September 27, 2021

The Southern Environmental Law Center (SELC) offers the following comments on the rule proposed by the U.S. Environmental Protection Agency (EPA) to revise the greenhouse gas (GHG) emissions standards for light-duty vehicles for 2023 and later model years. SELC is a non-profit, non-partisan organization working in six states—Virginia, North Carolina, South Carolina, Georgia, Alabama, and Tennessee—and at the federal level to promote clean water and healthy air, protect natural areas, and advance cleaner and more equitable transportation alternatives, smarter growth, and community revitalization while addressing our current climate crisis.

Under the Trump administration, EPA substantially weakened GHG emissions standards for light-duty vehicles for model years 2021 through 2026 (the SAFE Rule). This was a significant step back for the U.S. in its efforts to address the climate crisis and protect public health, since the transportation sector is the largest source of GHG emissions nationally—as well as in most of the South—and emissions from light-duty vehicles account for a majority of that pollution. The Biden administration announced its intention to review the weakened standards on its first day in office, and has since put forward ambitious plans to promote cleaner vehicles. In August, EPA released its proposed rule to establish more stringent GHG emissions standards for light-duty vehicles. We welcome this proposal, and urge EPA to adopt the strongest standards possible under the Clean Air Act.

EPA’s proposed rule contains emission standards that would result in approximately a 10 percent increase in stringency in model year 2023, followed by a nearly 5 percent increase in stringency in each model year from 2024 to 2026. EPA is also considering even more stringent standards for model year 2026 (which would result in fleet average target levels that are 5 to 10 grams per mile lower than the currently proposed standards). In addition, the proposal contains a number of “compliance flexibilities,” including the use of incentive multipliers for certain advanced technology vehicles, which will effectively reduce the stringency of the standards. EPA is also considering two alternative sets of standards in the rulemaking—one more lenient than the current proposal and one more stringent. The more stringent set of standards, called Alternative 2, utilizes emissions standards that were adopted in 2012 (referred to as the “2012

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5 Id.
6 Id. at 43733-34.
Rule” in the remainder of this letter) as the basis for the targets for model years 2023 through 2025, and then continues with a linear increase in stringency through model year 2026.7 In addition to more stringent standards, Alternative 2 also does not utilize multiplier incentives.8

In order to protect the environment and public health and safety, EPA should, at a minimum, adopt the more stringent Alternative 2 standards, as well as the stronger standards proposed for model year 2026. EPA’s analysis shows that Alternative 2 would provide much greater overall benefits than its current proposal, and that compliance with the standards should be feasible for vehicle manufacturers. While these stronger standards would still not entirely close the cumulative GHG reduction gap between the SAFE Rule and the 2012 Rule, they are closer than the current proposal and it is critical that EPA make up this lost ground as quickly as possible. EPA must also ensure that the credit structure adopted is carefully designed so that the stringency of standards is not unnecessarily diluted. To this end, EPA should strongly consider discounting credits generated during model years 2021 and 2022 and should not extend the five-year carry-forward period for such credits, due to the substantial weakening of the GHG emissions standard under the Trump administration’s SAFE Rule. EPA should also not utilize multipliers for natural gas vehicles (NGVs), electric vehicles (EVs), fuel cell vehicles (FCVs), or plug-in hybrid electric vehicles (PHEVs) under any standards adopted.

I. EPA should adopt the strongest possible tailpipe GHG emissions standards under the Clean Air Act.

a. The transportation sector is the largest source of climate change-driving GHG emissions in the U.S. and is causing tremendous harm.

