already in place by industry leaders such as Nissan to further encourage this shift towards EVs.

NHTSA's proposed standards lose sight of the transformational change that is needed from all sectors of the U.S. economy. Automobile manufacturers such as Nissan have and will continue to make significant investments to push the industry forward; however, such drastic and front-loaded timelines would require significant changes and investments from suppliers, energy providers, mineral extraction and processing industries, battery and charging equipment manufacturers, etc. Such drastic changes to the market are nearly impossible on such a compressed timeline, particularly given the current market constraints affecting nearly all impacted sectors, such as supply-chain complications and limited availability of raw materials. This is especially true with respect to the critical minerals that are essential to battery production for EV expansion and development. NHTSA has not demonstrated that the infrastructure, materials, and critical minerals needed to meet the estimated baseline and resulting proposed standards are available. Significant cooperation and organization from federal, state, and local governments will also be required to facilitate the roll-out and adoption of EVs and related charging infrastructure.



Beyond the significant market and governmental challenges posed by such a drastic implementation timeline, consumer adoption will be critical to success. Consumer adoption of EVs has historically lagged behind expectations, leaving a significant hurdle to encourage a large and swift shift to EVs. Consumers not only need to be convinced of the appeal, safety, affordability, and reliability of EVs themselves, but also they need to invest in and adopt the necessary community and home charging equipment to facilitate their use. Consumers will need to adapt their trip planning and driving behavior to allow for vehicle charging needs. The only way to drive these significant changes is to assure consumers that charging infrastructure is available and reliable, as well as accessible and affordable for all communities. This is simply not a reality today and is unlikely to be a reality in time to drive such a significant shift within the timeline of the Proposed Rule. These challenges are magnified due to the unclear and uncertain benefits under the Inflation Reduction Act, which place significant limitations on EV consumer incentive programs and charging infrastructure programs.

b. NHTSA's proposal is not economically practicable

Nissan has continued to improve ICE vehicle technologies and steadily improve fuel economy within its fleet. The Proposed Rule would force significant financial investments, including research and development resources, towards ICE technologies, thereby diverting these limited resources that are critical to achieving the Administration's aggressive electrification goals. NHTSA should encourage and allow manufacturers to invest their available resources towards the ultimate goal of transitioning to EVs, which will help the U.S. achieve substantial fuel savings as well as mitigating vehicle pollutant emissions.

Many consumers are reluctant or unable to purchase EVs due to their significant price premium. The Proposed Rule will only exacerbate these inequalities, with EV prices likely to increase even more due to extreme investments required by all market sectors involved. Driving too much change too quickly will shut out many communities who need fuel efficient and clean vehicles the most. It also will likely force consumers who are uncertain about EV adoption to continue to operate aging ICE vehicles much longer. This is contrary to the intent of the proposal.

Nissan encourages NHTSA to revise its proposed standard in order to prioritize President Biden's ultimate goal of electrification of the U.S. fleet, and allow manufacturers to focus their resources on developing and rolling out safe, reliable, and affordable EVs.



V. Compliance flexibilities should be extended

Nissan supports the maintenance and expansion of compliance flexibilities for manufacturers under the CAFE programs. The automotive industry development cycle is planned several years in advance, and manufacturers have already accounted for these credits in their fleet planning. Given the myriad supply chain issues, unreliable critical mineral availability, manufacturing constraints, and lagging consumer demand, among other challenges and uncertainties affecting the automotive industry, compliance flexibilities are critical for withstanding the current challenges facing the industry and for ensuring that manufacturers can continue to invest in achieving fuel economy improvements and developing EV and other clean technologies. Some of the key flexibilities that Nissan encourages NHTSA to consider are discussed below.

Air Conditioning (A/C) Efficiency and Off-Cycle Credits. A/C efficiency credits and off-cycle fuel consumption improvement values (FCIVs) are an important source of emissions reductions, which cannot be measured properly on 2-cycle testing. These credits have been an important part of CAFE compliance planning since 2017 and represent concrete improvements in fuel consumption that manufacturers have worked hard to achieve. Reducing or removing the credits available for such improvements would be disruptive to product planning and would discourage further innovation. NHTSA should continue to recognize these real-world achievements and should allow continued use of these credits to further incentivize increasing efficient and advanced technologies through model year 2032 and beyond.

CAFE Credit Trading and Transfer Rules. Consistent with the proposal set forth in the comments submitted by the Alliance, Nissan proposes that NHTSA interpret the statutory cap on credit transfers as consistent with its approach to adjusting credits when they are transferred to preserve oil savings beginning in MY25. This interpretation is aligned with NHTSA's treatment of the statutory cap requirement in the context of the credit trading program when credits are transferred. Such an interpretation is also consistent with the overall energy-savings intent of the statute and would serve to increase alignment between NHTSA's and EPA's approaches to credit transfers. As described below in Section VII, maximizing alignment and coordination between the regulatory programs is critical to automakers compliance capabilities.

