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Public Comment on U.S. EPA's Reconsideration of 2009 Endangerment Finding and Vehicle GHG Standards

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Introduction

The U.S. Environmental Protection Agency's (EPA) proposal to repeal the motor-vehicle greenhouse gas (GHG) standards[1] is an opportunity to correct a program that imposes heavy costs without producing measurable climate benefits. Economically, the standards fail the tests of efficiency, equity, and statutory alignment. They drive up new-vehicle prices, distort capital allocation, slow fleet turnover, and generate compliance credits detached from real-world emissions reductions.

The Clean Air Act requires EPA to give "appropriate consideration to the cost of compliance" in setting standards under 42 U.S.C. § 7521(a)(2).[2] That duty cannot be met by projecting model-based benefits that vanish into the margin of error in climate data. Nor can it be met by ignoring the regressive burdens these standards place on working families or the inefficiency created by the averaging-banking-trading system. The proposed repeal aligns EPA with statutory obligations and the broader principle that resources should be directed toward outcomes that deliver real, observable improvements.

Several economic reasons justify the repeal. First, the maximum feasible reductions from U.S. vehicles are too small to register in global climate data. Second, higher vehicle prices slow fleet turnover and disproportionately harm low- and middle-income households. Third, benefit-cost analysis shows compliance costs in the hundreds of billions of dollars overwhelm any plausible measure of benefits. Fourth, the crediting system misallocates capital by treating electric vehicles as zero-emission and rewarding phantom reductions. And finally, repeal combined with reaffirmed preemption preserves the efficiency of a uniform national program and avoids the costs of a patchwork of state rules.

The current standards divert resources from more effective climate strategies, burden consumers, and undermine market efficiency. Repealing them will restore EPA's motor-vehicle program to economic logic, statutory consistency, and the interests of American households and businesses.

[1] **Reconsideration of 2009 Endangerment Finding and Greenhouse-Gas Vehicle Standards**, Federal Register (August 1, 2025).
[2] **42 U.S.C. § 7521 (2025)**.

Measurability and Requisite Technology

EPA should regulate only when the benefits of regulation are large enough to be measured with confidence. A rule that imposes substantial costs yet produces effects too small to detect accurately fails basic economic logic and cannot satisfy the Clean Air Act's requirement in § 42 U.S.C. § 7521(a)(2) to give "appropriate consideration to the cost of compliance."

At the source-category level, the motor-vehicle program does not deliver benefits that can be meaningfully measured. Transportation makes up about 15 percent of global greenhouse gas emissions and nearly one-quarter of global energy-related CO_2 emissions, with road transport driving the largest share.[3] In the United States, on-road vehicles account for an estimated 1.4 to 1.5 gigatons of CO_2 emissions each year, according to the EPA's *Fast Facts on Transportation Greenhouse Gas Emissions*.[4] By comparison, the Global Carbon Budget[5] puts annual global fossil CO_2 emissions at 36 to 37 gigatons, meaning U.S. on-road vehicles contribute only about three to four percent of the worldwide total. With such a limited share, even the most aggressive federal tailpipe standards cannot produce a detectable shift in global climate outcomes.

The Intergovernmental Panel on Climate Change's (IPCC) Transient Climate Response to cumulative CO_2 Emissions shows that every 1,000 gigatons of CO_2 emitted increases global temperatures by about 0.45 °C.[6] On that basis, even if U.S. on-road vehicle emissions of about 1.45 gigatons per year were reduced to zero for the next 25 years, the avoided emissions would total roughly 36 gigatons. The climate effect of that reduction is only approximately 0.02 °C, which is smaller than the variation across leading global temperature datasets over a single decade. It is also well within the ±15 percent margin of error in observed global warming trends identified by the U.S. Department of Energy's (DOE) Climate Working Group in EPA's own rulemaking record. In plain terms, the outcome is statistically insignificant and not observable in the very metric EPA seeks to influence.

Section 202(a)(2) requires more than available technology; it requires that compliance spending produce genuine, observable improvements. Technology is not "requisite" if the benefits cannot be distinguished from zero at the category level. Before imposing substantial Title II costs, EPA should require that category-level benefits exceed the threshold of observational precision over a reasonable timeframe. By that test, the current motor-vehicle standards fail. Repeal aligns the program with scientific measurability and the Clean Air Act's command to weigh costs against observable benefits, and it sets a durable precedent: future vehicle rules must show detectable results before imposing costs on consumers and manufacturers.

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[3] **Chapter 10: Transport**, *Climate Change 2022: Mitigation of Climate Change*, Intergovernmental Panel on Climate Change's Sixth Assessment Report, 2022.
[4] **Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions (1990–2022)**, U.S. Environmental Protection Agency, May 2024.
[5] Piers M. Forster, "**Indicators of Global Climate Change 2022: Annual Update of Large-Scale Indicators of the State of the Climate System and Human Influence**," *Earth System Science Data* 15 (2023).
[6] ***Climate Change 2023: Synthesis Report***, Intergovernmental Panel on Climate Change, March 2023.