As noted in the Federal Register notice, “[t]he transportation sector is the largest U.S. source of GHG emissions, representing 29 percent of total GHG emissions. Within the transportation sector, light-duty vehicles are the largest contributor, at 58 percent, and thus comprise 17 percent of total U.S. GHG emissions.”9 This is also true for most states in the South. The transportation sector is the largest source of carbon dioxide (CO2)—a significant component of GHGs10—in every state in SELC’s region except for Alabama, where it is the second largest source.11

GHG emissions are a major driver of climate change, and the U.S. is already experiencing climate change impacts. Sea level rise is affecting coastal communities around the country, and the South is particularly vulnerable. For example, the Hampton Roads region in Virginia has one of the highest rates of sea level rise on the East Coast, with scientists predicting

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7 Id. at 43738.
8 Id.
a rise of 1.5 to 2 feet by 2050. The frequency of extreme weather events, including heavy precipitation, high tides, storm surges, and heat waves, also continue to increase. These weather events can lead to public emergencies and infrastructure disruptions, stressing health services and communities. Many major metropolitan areas in the U.S., including many in the South like Washington, D.C., Atlanta, and Birmingham, already suffer from elevated concentrations of ozone, nitrogen oxides (NOx), particular matter (PM), and volatile organic compounds (VOCs) and hotter temperatures can make air quality even worse. Poor air quality can lead to or exacerbate asthma and other serious health conditions, and has been shown to disproportionately impact low-income communities and communities of color. There is also an economic cost to climate change. Studies have found that climate change could cost the U.S. approximately 1.2 percent of the gross domestic product for every additional degree of warming, with the South expected to experience greater impacts than other parts of the country.

b. EPA should adopt the most stringent GHG emissions standards possible under the Clean Air Act.

For these and many other reasons, immediate and decisive action is needed to reduce U.S. GHG emissions. Tailpipe emissions standards are one of the most important tools available given the significant contribution of light-duty vehicles to GHG emissions. EPA should adopt the strongest possible standards under the Clean Air Act. The current proposal, however, leaves attainable GHG emissions reductions on the table. The proposed standards do not reach the compliance targets from the 2012 Rule until after model year 2025, even though the 2012 Rule and subsequent 2017 Midterm Evaluation provided ample justification for these more aggressive CO2 targets—despite the fact that these analyses were conducted at a time when GHG-reducing and EV technologies were more expensive and less widely available. The evidence supporting more stringent emissions standards has only grown stronger.

The pace of introduction of clean vehicle technologies has increased rapidly and the EV and PHEV manufacturing and sales landscape is quite a bit more advanced than when the 2012

Rule was promulgated. In part, decreasing costs are helping to make EVs more common. In 2010, lithium-ion battery packs cost over $1,000 per kilowatt hour (kWh); today the battery packs cost roughly $125 per kWh.\textsuperscript{19} Hybrid EVs accounted for only about 2.4 percent of vehicles sales in model year 2015, but that figure jumped to approximately 6.5 percent of vehicle sales by model year 2020.\textsuperscript{20} By the end of 2024, almost 100 EV and PHEV models are expected to be available to consumers.\textsuperscript{21} Almost every major vehicle manufacturer in the U.S. has launched, or is in the process of launching, an EV line and many have publicly stated ambitious EV and PHEV manufacturing and sales goals.\textsuperscript{22} Furthermore, as explained by EPA in its Regulatory Impact Analysis (RIA), vehicle manufacturers are believed to remain largely on track to meet the 2012 standards due to the multi-year nature of the vehicle development process.\textsuperscript{23}

While the proposed rule mentions that “EPA is afforded considerable discretion under section 202(a) [of the Clean Air Act] when assessing issues of technical feasibility and availability of lead time to implement new technology,”\textsuperscript{24} EPA further notes that no new technology is needed in this case; existing technology utilized in today’s fleet could be used to meet the proposed standards.\textsuperscript{25} Moreover, EPA states that Alternative 2 may be feasible “[c]onsistent with . . . discussions regarding feasibility, compliance costs, and lead time” for the proposed standards.\textsuperscript{26} These factors provide support for the adoption of Alternative 2, which utilizes the 2012 Rule stringency levels starting in model year 2023, as well as the adoption of the stronger standards proposed for model year 2026.

c. The benefits of more stringent standards add up.