VI. MDPCS

Nissan supports NHTSA's proposal to retain the 1.9 percent offset at minimum to the Minimum Domestic Passenger Car Standard (MDPCS) to account for projection errors in estimating the total passenger car fleet fuel economy. Historically, this offset was applied to account for consumer demand shifts and the difficulty in predicting passenger car footprint trends, including the fact that NHTSA's and EPA's passenger car vehicle footprint and production volume



estimates have historically underestimated the production of larger passenger cars. Nissan agrees with NHTSA that the historic reasoning for applying the MDPCS offset still applies for the MY 2027-2032 period. 88 Fed. Reg. 56,312. Additionally, as NHTSA notes, manufacturers struggling to meet an unadjusted MDPCS may choose to import passenger cars rather than manufacture them in the United States. *Id*.

VII. Continued Support for a Coordinated National Approach

Nissan appreciates the opportunity to comment on the Proposed Rule. Nissan strongly encourages NHTSA, EPA, and CARB to develop a coordinated and reasonable national approach to automotive regulation. A patchwork of different and unachievable federal and state fuel economy, GHG, and criteria pollutant programs is neither effective nor efficient. In contrast, a coordinated national program maximizes fuel economy, GHG, and criteria pollutant benefits on a nationwide basis while also providing regulatory certainty and minimizing unnecessary compliance burdens for the industry. Such an approach would allow automakers to develop a single, unified fleet that meets all federal and state requirements while maintaining a full range of vehicle options for consumers. More importantly, a coordinated approach also would allow manufacturers to focus their planning and investments on achieving fuel economy improvements and emissions reductions rather than on tracking compliance with unnecessarily fragmented regulatory standards and programs. Under a coordinated approach, environmental benefits can be achieved at a lower cost to manufacturers and consequently a lower cost to consumers. Lower costs will help address social equity concerns related to EV accessibility and also encourage faster fleet turnover, replacing older vehicles with more efficient, cleaner, and safer vehicles.

Nissan also encourages NHTSA to work with EPA, DOE, and CARB to develop proposals that are realistic and reasonable. The current proposed rules are unachievable for the industry, particularly when they are overlaid together. Overall projected industry compliance levels should be considered in whether the proposals are realistic—automakers should not be forced to pay civil penalties for failing to comply with regulatory programs that were clearly unachievable from their inception. While automakers like Nissan are invested in facilitating the transition to electric vehicles, this transition must be managed at a pace that is safe, practical, and realistic. Forcing change too quickly risks the opposite effect – consumers could become wary and reject electric vehicles if the inventory and requisite infrastructure to support these vehicles are not in place.

As NHTSA and EPA consider potential changes to the federal fuel economy, GHG, and criteria pollutant programs, Nissan believes it is essential that the agencies work together to maximize compatibility and coordination of the programs. Nissan understands that, due to statutory



limitations, certain programmatic elements of the CAFE and GHG programs may not be identical. Nissan encourages NHTSA and EPA to make the standards as equivalent and complementary as possible, however, by adopting appropriate regulatory adjustments where available. Nissan also encourages NHTSA to coordinate with DOE regarding DOE's proposal for a permanent petroleum equivalency factor ("PEF") for use in calculating petroleum-equivalent fuel economy values of EVs in the CAFE program, to the extent those vehicles are considered by NHTSA.

VIII. Endorsement of Comments from the Alliance for Automotive Innovation

As a member of the Alliance, Nissan fully endorses the comments on the Proposed Rule submitted separately by the Alliance. In particular, Nissan highlights several points from the Alliance's comments, including:

- Alignment of CAFE standards to technologically and economically feasible EPA
 GHG standards is critical to an accelerated transition to electric vehicles
- NHTSA's proposed standards are improperly predicated on alternative fuel vehicles
- NHTSA's proposed standards exceed technological feasibility and economic practicability
- o NHTSA presumes an economically impracticable increase in ICE fuel economy in combination with a rapid transition to electric vehicles
- o A/C efficiency and off-cycle fuel consumption improvement programs remain important and applicable to both ICE and electric vehicles
- o NHTSA should address credit transfer caps

Nissan appreciates the opportunity to comment on the Proposed Rule. Nissan is fully committed to the long-term fuel efficiency and electrification goals of this Administration and to remaining a leader in the drive towards a cleaner future. Nissan encourages NHTSA to work closely with EPA, CARB, and DOE to provide regulatory certainty and harmony among the relevant federal and state programs. While Nissan understands and supports the Administration's efforts to push for improvements in fuel efficiency, the current proposal goes well beyond what is feasible for the industry in the timeframe proposed. The current proposal is not achievable for numerous reasons, including technology and resource limitations, limited availability of safe and responsibly-sourced critical minerals, supply chain and manufacturing constraints, insufficient charging and energy infrastructure, and significantly lagging consumer adoption, among other reasons. In order to allow the automotive industry to safely, affordably, and successfully achieve



fuel efficiency improvements with the ultimate goal of electrification, the proposal must be modified to take these factors into consideration.

Respectfully Submitted,

John McDonald

John McDonald

Director

Regulatory Affairs