Fleet Turnover, Used-Vehicle Markets, and Consumer Surplus

When EPA tightens vehicle standards, new-vehicle prices rise. Higher prices change a household's behavior. Many delay replacing their cars or turn to the used-vehicle market instead. That shift slows fleet renewal, keeping older, higher-emitting vehicles on the road longer and raising near-term emissions even as nominal standards become stricter.

The affordability barrier is clear. Kelley Blue Book's Monthly New-Vehicle Transaction Price Report (July 2025) shows that the average new-vehicle transaction price was $48,841.[7] The U.S. median household income in 2024 was $83,730, which means the average new car costs well over half of what a typical household earns in a year.[8] Affordability pressures are further underscored by Cox Automotive's Vehicle Affordability Index, which reported in July 2025 that the typical monthly new car payment was $748 and that households needed about 36.8 weeks of median income to purchase the average vehicle.[9] These levels remain historically elevated and constrain consumer access to new vehicles.

Households are responding by holding onto vehicles longer. S&P Global Mobility reports that the average age of U.S. cars and light trucks on the road hit a record 12.6 years in 2024 and rose further to 12.8 years in 2025.[10] High prices and rising fleet age tell the same story: replacement cycles are lengthening, which slows turnover and keeps older, higher-emission vehicles on the road.

Economic research confirms what the market data show. Jacobsen and van Benthem, in the *American Economic Review (2015)*,[11] estimate a scrappage elasticity of about −0.7: a 10 percent increase in new-car prices leads to a seven percent decline in scrappage, slowing the retirement of older vehicles. Their models also show 13–23 percent leakage of expected emissions reductions, meaning that up to one-quarter of projected climate benefits disappear once consumer behavior is taken into account.

The burden of these dynamics falls most heavily on lower- and middle-income households,[12] showing that these households are twice as likely as higher-income buyers to exit the new-vehicle market when prices rise, instead shifting to older used cars with higher repair and fuel costs. By contrast, higher-income households can absorb higher prices and continue purchasing new vehicles. The result is a regressive pattern: low and middle-income families extend the life of less

[7] ***Data Tables for July 2025 Kelley Blue Book Average Transaction Price Report***, Cox Automotive Inc., July 2025.
[8] Melissa Kollar and Zach Scherer, ***Income in the United States: 2024, Current Population Reports,*** *P60-286, U.S. Census Bureau, September 2025.*
[9] **New-Vehicle Affordability Index***: July 2025*, Cox Automotive Inc. and Moody's Analytics, July 2025.
[10] Nishant Parekh and Todd Campau, **Average age of vehicles hits new record in 2024**, S&P Global Mobility, May 22, 2024.
[11] Mark R. Jacobsen and Arthur A. van Benthem, "**Vehicle Scrappage and Gasoline Policy**," *American Economic Review* 105, no. 3 (2015).
[12] Benjamin Leard, **Estimating Consumer Substitution Between New and Used Passenger Vehicles**, working paper, Resources for the Future, August 2021.

efficient vehicles, bearing higher operating costs per mile while realizing fewer benefits from technological advances.

Lowering regulatory costs may also raise concerns about expanding fleet size. Although lower sticker prices may modestly increase new-vehicle sales, the empirical literature shows the dominant effect is on fleet turnover rather than fleet expansion.[11] U.S. vehicle stock typically grows by only 1–2 percent per year in line with population growth, while scrappage responds strongly to affordability. Accelerated replacement matters because EPA data show that new light-duty vehicles emit about 25 percent less CO_2 per mile than the average vehicle on the road today.[13] Repeal does not erase these gains: automakers have already invested in more efficient technologies, and baseline Clean Air Act standards ensure new vehicles remain far cleaner than older models. Thus, the net effect of easing affordability is a cleaner fleet through faster retirement of older, higher-emitting vehicles.

Repeal avoids these market distortions. By removing regulatory costs that inflate new-vehicle prices, the market can renew the fleet faster. Faster turnover means cleaner, safer, and more fuel-efficient vehicles reach consumers sooner, reducing emissions more effectively than regulatory policies that delay replacement. In this way, repeal supports both environmental progress and improving affordability for households.