Beyond the year-over-year increases in stringency, it is important to assess the cumulative impact the standards will have of GHG emissions reductions. The adoption of even the most stringent standards evaluated—Alternative 2—will not make up for GHG emissions reductions forgone due to the relaxation of the standards under the SAFE Rule, and it is critical that EPA maximize cumulative GHG emissions reductions under these standards. The alternatives analyzed by EPA have seemingly small differences in stringency for individual model years (the CO\textsubscript{2} targets for the various alternatives differ between 2 and 6 grams per mile

\begin{itemize}
\item\textsuperscript{19} Kenneth T. Gillingham, Designing Fuel-Economy Standards in Light of Electric Vehicles 1 (May 19, 2021), https://environment.yale.edu/gillingham/Gillingham_CAFE_EVs.pdf.
\item\textsuperscript{21} Ben Preston & Jeff. S. Bartlett, Automakers Are Adding Electric Vehicles to Their Lineups. Here’s What’s Coming, CONSUMER REPS. (Mar. 11, 2021), https://www.consumerreports.org/hybrids-eps/why-electric-cars-may-soon-flood-the-us-market-a9006292675/.
\item\textsuperscript{22} Id.
\item\textsuperscript{24} Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. at 43752. Under section 202(a) of the federal Clean Air Act, the standards “shall be applicable to such vehicles . . . for their useful life” and take effect “after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.” 42 U.S.C. § 7521(a). These determinations “are subject to the restraints of reasonableness.” NRDC v. EPA, 655 F.2d 218, 322 (D.C. Cir. 1981).
\item\textsuperscript{25} U.S. ENV’T PROT. AGENCY, supra note 23, at 2-7.
\item\textsuperscript{26} Id. at 2-10.
\end{itemize}
in any given model year\textsuperscript{27}, but these differences add up: Alternative 2 would result in almost 300 million metric tons (MMTs) fewer GHG emissions through 2050 than the current proposal.\textsuperscript{28}

Stronger standards also make sense when considering the net benefits of the proposed rule. Alternative 2 is projected to deliver between $24 billion and $40 billion more in net benefits through 2050 than the current proposal.\textsuperscript{29} Part of that benefit comes from fuel savings. Drivers are estimated to save between $150 billion and $290 billion through 2050 under Alternative 2 (as compared to between $120 billion and $250 billion under the proposed standards over that same period).\textsuperscript{30} These savings make a real difference for drivers, especially for low-income households and households of color that generally spend a greater proportion of their income on transportation costs.\textsuperscript{31}

In addition to lower fuel costs associated with more efficient internal combustion vehicles, stricter emission standards will also encourage manufacturers to make EVs more widely available—which will help drive the market closer to the Biden administration’s goal of having 50 percent of all new light-duty vehicles sold in the U.S. in 2030 be zero-emissions vehicles.\textsuperscript{32} Adoption of Alternative 2 is expected to result in approximately 10 percent of the market share being EVs by model year 2026,\textsuperscript{33} compared to only about 8 percent of the market share under the proposed standards.\textsuperscript{34} EVs are anticipated to reach parity in upfront costs with internal combustion vehicles in a few years,\textsuperscript{35} and increased EV sales will expand the used EV market. This will help to make EVs available and affordable to more consumers. EVs have many benefits for drivers, including improved handling and lower maintenance costs. For example,

