

**EPN Comments on Revised 2023 and Later Model Year
Light-Duty Vehicle Greenhouse Gas Emissions Standards**

September 24, 2021

The Environmental Protection Network (EPN) is an organization of more than 550 U.S. Environmental Protection Agency (EPA) alumni volunteering their time to protect the integrity of EPA, human health, and the environment. We thank EPA for the opportunity to provide these written comments on its proposed standards for emissions of greenhouse gases (GHGs) from passenger cars and light trucks, for Model Years (MYs) 2023 through 2026.¹

I. Introduction

This proposal covers a limited number of near-term MYs, but it must be evaluated in the context of the overwhelming need for a transition to zero-emissions technologies for these vehicles. EPA's goal should be the sale of near-100% zero-emissions cars and light trucks by MY 2035. Section II describes the compelling need for achieving this goal, given the current understanding of the increasing threats presented by emissions of GHGs and criteria pollutants from vehicles powered by fossil fuels. Achieving the GHG and criteria emissions reductions from this kind of transformation would achieve very substantial benefits to the public's health and welfare, and especially for those segments of society at risk for the greatest harms from climate change and criteria air pollution. Section II also discusses the confluence of several critical trends that show this goal is both practical and achievable.

Section III discusses how this proposal fits with the longer-term goal. EPN recognizes that this proposal covers just MYs 2023 through 2026, and that most of the necessary transformation to zero-emissions technology will occur after these model years. Therefore, the most important way to judge this proposal is by asking whether it provides the most appropriate foundation for adopting and implementing the longer-term strategy discussed in Section II, and whether it takes the most appropriate steps in these four MYs to make the most progress possible towards this longer-term goal.

While the standards proposed for these MYs would promote a real increase in zero-emissions vehicles from current levels, it is at best modest progress towards 50% electric power by MY 2030 and near 100% electric power by MY 2035. As we will discuss in Section II, there is no time to lose given the dire need to reduce GHGs from the transportation sector as part of addressing climate change and the compelling need for large reductions in nitrogen oxides (NO_x) and particulate matter (PM). The proposal should be seen as the minimum level of progress needed to lay a strong foundation for reaching the longer-term goals. EPA should seriously consider ways to strengthen the combination of standards and flexibilities so that greater progress is made in these four MYs

¹ 86 FR 43726 (August 10, 2021)

towards zero-emissions cars and light trucks. Any changes to the proposal should be in the direction of increased stringency and greater progress to electric power.

II. EPA Must Promulgate a Post-2026 Rule Requiring Near-100% Zero Emissions Vehicle Sales by 2035

EPN is pleased that EPA framed the proposed MY 2023-2026 standards as “a critical building block for a comprehensive, multipollutant longer-term regulatory program...[with]...a strong potential for dramatic reductions in GHG and criteria pollutant emissions over the longer term.”² EPN strongly recommends that the agency follow through with an unequivocal commitment to make promulgation of a post-MY 2026 rulemaking requiring near-100% zero emissions vehicle sales by MY 2035 its top mobile source priority over the next two years.

A. The Climate Emergency Alarms are Deafening

The recent report by 234 of the world’s top climate scientists for the Intergovernmental Panel on Climate Change (IPCC)—declaring a “Code Red for Humanity”—is the most recent and powerful declaration of our existential climate crisis.³ As summarized by United Nations Secretary-General Antonio Guterres, “the alarm bells are deafening, and the evidence is irrefutable.”⁴ In every corner of our country—devastating hurricanes in the southeast, massive droughts and wildfires in the west, unthinkable temperature extremes in the northwest, and more intense storms and floods in the northeast and midwest—we are seeing clear consequences of the climate crisis far faster than predicted just a few years ago. If the global community fails to “move fast and move big” to reduce GHG emissions, the tragic impacts from today’s 1.1 °C average global temperature rise will be dwarfed by a future 2 or 3 °C average rise. Accordingly, the Paris Climate Agreement established a goal of keeping the average global temperature rise to well below 2 °C, while urging efforts to limit the increase to 1.5 °C.⁵

B. EPN Applauds the Biden Administration’s Initial Proposals to Address the Climate Crisis

On inauguration day, the president rejoined the Paris Climate Agreement,⁶ just two months after the previous administration had formally withdrawn. On January 27th, the president issued an Executive Order that, among other things, set a goal of a carbon-free electricity sector no later than 2035.⁷ On April 22nd, Earth Day, President Biden hosted the Leaders Summit on Climate where he announced a new target for the U.S. to achieve a 50-52% reduction from 2005 levels in economy-wide net GHG emissions in 2030. This target will be

² 86 FR 43726 (August 10, 2021).

³ IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

⁴ United Nations, [Secretary-General Calls Latest IPCC Climate Report ‘Code Red for Humanity’, Stressing ‘Irrefutable’ Evidence of Human Influence | Meetings Coverage and Press Releases \(un.org\)](#), August 9, 2021.

⁵ United Nations Climate Change, [The Paris Agreement | UNFCCC](#)

⁶ [Paris Climate Agreement | The White House](#), January 20, 2021.

⁷ [Executive Order on Tackling the Climate Crisis at Home and Abroad | The White House](#), January 27, 2021.

formally submitted to the United Nations Framework Convention on Climate Change later this year as the first step toward reaching net zero economy-wide GHG emissions by no later than 2050.⁸ On August 5th, the president set a goal that 50% of new cars and light trucks sold in 2030 be zero-emissions vehicles, putting the U.S. on track to reduce GHG emissions from new-car and light-truck sales by more than 60% in 2030, relative to 2020.⁹ The administration's two infrastructure proposals include funding for a wide range of important climate initiatives.

Transportation is the largest U.S. GHG-emitting sector. Cars and light trucks are responsible for well over half of overall domestic transportation GHG emissions, and it takes about 15 years to turn over the U.S. car and light-truck fleet to new vehicles. Accordingly, achieving the dual economy-wide Biden administration climate goals of a 50-52% GHG reduction from 2005 levels in 2030 and net zero GHG emissions by no later than 2050 requires a bold transformation of new-car and light-truck sales from fossil fuels to zero-emissions technologies by 2035, and in-use car and light-truck fleet to zero-emissions technologies by 2050.

C. 135 million Americans Continue to Suffer from High Air Pollution Levels

Non-GHG air pollution continues to be a major problem in much of the country. The most intractable air pollutants are ground-level ozone and fine PM, both of which can cause a wide range of lung and heart conditions, such as asthma, bronchitis, and heart disease, which can contribute to premature death. Researchers estimate that fine particulate alone is responsible for nearly 48,000 premature deaths in the United States every year.¹⁰ Recent research shows that exposure to elevated levels of air pollution is linked to worse health outcomes from COVID-19, including higher death rates.^{11,12}

According to the American Lung Association's annual "State of the Air" report, about 40% of Americans—more than 135 million people—live in the 217 counties across the nation with unhealthy levels of ozone, short-term particle pollution, or year-round particle pollution.¹³ Around 20.7 million people, or 6.3% of Americans, live in the 13 counties that have unhealthy levels for all three pollutants.

The burden of living with unhealthy air is not shared equally, of course. Of the 20.7 million people who lived in counties with unhealthy levels of ozone, short-term particle pollution,

⁸ [FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies | The White House](#), April 22, 2021.

⁹ [FACT SHEET: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks | The White House](#), August 5, 2021.

¹⁰ U.S. EPA., Integrated Science Assessment for Particulate Matter, EPA/600/R-19/188, Section 11.1, December 2019.

¹¹ Wu X, Nethery RC, Sabath MB, Braun, Dominici F. Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. *Sci Adv.* 2020; 6(4):eabd4049.

¹² Pozzer A, Dominici F, Haines A, Witt C, Munzel T, Lelieveld J. Regional and global contributions of air pollution to risk of death from COVID-19. *Cardio Res.* 2020; 116:2247-2253.

¹³ [State of the Air | American Lung Association](#), 2021.

and year-round particle pollution, 14 million are people of color. People of color were 61% more likely than white people to live in a county with a failing grade for at least one pollutant, and over three times as likely to live in a county with a failing grade for all three pollutants.

Cars and light trucks (and heavy-duty trucks and buses) are major emitters of ozone precursors (volatile organic compounds and NO_x) and fine PM (carbon soot and NO_x that form particles in the atmosphere). Transportation-related emissions often disproportionately affect vulnerable communities that are in close proximity to urban freeways and oil refineries.

D. Electrification Revolution Offers a Practical Pathway to Zero-Emissions Vehicles

The two leading zero-emissions technologies for car and light-truck applications are battery electric vehicles and hydrogen fuel cell vehicles. Since these technologies emit no tailpipe pollution, life-cycle GHG and criteria emissions are dominated by the emissions associated with the production and distribution of electricity and hydrogen (of course, there are emissions associated with vehicle manufacturing and disposal as well, as with gasoline and diesel vehicles).

