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# How Would the Proposed EPA Passenger Vehicle Greenhouse Gas Emissions Standards Affect New-Vehicle Consumers?

Joshua Linn

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## About the Author

**Joshua Linn** is a professor in the Department of Agricultural and Resource Economics at the University of Maryland and a senior fellow at Resources for the Future (RFF). His research centers on the effects of environmental policies and economic incentives for new technologies in the transportation, electricity, and industrial sectors. His transportation research assesses passenger vehicle taxation and fuel economy standards in the United States and Europe. He has examined the effects of Beijing's vehicle ownership restrictions on travel behavior, labor supply, and fertility.

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# Abstract

The Environmental Protection Agency (EPA) recently proposed passenger vehicle greenhouse gas (GHG) emissions standards that would reduce new-vehicle emissions rates by about half between 2026 and 2032. EPA estimates the standards would reduce US GHG emissions by about 10 percent by midcentury, helping the administration achieve its overall GHG emissions objectives, and yield large consumer, air quality, and climate benefits. However, EPA does not quantify how those benefits would be distributed across consumers. This report uses the Resources for the Future (RFF) light-duty vehicle model to estimate overall benefits and costs of the proposed standards and to describe how new-vehicle consumers would be affected by income group. For vehicles sold in 2030, tighter standards improve social welfare by \$128 billion (2022\$) over the lifetimes of those vehicles. Lower-income households enjoy larger fuel cost reductions than other households and thus receive a disproportionately large share of the overall benefits.

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# 1. Introduction

The Biden administration **aims to reduce** US greenhouse gas (GHG) emissions by half between 2005 and 2030 and achieve net-zero emissions by midcentury. The administration's major policy announcements often promote the climate and other environmental benefits alongside the objectives of improving environmental justice and equity. For example, the announcement of the 2030 US emissions target mentions the middle-class jobs that would be created, and the **proposed GHG emissions standards** for electricity generators include a fact sheet that highlights air quality benefits for low-income and other disadvantaged communities.

The Environmental Protection Agency (EPA) **recently proposed** passenger vehicle GHG emissions standards that would go a long way to meeting the administration's GHG emissions objectives. Passenger vehicles account for about 15 percent of US GHG emissions, and between 2026 and 2032, the standards would cut in half average new-vehicle emissions rates. EPA analysis focuses on the overall effects of the standards, estimating that they would reduce forecasted US GHG emissions by about 10 percent by midcentury and yield consumer, air quality, and climate benefits of approximately \$48 billion to \$120 billion per year.

How would those benefits and costs be distributed across consumers? Despite the administration's interest in environmental justice and equity, the EPA analysis of the proposed standards does not quantify how effects may vary across consumers. The standards will increase sales of plug-in vehicles at the expense of gasoline-powered vehicles while simultaneously making those gasoline vehicles more fuel efficient. Both changes reduce fuel costs for drivers. Low-income households spend a much larger share of their income on gasoline than do high-income households, so if the standards reduce fuel costs of all vehicles by the same proportion, low-income households would enjoy a disproportionately large share of the benefits.

However, low-income households typically have lower demand for plug-in vehicles than high-income households (even putting aside the high up-front purchase price), and by shifting the market from gasoline to plug-in vehicles, the standards may reduce purchasing options for low-income households. Although the EPA analysis of the proposed standards contains considerable detail on vehicle technologies, the agency does not evaluate how the standards will affect well-being of different types of households.

This paper uses the RFF light-duty passenger vehicle model to evaluate the overall benefits and costs of the standards and the distribution of the benefits across new-vehicle consumers. The model distinguishes households by income, age, urbanization, and geographic region. Vehicle manufacturers can respond to GHG standards by adjusting vehicle prices and fuel economy and by introducing new electric vehicles to the market. I monetize benefits and costs to new-vehicle buyers by income group, costs to manufacturers, and the GHG benefits of the standards.<sup>1</sup>

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1 The distributional effects may vary across other categories of households, such as race. Focusing on income is consistent with recent guidance from the Office of Management and Budget on distributional analysis of regulations, given the available data on new-vehicle buyers.

I define social welfare as the sum of consumer benefits from owning and driving new vehicles, manufacturer profits from selling vehicles, and societal benefits of GHG emissions reductions. The main results are as follows:

- For vehicles sold in 2030, tighter standards improve social welfare by \$128 billion (2022\$) over the lifetimes of those vehicles. It is difficult to compare this figure directly with EPA estimates because of differences in modeling structure.
- Lower-income households enjoy larger fuel cost reductions than other households and thus receive a disproportionately large share of the overall benefits.
- Driving this result is the assumption that vehicle manufacturers will introduce successful low-price electric vehicles by 2030—something they have struggled to do.