Credit/ABT Design and Capital Misallocation

The current averaging–banking–trading (ABT) system does not accurately measure relevant CO_2 emissions. For compliance purposes, the system assumes battery-electric vehicles (EVs) produce "zero grams of CO_2 per mile." In practice, however, EVs generate upstream emissions whenever the electricity used for charging them comes from fossil-fuel power plants.[14] This accounting convention builds phantom reductions into the system, reductions that exist on paper but not in the atmosphere. And that misleading convention has significant financial consequences because automakers that produce more EVs than required earn compliance credits they can sell to competitors. These trades create major revenue streams disconnected from actual abatement. Tesla, for example, has reported over $11 billion in regulatory credit revenue in the past decade; income earned not from reducing emissions but from selling credits to firms that need them.[15] The result is redistribution within the industry, not a genuine environmental net-benefit.

The incentive structure worsens the problem. Automakers respond logically to the rules, but those rules favor credit accumulation over cost-effective emissions reductions. Companies focus on drivetrains and production methods that earn government credits, even if the actual emissions benefits are negligible. This misplaced focus leads to misused capital: billions of dollars invested in manufacturing strategies that earn compliance points instead of creating real emissions

[13] ***Light-Duty Vehicle CO_2 and Fuel Economy Trends: 1975 Through 2023***, EPA-420-R-23-014, U.S. Environmental Protection Agency, November 2023

[14] Joyce McLaren, John Miller, Eric O'Shaughnessy, Eric Wood, and Evan Shapiro, ***Emissions Associated with Electric Vehicle Charging: Impact of Electricity Generation Mix, Charging Infrastructure Availability, and Vehicle Type***, National Renewable Energy Laboratory, April 2016.

[15] Rob Stumpf, **Tesla Banked $11 Billion by Selling Regulatory Credits Over the Last Decade**, InsideEVs, August 14, 2025.

reductions.[16] Over time, the misallocated funds shift costs onto consumers, who face higher vehicle prices driven more by regulatory compliance than by fuel-efficiency or vehicle performance.

The environmental credibility of the program also suffers. By embedding phantom reductions into the ABT framework, reported compliance gains exaggerate the real emissions improvements achieved. The exaggeration widens the gap between what regulations claim and what actually occurs in the environment, eroding trust and diverting significant sums toward less effective alternatives.

Repeal would close this gap. Ending the zero-gram EV assumption and dismantling the credit-trading framework built on it would eliminate phantom reductions and redirect capital toward real abatement opportunities, cleaner vehicles, better manufacturing, and infrastructure that genuinely lowers lifecycle emissions. Repeal is not only justified, it is necessary. It restores efficiency by aligning incentives with actual reductions; promotes fairness by removing unearned transfers; and safeguards statutory integrity by grounding EPA's vehicle program in measurable results.

Benefit-Cost Analysis

Benefit-cost analysis is not optional in this context—it is required. The Clean Air Act directs EPA to give "appropriate consideration to the cost of compliance." That directive means the agency must weigh the costs of a standard against the benefits it claims to deliver. Applied to the motor-vehicle GHG program, the arithmetic is straightforward: compliance costs are enormous, while the benefits are uncertain and, at the source-category level, too small to measure confidently.

EPA's own Regulatory Impact Analysis for the 2027–2032 light- and medium-duty vehicle rule project that tighter standards will add $260–$380 billion in technology costs through 2055.[17] Broader estimates of the total burden, including transition costs and stranded capital, are even higher—roughly $900 billion over the same period. Consumers will absorb much of this cost through higher prices, while manufacturers will face retooled production lines and long-term investments with uncertain returns.

Against these estimated costs, the claimed benefits hinge almost entirely on the social cost of carbon (SCC), a highly unstable metric. The Obama-era interagency working group placed the SCC at $30–$46 per ton in 2010, the Trump administration recalculated it at $1–$7 per ton by limiting damages to domestic impacts, and the Biden administration reset it to $53 per ton in 2021. New York State has gone even further, applying $125 per ton. These are not small adjustments but order-of-magnitude differences that can flip a rule's cost-benefit balance depending on which assumption is used.

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[16] Virginia McConnell and Benjamin Leard, ***Potential Role and Impact of Electric Vehicles in U.S. Decarbonization Strategies***, Resources for the Future Report, December 8, 2020.
[17] Logan Pierce, ***U.S. Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light- and Medium-Duty Vehicles***, International Council on Clean Transportation, March 2025.

Peer-reviewed research confirms that SCC estimates swing widely because they depend on very uncertain inputs. A recent study in Nature found central estimates as high as $185 per ton, while noting that values shift dramatically depending on the chosen discount rate and damage function.[18] Analysts at Resources for the Future show that simply changing the discount rate from 3 percent to 2 percent more than doubles the SCC, from about $51/ton to $121/ton.[19] A broader meta-analysis finds published SCC values ranging from under $10/ton to over $500/ton, depending on model structure and assumptions.[20] These massive swings illustrate why SCC cannot serve as a stable or objective foundation for regulation. When the value depends more on modeling assumptions than on observable data, the claimed benefits of regulation rest on numbers too uncertain to guide binding federal standards.