Until recently, many believed that there were too many obstacles to battery electric and hydrogen fuel cell vehicles being viewed as a widespread zero-emissions solution.

EPN believes that this is no longer the case, that we are now on the cusp of an “electrification revolution,” and that battery electric vehicles (hereafter EVs) now offer a practical and economic pathway to zero-emissions for new cars and light trucks over the next 15 years and for the in-use car and light-truck fleet over the next 30 years. This shift is due to three key trends that have completely upended past skepticism about EVs.

One key trend is that widespread decarbonization of the U.S. electricity sector in the next 20 years now appears to be a near certainty. Historically, fossil fuels have been the primary feedstocks for electricity generation in most parts of the U.S. (with some regional exceptions). As long as the electric system is powered primarily by fossil fuels, EVs are not true zero-emissions vehicles, due to fuel production/distribution GHG and criteria emissions. For example, in most regions of the U.S. today, EVs typically yield about a 50-75% reduction in tailpipe plus fuel production/distribution GHG emissions, relative to a similar gasoline vehicle, depending on the electricity sector fossil fuel market share. Accordingly, today EVs are still responsible for 25-50% of comparable gasoline plus fuel production/distribution GHG emissions, plus fine PM, NO_x, and other criteria pollutants as well. But the GHG and criteria emissions footprints of EVs are going to rapidly change as the U.S. electricity sector is decarbonized.

Costs of solar and wind power have plummeted over the last decade—utility-scale solar photovoltaic (PV) costs have plummeted by 85% since 2010, and onshore wind costs have

declined by 56%.¹⁴ The International Energy Agency has famously stated that, in many places, “solar PV is now the cheapest source of electricity in history.”¹⁵ The U.S. Energy Information Administration reports that fully 81% of new U.S. electricity generating capacity in 2021 will be solar, wind, and batteries (which are almost exclusively paired with wind and solar to accommodate their intermittency).¹⁶ Industry experts expect solar and wind (and batteries) to continue to benefit from innovation and scale-related cost reduction in the future.

In addition to the Biden administration’s pledge to achieve a carbon-free electric sector by 2035, many U.S. states have adopted aggressive requirements or targets to decarbonize electric utilities, and many utilities have made voluntary commitments, often going farther and faster than state requirements. The widespread trend toward electric sector decarbonization means that, by 2035, an EV will be essentially a zero-emissions vehicle in terms of tailpipe plus fuel production/distribution GHG and criteria emissions.

A second key trend is the plummeting cost of batteries. A decade ago, the conventional wisdom was that the true cost to produce an EV was tens of thousands of dollars more than a comparable gasoline car, primarily due to the cost of large battery packs and poor economies of scale. This was the single biggest obstacle to mainstream acceptance of EVs.

Battery innovation and economies of scale have led to a near-90% reduction in lithium-ion battery costs in the last decade.¹⁷ EVs that once had cost premiums, relative to their gasoline counterparts, of tens of thousands of dollars are now typically \$5,000 or \$10,000 more expensive. Given the lower fuel and maintenance costs associated with EVs, a consumer who buys an EV today and drives it for many years will frequently realize a lower overall cost of ownership, but the upfront EV cost premium is still often cited as a major reason why many consumers do not seriously consider an EV purchase.

This economic calculus is also changing. With battery prices continuing to drop due to innovation and scale and gasoline vehicles getting more expensive, there is a consensus that EVs will become cost competitive with gasoline cars in the next few years. Subsequently, EVs are expected to become lower in cost than their gasoline counterparts, due to simpler designs and fewer moving parts. Then the economic proposition becomes incredibly appealing to consumers—an EV will have both a lower purchase price and be cheaper to fuel and maintain.

Better and cheaper batteries have also allowed automakers to increase EV range. A decade ago, EV range was often on the order of 100 miles. Now, most EVs have ranges between

¹⁴ [Renewable Power Generation Costs 2020 \(irena.org\)](https://irena.org/Newsroom/Press-releases/2021/02/01/irena-renewable-power-generation-costs-2020), International Renewable Energy Agency, 2021.

¹⁵ [Outlook for electricity – World Energy Outlook 2020 – Analysis - IEA](https://www.iea.org/press-releases/2020/02/02/iea-outlook-for-electricity-2020), International Energy Agency, 2020.