\textsuperscript{28} EPA’s current proposal is projected to result in about a 2,205 MMT reduction in CO\textsubscript{2} emissions as compared to the no-action scenario through 2050. \textit{Id.} at 43783; U.S. ENV’T PROT. AGENCY, supra note 23, at 5-1. In comparison, Alternative 2 would result in in approximately a 2,498 MMT reduction in CO\textsubscript{2} emissions over that same period. \textit{Id.} at 5-3.
\textsuperscript{29} Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. at 43743, tbl. 15. In addition, the benefits of both the proposed standards and the alternatives have likely been undervalued as the non-GHG impacts of the standards incorporated into the analysis “do not include the full complement of health and environmental effects that, if quantified and monetized, would increase the total monetized benefits.” \textit{Id.}
\textsuperscript{30} \textit{Id.} at 43735, tbl. 4.
\textsuperscript{31} The national average gasoline cost burden is 7 percent of total income. Shruti Vaidyanathan, Peter Huether, & Ben Jennings, \textit{Understanding Transportation Energy Burdens}, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., iii (May 2021), https://www.aceee.org/sites/default/files/pdfs/transportation_energy_burdens_final_5-13-21.pdf. When accounting for race, in the Southeast the gasoline burden is 6.9 percent for white households, 9.5 percent for Black households, 9 percent for Hispanic households, and 4.3 percent for Asian households. \textit{Id.} at 14. The gasoline burdens for low-income households are even greater: 13.8 to 14.1 percent on average nationwide. \textit{Id.} at 8.
\textsuperscript{34} \textit{Id.} at 43731. EPA notes that, based on discussions with stakeholders, higher levels of EV penetration may occur by model year 2026. \textit{Id.} at 43738.
owning an EV saves the typical driver between $6,000 and $10,000 over the lifetime of the vehicle as compared to a gas car due to reduced fuel and maintenance costs.36

Stronger standards that hasten the transition to cleaner and zero-emissions vehicles will also help reduce health impacts and costs associated with transportation pollution, which often disproportionately impact low-income communities and communities of color.37 In Virginia, for example, it has been estimated that the widespread adoption of zero-emission vehicles by 2050 would yield more than $1.3 billion in avoided annual health costs—including costs of 115 premature deaths, more than 1,780 asthma attacks, and nearly 8,190 lost work days.38 Similar or better avoided annual health costs have been estimated for other states in South if zero-emission vehicles are widely adopted.39

For these reasons, EPA should, at a minimum, adopt Alternative 2 and the more stringent standards proposed for model year 2026.

II. When utilizing compliance flexibilities, EPA must ensure the credit structure does not unnecessarily dilute the stringency of the standards.

The credit system is a long-standing component of the federal tailpipe emissions standards. It allows vehicle manufacturers to average, bank, and trade credits generated for over-compliance with the standards in order to design compliance strategies that best suit their unique fleet composition. These existing compliance flexibilities mean that even manufacturers that have not invested in EVs and other advanced technologies to-date have ample ways to comply with the more stringent standards being considered.

It is critical that EPA carefully construct the credit system in a way that balances compliance flexibility and innovation incentivization with the inevitable loss of stringency of the standards resulting from the use of credits. This is especially important during the transition from the substantially weaker SAFE Rule standards for model years 2021 and 2022. As noted in EPA’s analysis and discussed above, it is unlikely that many vehicle manufacturers have altered their design and engineering plans developed to comply with the 2012 Rule. This means manufacturers may generate a substantial amount of overcompliance credit while the SAFE Rule is in effect during model years 2021 and 2022. Not discounting credits generated during these model years would be problematic and is likely to effectively weaken the GHG emissions standards for many years in the future. For these same reasons, EPA should not extend the five-year carry-forward for credits generated in these model years.

39 For example, Georgia could see almost $1.7 billion in avoided annual health costs by 2050, including costs of 147 premature deaths, 2,665 asthma attacks, and over 12,200 lost work days. Id. North Carolina could see over $1.6 billion in avoided annual health costs by 2050, including costs of 141 premature deaths, 2,384 asthma attacks, and over 10,000 lost work days. Id.
EPA should also not use multiplier incentives for EVs, FCVs, and PHEVs, and we support EPA’s proposal to eliminate the multiplier incentive for NGVs.\textsuperscript{40} The use of these incentives—which EPA believes vehicle manufacturers will continue to utilize “to their fullest extent”\textsuperscript{41}—will “result in roughly 46 MMT (596 minus 550 MMT) fewer tons of CO$_2$ reduced over the lifetimes of [model year] 2021-2026 vehicles.”\textsuperscript{42} This amounts to an approximately 7.7 percent reduction in the stringency of the proposed standards. EPA notes that it intends to transition away from multiplier incentives “as zero-emissions technologies become more mainstream,” but, as discussed above, the time for such a transition is now.\textsuperscript{43} Two of the three advanced technologies provided favorable treatment through the application of credit multipliers—EVs and PHEVs—are common technologies in today’s vehicle marketplace. One recent study suggests that application of multiplier incentives for EV and PHEV technology under these circumstances could create a compliance loophole that allows manufacturers to continue making and selling dirtier (but currently more profitable) vehicles and could result in reductions in EV market share—which would be contrary to the intent of the multiplier.\textsuperscript{44} As a result, EPA’s proposed use of multiplier incentives could decrease the stringency of the overall emissions standards for little gain in technological advances or EV penetration.\textsuperscript{45}