Even using EPA's preferred SCC values, the benefits from vehicle GHG standards remain too small to detect. The DOE Climate Working Group (2025) found that eliminating all U.S. motor-vehicle emissions would change global temperature by less than the observational error margin in modern climate data.[21] That means the benefits EPA monetizes through SCC models cannot be empirically confirmed in real-world measurements. A cost-benefit framework that counts modeled benefits below the threshold of detectability cannot justify regulatory costs in the hundreds of billions of dollars.

When the regulatory costs are weighed against uncertain environmental benefits, the result is clear: the net benefits are negative. Repealing the standards aligns EPA with the letter of §202(a)(2) and the purpose of benefit-cost analysis designed to ensure that regulatory burdens are justified by measurable outcomes. Repeal would strengthen the administrative record and demonstrate EPA's commitment to cost-effective, evidence-based rulemaking.

Preemption, Uniformity, and Reliance

A national motor-vehicle market requires a national regulatory framework. When rules diverge across states, compliance becomes more costly, capital investment becomes riskier, and consumers ultimately pay higher prices. The Clean Air Act addresses this in 42 U.S.C. § 7521 by preempting state standards for new motor vehicles except in limited cases in which California seeks a waiver. EPA's proposal to repeal the federal motor-vehicle GHG standards retains the statutory preemption under Section 209 and therefore preserves the benefits of a uniform system: lower compliance costs, clearer expectations for manufacturers, and fewer barriers to long-term capital formation.

The efficiency gains from uniformity are substantial. Automakers make multi-billion-dollar bets on product lines that take years to design, certify, and bring to market. Regulatory fragmentation

[18] Leo C. Rennert et al., "**A Balanced Approach to Modeling the Social Cost of Carbon**," *Nature* 615, no. 7958 (September 2022).
[19] Brian C. Prest, William Pizer, and Richard G. Newell, **Improving Discounting in the Social Cost of Carbon**, Resources for the Future, October 21, 2021.
[20] Richard S. J. Tol, "**Social cost of carbon estimates have increased over time**," *Nature Climate Change* 13, no. 6 (June 2023).
[21] ***A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate***, Climate Working Group, U.S. Department of Energy, July 23, 2025.

raises the risk premium on those investments, discouraging innovation and forcing manufacturers to hedge against conflicting state rules. A single national standard, by contrast, creates predictability. It allows companies to allocate capital more efficiently, achieve economies of scale, and avoid duplicative compliance systems. Uniformity reduces transaction costs without sacrificing measurable climate benefits.

Maintaining preemption alongside repeal also reduces uncertainty for consumers. A patchwork of state mandates would not only increase costs but could also distort vehicle availability, with some models offered in some markets but not others. The result would be a fragmented national fleet that undermines consumer choice and weakens the efficiency of the automobile sector. Reaffirming Title II preemption avoids this outcome and ensures that families and businesses enjoy a cohesive national market.

EPA should also address the narrow issue of reliance tied to the credit regime. Some firms have booked regulatory credits as assets, and a sudden elimination without transition could create short-term balance-sheet shocks. That concern does not justify continuation, but a brief wind-down can ease transition. Providing a limited phase-out for bookkeeping without prolonging the underlying distortions will smooth repeal and minimize unnecessary disruption.

Repealing the standards while affirming preemption achieves two goals at once: it eliminates a costly and ineffective rule while preserving the efficiency of one national program. This approach reduces compliance burdens, stabilizes investment, and ensures the U.S. auto market continues to operate on a uniform, predictable foundation.

Conclusion

Vehicle GHG standards have imposed high regulatory costs with little to no measurable climate benefit to show for it. Even if every U.S. car and truck stopped emitting CO_2 tomorrow, the effect on global temperatures would be too small to detect. Meanwhile, the resulting higher vehicle prices slow down fleet renewal, keeping older, dirtier vehicles on the road longer. And the cost-benefit math depends almost entirely on highly-variable "social cost of carbon" number that changes with administration. The current credit-trading system then rewards phantom emissions reductions and diverts billions of dollars into illusory paper benefits instead of environmental improvements.

Repeal offers a practical way forward. It eases unnecessary price pressures on families, helps newer and cleaner cars get on the road faster, and ends a credit market that has become more about bookkeeping than about emissions. It reaffirms one national standard for manufacturers, so they can plan and invest with confidence instead of navigating a patchwork of state rules. And it reestablishes a framework in which regulatory costs are justified by benefits that can be measured, consumers receive real value instead of paying hidden costs, and industry invests in solutions that truly reduce emissions. That is the balance the Clean Air Act requires, and the market, American households, and businesses deserve.

About The Buckeye Institute

Founded in 1989, The Buckeye Institute is an independent research and educational institution – a think tank – whose mission is to advance free-market public policy in the states.

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