¹⁶ [Renewables account for most new U.S. electricity generating capacity in 2021 - Today in Energy - U.S. Energy Information Administration \(EIA\)](https://www.eia.gov/analysis/industry/2021/01/11/renewables-account-for-most-new-u.s.-electricity-generating-capacity-in-2021), January 11, 2021.

¹⁷ [MIT study shows plunge in lithium-ion battery cost over the last 10 years | TechSpot](https://www.techspot.com/news/61113-mit-study-shows-plunge-in-lithium-ion-battery-cost-over-the-last-10-years.html), March 25, 2021.

200 and 300 miles. While such EV ranges are still less than the typical highway range for gasoline cars, they are more than sufficient for most drivers who typically travel 20-50 miles per day and for others who have convenient charging access in their home garages or workplaces. Higher EV ranges are possible, of course, but there is a tradeoff between vehicle range and cost, and automakers will likely offer multiple battery sizes and costs, allowing consumers to choose the best package for their circumstances.

A third key trend is the recognition by many automakers that EVs represent the industry's future. This is a fundamental change from a decade ago when EVs were viewed as niche vehicles with little chance of widespread utility or appeal. In its Notice of Proposed Rulemaking (NPRM), the agency pointed out that there are already about 60 EV/plug-in hybrid electric vehicle (PHEV) models for sale in the U.S., and that this is expected to grow to about 80 models by 2023.¹⁸ Automakers have publicly pledged to spend over \$200 billion in the next few years on electrification research, vehicle design, and assembly and battery plants. General Motors has an aspirational goal to achieve 100% zero-emissions vehicle sales in the U.S. by 2035,¹⁹ and Ford is bringing the F-150 Lightning EV pick-up truck to market in 2022 at a \$40,000 base price point that will make it competitive with gasoline versions of the best-selling vehicle in the U.S. market.²⁰

EPN cannot speak on behalf of the industry, of course, but there is mounting evidence that many automakers are convinced that EVs are the future of the industry for multiple reasons: they will be higher-quality designs that consumers will prefer, they will be simpler and cheaper to build, and they will be required by countries fulfilling their commitments to the Paris Climate Agreement to protect the planet and public health. This apparent belief by multiple major automakers that there is an attractive powertrain technology ready to replace fossil fueled internal combustion engines is unprecedented in the century-plus history of the automobile industry.

E. We Will Only Achieve Near-100% New Zero-Emissions Vehicles by 2035 if EPA Requires It

EPN stipulates that, for several reasons, a fast transition to EVs will not be simple or easy. Examples of fast consumer product transitions typically involve innovations with no or minimal tradeoffs, for example, the change from landlines and “flip” cell phones to smartphones, where the latter was a clearly superior product in every way.

EVs offer many important advantages over gasoline vehicles: zero GHG and criteria pollution, lower and more predictable fuel and maintenance costs, the convenience of home refueling for many homeowners, and in the near future the likelihood of lower vehicle prices.

¹⁸ 86 FR 43726 (August 10, 2021).

¹⁹ [General Motors Intends to Lead the Auto Industry and the World to a Net-Zero-Carbon Future \(linkedin.com\)](#), Mary Barra, CEO, General Motors, January 28, 2021.

²⁰ [Ford prices electric F-150 Lightning pickup from \\$40,000 to \\$90,000 \(cnbc.com\)](#), May 20, 2021.

But EVs are not superior in every way, and at least for the foreseeable future, EVs will entail some disadvantages as well: range between refueling will be shorter and they will take longer to recharge (not so important with overnight home charging, but a meaningful drawback in the middle of a long highway trip), access to public refueling stations may be more limited than to gasoline stations (at least initially), and certain types of driving, such as boat towing or steep road grades, may require additional technology and cost.

It is well accepted in the economics literature that many consumers are risk averse, especially with large expenditures. It is easy to stick with what you know and let others be the “guinea pigs” for a new technology.

Some automakers may choose to delay their transition to EVs as long as possible, in the hopes of “milking as much profit” as they can from their existing gasoline vehicle designs and engine/transmission/assembly plants.

Finally, EPN agrees with statements by some individual automakers and the Alliance for Automotive Innovation that there is a critical need for complementary federal policies to support a fast transition to EVs in at least three areas: the extension of federal tax credits/rebates for consumers who are willing to buy EVs in the next few years, the build-out of a nationwide public refueling infrastructure, and a modernized and more sophisticated electric grid to support widespread EV use. The Biden administration infrastructure bills include all these critical components, which are currently being debated in Congress. None of these programs would fall under the purview of EPA, of course.