If EPA decides to move forward with the use of multiplier incentives for EVs, FCVs, and PHEVs—which, again, we urge that it not do—several changes should be adopted. One of EPA’s rationales for proposing new multipliers is “to provide continuity for the incentives,” but the proposed multiplier incentives are in fact more generous than the multiplier incentives utilized in the 2012 Rule.\textsuperscript{46} The proposed multiplier values effectively restart the incentive program, applying the multiplier values that the 2012 Rule used for vehicles from model years 2017 through 2019 to vehicles from model years 2022 through 2024. As discussed above, EV and PHEV technology has advanced and costs have decreased since the 2012 Rule was promulgated, and these generous incentive values are no longer needed. At a minimum, EPA should revise the proposal so the model year 2022 through 2024 multiplier incentives values start at 1.5 for EVs and FCVs, and 1.3 for PHEVs—the values provided for the last year of advanced technology credits (model year 2021) in the 2012 Rule—and then decrease to a value of 1.0 (no multiplier credits) by model year 2026.

EPA should also reconsider the incentive for PHEV technology. While the current multiplier structure provides a lower multiplier incentive value for PHEVs, the multiplier value could be better calibrated to reflect the fact that PHEV technology, which utilizes both battery and internal combustion engines, is not true zero tailpipe emissions technology. Under California’s Advanced Clean Cars program, for example, “transitional zero emission vehicles,” which are most commonly PHEVs, earn credits based on their all-electric range (AER), with a

\textsuperscript{40} NGVs vehicles are not zero-tailpipe-emissions technology and should not be incentivized.
\textsuperscript{42} Id. at 43756.
\textsuperscript{43} Id. at 43757.
\textsuperscript{44} Gillingham, supra note 19, at 2.
\textsuperscript{45} Id. at 2-3.
minimum amount of AER required for the vehicles to qualify for credits in the first place.\textsuperscript{47} If it adopts a multiplier incentive structure, EPA should provide more generous multiplier values for PHEVs with greater AERs and set an AER floor below which vehicles will not qualify for the multiplier, and it should cap the amount of credits generated by PHEVs that may be used to satisfy the overall multiplier incentive credit cap—similar to the cap established by California to transitional zero emissions vehicles.\textsuperscript{48}

III. Conclusion

Strong tailpipe GHG emissions standards represent one of the most valuable ways to begin to address the role of transportation in driving climate change. EPA should, at a minimum, adopt the more stringent Alternative 2 standards, as well as the stronger standards proposed for model year 2026. This will maximize the benefits and cumulative GHG emissions reductions from the regulations, and help to protect the environment and public health and safety. In order to ensure the stringency of the standards, EPA should also adopt several changes to the standards’ compliance flexibilities. The substantial relaxation of GHG emissions standards under the Trump administration’s SAFE Rule means EPA should discount credits generated during model years 2021 and 2022, and should not extend the five-year carry-forward period for such credits. Additionally, EPA should not utilize multipliers for NGVs, EVs, FCVs, or PHEVs under any standards adopted.

Sincerely,

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\textsuperscript{47} See 13 CCR § 1962.2(c)(3)(A).
\textsuperscript{48} See 13 CCR § 1962.2(b)(1)(E).