F. The Justification for a Strong MY 2027-2035 Rule

EPA, by promulgating a post-MY 2026 rulemaking requiring near-100% zero-emissions vehicle sales by MY 2035, can play a critical role in facilitating a fast EV transition. There are several compelling justifications for such a strong rule.

One, a fast transition to EVs would yield massive societal benefits. The Environmental Defense Fund (EDF) has projected that a transformation of the new-car and light-truck market to 100% EVs by 2035 would yield net societal benefits of \$88 billion in calendar year 2040 and \$112 billion in calendar year 2050, with cumulative net societal benefits through 2050 of \$1.6 trillion.²¹ The societal benefits are about equally split between monetary savings to consumers and health and environmental benefits.

EDF projects that consumers would benefit from new EVs being slightly less expensive to purchase and maintain beginning in 2027, and from large fuel savings due to the much lower cost of electricity per mile relative to gasoline. Owners who buy and retain a typical new model year 2035 vehicle for its full useful life would realize lifetime savings of about \$8,200 relative to a comparable gasoline vehicle.

²¹ Clean Cars, Clean Air, Consumer Savings: 100% New Zero Emission Vehicle Sales by 2035 Will Deliver Extensive Economic, Health, and Environmental Benefits to All Americans, Environmental Defense Fund, January 2021.

EDF projects that GHG emissions would be reduced by 600 million metric tons (MMT) in 2040 and nearly 900 MMT in 2050, with cumulative GHG savings through 2050 of 11.5 billion metric tons. Through 2050, the projected cumulative criteria emissions reductions are 5.5 million tons of NO_x, 5.3 million tons of volatile organic compounds, and 390,000 tons of fine PM. Using EPA's own screening and mapping tool, EDF projects that the PM savings alone would avert between 43,000 and 99,000 cumulative premature deaths through 2050. These emissions benefits would be especially valuable to vulnerable communities who are the most at risk to high pollution levels from urban freeways and oil refineries, as well as to climate-related extreme weather events.

Two, fully half of the societal benefits described above are environmental and public health benefits derived from emissions reductions that are classic textbook examples of market externalities where the societal benefits can only be accounted for through governmental regulation.

Three, as discussed above, it seems increasingly apparent that there are some automakers who want to be leaders in a fast EV transition. In the absence of regulation, however, those automakers may be wary of "getting out in front of the market" while their competitors try to delay the transition as long as possible in order to maximize profits from past investments in existing gasoline vehicle designs and engine/transmission/assembly plants. A strong regulation can provide critical regulatory certainty and a level playing field for those automakers who want to be leaders without worrying that others may drag their feet.

Finally, the most compelling justification for a near-100% EV sales requirement in 2035 is simply that we have no more time to waste. We are facing a global climate emergency, and we must commit to a zero-emissions vehicle future over the next decade if we are to protect ourselves, the planet, and future generations from increasingly severe climate-related tragedies.

EPN stipulates that a fast transition to EVs will be a very big deal for consumers and automakers alike, and EPN understands that the agency will be criticized by many for going too fast. But EPA simply must act to protect the planet and public health, and for the first time, the agency can show that there is a practical and cost-effective technological pathway for doing so, with at least some automakers likely willing to support a regulatory requirement with sufficient lead time.

EPN strongly believes that anything short of a near-100% zero-emissions requirement in model year 2035—e.g., a rule that only goes through model year 2030—would miss the best opportunity the agency has ever had, and may ever have, to define a zero emissions future, and would allow those automakers who do not want to lead to continue to stall and make it harder for those automakers who do.

EPA has a critical decision to make—its post-2026 rule will either define a clear path to a zero-emissions car and light-truck future by 2035 or it won't. EPN implores the agency to have the courage of its convictions and do what we all know must be done to protect the planet and public health for future generations.

III. How This Proposal Furthers the Administration's Stated Long-Term Climate Goals

A. The proposal makes the minimum progress needed to lay a strong foundation for reaching the longer-term electrification goals, and EPA should consider strengthening it to make greater progress.

As discussed in Section II, EPN strongly believes it is critically important that EPA adopt longer-term standards calling for almost all new passenger cars and light trucks to be electric powered by MY 2035. President Biden's August 5, 2021, Executive Order calls for America to lead the world on clean and efficient cars and trucks and sets a goal of 50% of new cars and light trucks to be electric powered by MY 2030. To implement this the Executive Order calls for EPA to conduct a longer-term rulemaking for MY 2027 and later to be finalized by July 2024.

This proposal is limited to the four MYs preceding MY 2027, making it a relatively limited and near-term set of standards. However, this rulemaking lays the groundwork for the critically important longer-term rulemaking addressed in the Executive Order. Given the need for strong longer-term standards, the most important way to judge this proposal is by asking whether it provides the most appropriate foundation for adopting and implementing the longer-term strategy discussed above. Does this rulemaking take the most appropriate steps in these four MYs and make the most progress possible towards this longer-term goal?

As discussed in Section II, there is no time to lose given the dire need to reduce GHGs from the transportation sector as part of addressing climate change, and the compelling need for large reductions in NOx and PM. There is a relatively short time span to work with.

Reaching 50% electric power by MY 2030 and near 100% by MY 2035 will require strong progress through MY 2026 and establishment of a strong foundation for progress after MY 2026.

B. Proposed Standards and Flexibilities

The NPRM's analysis shows the combination of proposed standards and flexibilities are projected to result in about 8% EVs/PHEVs for MY 2026.²² While this is a real increase from current levels, it is at best modest progress towards 50% electric power by MY 2030 and near 100% electric power by MY 2035. The proposal should be seen as the minimum level of progress needed to lay a strong foundation for reaching the longer-term goals. EPA should seriously consider ways to strengthen the combination of standards and flexibilities so that greater progress is made in these four model years towards electric power for cars

²² See Tables 40-42, 86 FR 43726, 43775 (August 10, 2021).

and light trucks. Any changes to the proposal should be in the direction of increased stringency and greater progress to electric power, not less stringency and less progress.

C. Flexibilities

EPA proposes to extend the use of multipliers for electric powered vehicles beyond that currently allowed, along with a cap on the amount of benefit that can be derived from this extension. EPA also recognizes that this extension reduces the overall GHG reductions that otherwise would be achieved by these standards, possibly reducing the percentage of electric vehicles that otherwise would be produced.

EPN recognizes that, conceptually, multipliers for electric power vehicles are important incentives for early progress in transitioning to electric power. EPN also recognizes that for automakers who are already committed to significant EV production, multipliers will reduce the number of EVs that they must sell, while for automakers who are not committed to significant EV sales, multipliers could increase EV sales. The net effect is not clear from EPA's discussion.

But it is also clear that EV multipliers are not a long-term solution. They need to terminate as the technology becomes more mainstream. EPA's proposal does not present a compelling justification for this extension.

Given the short time frame between now and MYs 2030 and 2035, the progress to date on electrification, and the stated public plans of many manufacturers to significantly expand their offerings and ramp up production of electric powered vehicles, EPA should seriously reconsider its proposed extension of EV multipliers. EPA has not shown that this extension is the optimum approach to lay a strong foundation and make strong progress to the longer-term electrification goals for MYs 2030 and 2035. EPA should reconsider this proposal given its impact on the long-term goals for the light-duty sector and the lack of a compelling justification for its inclusion. EPA should consider revising this proposal to make more progress to electrification and should not consider extending the multipliers even further than proposed.

EPN recommends that EPA base its decision on EV multipliers on whether it believes that the multipliers will increase EV sales in the MY 2023 to 2035 timeframe, and if the agency does believe this, that it provide an analysis to support that projection.

EPA also proposes a variety of other provisions to the flexibilities provided to manufacturers, ranging from changes to the off-cycle credit provision to extensions of credit life for certain credits. As with all issues for the proposal, the way to analyze these proposed changes is to ask whether they are needed and important for achieving the MY 2030 and 2035 electrification goal, or whether they hinder or delay reaching that goal. EPA should explicitly evaluate these proposed changes in that light and explain any decisions in those terms. As with the standards and other flexibilities, any changes from the proposal should be

to increase the overall stringency of the program, not to relax it. The proposal is already the bare minimum level needed considering the longer-term goals.

D. Analysis of electrification

1. Battery— cost, range, etc. This analysis appears appropriate. As part of laying a foundation for the future MYs, it is important to discuss expected future progress as well.
2. Charging and Other Infrastructure. This rulemaking needs to lay a solid groundwork for a following, longer-term rulemaking covering the increasingly broad-based and widespread transition to electric power in MYs after 2026. Therefore, issues such as battery technology, range, and cost; charging technology and infrastructure; and other issues such as electricity grid developments all need to be addressed in this rulemaking. Charging technology and infrastructure is also a critical issue for environmental justice communities.
3. EPA has addressed some areas in detail, such as issues related to battery technology, range, and cost. However, the proposal only gives limited attention to the key issues concerning charging technology and infrastructure, as well as electricity grid developments.
4. Recognizing that these issues are of much greater importance in the rulemaking for MY 2027 and later, to the extent practicable, EPA should provide a more in-depth discussion of these issues in this rulemaking as part of laying the groundwork for the later successful transition to widespread electrification of cars and light trucks.

E. Lead Time

The proposal provides a clear and compelling discussion showing the lead time for the MY 2023 to 2026 standards is appropriate. EPA discusses the long lead time provided when standards were originally adopted in 2012; the widespread availability of vehicles already meeting the proposed MY 2023 standards; the approximate five-year cycle to design, develop, and produce vehicle models, indicating manufacturers are unlikely to have made significant changes to their product plans based on the rollback standards adopted just over a year ago; the agreement of several manufacturers to meet standards similar to those proposed in the California Framework Agreement; and other factors such as credit banking, trading, and deficit carry-forward provisions. All these factors support the conclusion that the lead time for the proposed standards is appropriate.

Lead time must be evaluated considering all the relevant circumstances. It would be improper to consider just the period between when these standards are adopted and the beginning of the MYs at issue. That view would artificially truncate the actual lead time provided to manufacturers and would ignore several relevant factors.

EPA adopted standards in 2012 for MYs 2023 to 2025 that are more stringent than those proposed in this rulemaking, and manufacturers have been on notice since 2012 of their obligation to prepare for the introduction of vehicles that meet those standards. In 2017 EPA confirmed the validity of those standards.

EPA withdrew this determination in 2018, however, EPA stipulates that this withdrawal was not final agency action and provided no more than a starting point for potential future changes. The 2018 withdrawal did not change any of the manufacturers' legal obligations. Manufacturers remained obligated to comply with the 2012 standards until EPA took final action in April of 2020, little more than a year ago. The revised standards adopted at that time were immediately litigated.

Given the manufacturers' expected five-year cycle of design and development and their continuous obligation to meet the 2012 standards until just over a year ago, it is quite reasonable for EPA to conclude that manufacturers will be producing and selling vehicles designed and developed to meet the 2012 standards for the first years of the proposed MY 2023 to 2026 program. Combined with the other evidence and analysis produced by EPA, it is clearly reasonable to conclude that the lead time provided for the proposed standards is reasonable and appropriate.

Manufacturers may raise concerns that some limited or unique situations exist where the lead time is not adequate for specific vehicle models. Even if there are such situations, the discussion above shows that the lead time is appropriate for broad segments of the industry, covering all kinds of manufacturers and all kinds of vehicle models. Limited and unique situations for certain specific models are not a basis for delaying the standards beyond MY 2023 or changing the level of the standards.

If EPA believes these situations call for some sort of relief, then the proper approach is not to delay the standards or change their level. At most EPA should consider providing a narrow administrative avenue for limited, temporary relief for individual vehicle models, where a manufacturer demonstrates there are severe technical or other problems that make compliance with their fleet average standard highly unlikely, notwithstanding reasonable preparation by the manufacturer since 2012 and considering all the flexibilities and other circumstances discussed above. EPA could consider providing limited and temporary relief on a case-by-case basis.

In the past, EPA has exercised its discretion under Section 202(a) to provide some manufacturers who meet specific criteria temporary relief in the form of additional lead time, based on a careful evaluation of the circumstances for those manufacturers. For example, EPA previously provided "Temporary Lead Time Allowance Alternative Standards" for manufacturers that met certain sales criteria to address lead time concerns in the initial years

of the MY2012 to 2025 GHG program.²³ EPA carefully limited the form and scope of the temporary relief to fit the circumstances and placed various restrictions on the provision to avoid inappropriate loss of emissions reductions.

If EPA decides to consider a temporary relief program, the agency should consider a case-by-case application process where a manufacturer demonstrates, for specific models and volumes of production, that it is highly impractical for them to comply with the otherwise applicable fleet-average standard, based on changes that the manufacturer made in its design and production plans for those models after March 30, 2020. That is the date the final rule relaxing the stringency of the MY 2021 to 2025 standards was signed and released to the public. Prior to that date, a manufacturer had no legally-recognized basis to change its design and production plans. While a manufacturer may have envisioned and expected changes in the stringency of the MY 2021 to 2025 standards, any change in design or production plans taken considering a manufacturer's projections of what EPA's 2020 final rule might contain was, at best, a business decision to take a risk on what the future action of EPA might be. Until March 30, 2020, the GHG standards for these model years remained unchanged from those adopted in 2012. It would not be appropriate for EPA to provide additional lead time to a manufacturer prior to March 2020 based on a business decision to prematurely change plans without knowing what, if any, changes EPA might make.

In determining whether temporary relief should be allowed, EPA should consider all the compliance flexibilities provided in the GHG program. EPA should require a manufacturer to demonstrate that notwithstanding these flexibilities, it is highly impractical for a manufacturer to comply with the otherwise applicable fleet-average standard given the specific circumstances involving the models at issue. EPA should only provide temporary relief if there is a clear and convincing demonstration of the need for such relief. In addition, EPA should impose appropriate conditions on the temporary relief, such as production volume limits and limits on emissions levels, so the relief is narrowly tailored to the need and to limit the amount of adverse environmental impact. For example, assuming a manufacturer makes a clear and convincing demonstration of need, EPA could consider a temporary and limited adjustment of the footprint attribute curve as it applies to a specified volume of the specific model or models at issue. This adjustment would become part of how the manufacturer shows compliance with their overall fleet-average standard.

F. The Next Rulemaking

The NPRM only provides a limited discussion of EPA's longer-term goals and plans. While recognizing EPA retains flexibility on many of the details of its plans, the agency needs to provide a clear signal to all stakeholders, domestic and global, that EPA is moving aggressively to achieve a goal of 50% electrification of new cars and light trucks by MY 2030 and near 100% electrification by MY 2035. Based on the Executive Order, this next

²³ 40 CFR 86.1818-12(e), 75 FR 25324, 25340 (May 7, 2010).

rulemaking is around the corner. EPA should publicly recognize this and clearly announce its basic goals for this critical rulemaking addressing MYs after 2026.

G. Separate EPA Rulemaking

EPA and the National Highway Traffic Safety Administration (NHTSA) have separate and differing responsibilities under the Clean Air Act and the Energy Policy and Conservation Act. The agencies have previously exercised their authorities through a joint GHG and Corporate Average Fuel Economy (CAFE) standard-setting rulemaking, and in general this has been an appropriate and effective approach to rulemaking. However, the Safer Affordable Fuel-Efficient (SAFE) 2 rulemaking inappropriately used this approach to limit and push to the side EPA's long experience and expertise in motor vehicle emissions control.

There is no legal requirement that the agencies use a joint rulemaking process. EPA can pursue a separate rulemaking and appropriately consult and coordinate with NHTSA, and vice versa. EPA can use its deep technical and policy expertise to achieve well-coordinated federal GHG and CAFE programs. In addition, separate EPA and NHTSA rulemakings make increasing sense as EVs become a greater share of the market, given the various limitations on NHTSA's authority when it sets CAFE standards. These limitations include the number of model years NHTSA can address, its inability to consider credits and credit transfers, and its statutory prohibition on considering EVs when setting CAFE standards. It is imperative that future EPA rulemakings not be constrained by NHTSA's statutory limitations.

IV. Conclusion

Overall, EPN is supportive of this proposal and looks forward to swift finalization and implementation. As previously stated, we believe EPA's top priority moving forward should be a post-2026 rule to establish a clear regulatory requirement to achieve near-100% zero-emissions car and light-truck sales by 2035. If the U.S. is to reach the IPCC goal of net-zero emissions by 2050, it is imperative that the agency promulgate standards to transform the new car fleet to zero-emissions vehicles by 2035, providing critical regulatory certainty and lead time, and a level playing field for U.S. automakers to be EV leaders. EPN recognizes the proposed 2023-2026 standards as an important building block to establishing the foundation for a strong 2035 rule. The proposal should be seen as the minimum level of progress needed to lay a strong foundation for reaching the longer-term goals. EPA should seriously consider ways to strengthen the combination of standards and flexibilities so that greater progress is made in these four model years towards zero-emissions cars and light trucks. As stated above, any changes to the proposal should be in the direction of increased stringency and greater progress to electric power, not less stringency and less progress.

EPA should clearly lay out its goal for the next rulemaking and send a clear signal of what it intends for the years leading to MY 2035, recognizing the need to retain flexibility on the myriad details

involved in the next rulemaking. EPN looks forward to the opportunity to work with EPA as the agency begins to develop post-2026 standards.

Thank you for the opportunity to submit written comments.