The remainder of this paper provides an overview of the model, describes the scenarios that are analyzed, and presents results. The final section discusses conclusions for the proposed standards and mentions caveats to the modeling.

## 2. Overview of the Light-Duty Computer Model

This section is an overview of RFF's light-duty model, and additional details [can be found here](#). The model characterizes vehicle sales, fuel economy, horsepower, and prices for a single year. The model comprises three regions: California, other states adopting California's zero-emissions vehicle (ZEV) standards, and all other states. Although the ZEV program has complex crediting rules, essentially it determines a minimum market share for plug-in and fuel-cell vehicles.

Each region's consumers choose the vehicles that maximize their subjective well-being, which depends on up-front purchase prices, fuel costs, fuel type (gasoline, hybrid, plug-in hybrid, or electric), and other factors. Their preferences vary across 60 demographic groups based on income, age, urbanization, and region. Preferences are estimated from survey responses of 1.5 million new-vehicle consumers between 2010 and 2018. The survey data includes demographic information like income and details about the vehicle purchased. Vehicles are defined at a highly disaggregated level to recognize model, trim (for example, LX or premium), fuel type, body style (for example, sedan or sport utility vehicle), drive type, and engine size. This definition of a vehicle matches the options consumers face at dealerships when they choose new vehicles. For example, the consumer may choose the base version of the model or, for additional cost, an upgraded version that may include a better sound system, more safety features, and so on.

Each manufacturer chooses vehicle prices and fuel economy to maximize profits while facing federal GHG and regional ZEV standards. Vehicle manufacturers also choose whether to introduce new types of electric vehicles, depending on the expected profitability and entry costs of those vehicles.

In 2022, under the Advanced Clean Car program, California adopted standards that require all new vehicles sold to be plug-in hybrid, battery electric, or fuel-cell by 2035. I refer to these standards as the ZEV standards, since they represent a continuation of the current ZEV standards that run through 2025 (with some changes in crediting rules). I assume that all states currently participating in the ZEV program will continue to participate in the post-2025 program.<sup>2</sup>

Manufacturers also face federal GHG standards. Through 2026, manufacturers must comply with EPA standards for GHG emissions and Department of Transportation (DOT) standards for fuel economy. Because DOT has not yet proposed post-2026 fuel economy standards, this paper considers only post-2026 EPA standards.

The model includes all plug-in vehicles that have entered the market as of 2022. Many manufacturers have introduced plug-in hybrid and electric vehicles that are siblings of gasoline-powered vehicles; except for the power train, they have similar attributes as their gasoline counterparts. For example, the Kia Sorento (a midsize sport utility vehicle) is available as a gasoline or plug-in hybrid version. The gasoline and plug-in hybrid versions are physically nearly indistinguishable, but the plug-in hybrid achieves about 37 miles per gallon rather than about 26 and costs an extra \$6,000.

In the model, a manufacturer can introduce a new electric vehicle sibling to a gasoline vehicle that does not already have one. For example, hypothetically, Kia could decide to introduce an all-electric version of the Sorento that is identical to the gasoline and plug-in hybrid versions except for the fuel type. A manufacturer introduces the new vehicle if the expected revenue from sales exceeds the production costs as well as the sunk costs of designing and testing the vehicle. Vehicle production and entry costs are estimated from observed choices of vehicle prices, fuel economy, and entry, under the assumption that each manufacturer makes these choices to maximize its own profits.

I simulate the equilibrium in a market (year and region) given assumptions on the total number of consumers in the market, fuel prices, battery costs, plug-in vehicle subsidies, and ZEV and GHG standards. For each simulated market, the output includes entry of new electric vehicles and the price, fuel economy, and sales of each vehicle.

Based on these outputs, I compute the consumer welfare from purchasing and owning vehicles over their lifetimes, manufacturer profits from selling the vehicles, and lifetime fuel consumption and GHG emissions from those vehicles. Consumer welfare includes the perceived benefits of purchasing and owning the vehicle, less purchase costs and lifetime fuel costs. Fuel costs are computed based on driving patterns that vary with vehicle class (car or light truck) and age and household demographic group, estimated from the 2017 National Household Travel Survey, and scrappage rates from historical registration data.<sup>3</sup>

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2 California, Colorado, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington participate. Minnesota will join the program in 2025 but is not included among the ZEV states for modeling purposes. Most of these states have not yet announced whether they will continue to participate after 2025. If fewer states participate, the costs of the federal GHG standards would **likely be higher** than reported in Section 4.

3 Driving patterns and scrappage rates are **reported here**.

Manufacturer profits are sales revenue minus the sum of production costs and electric vehicle entry costs. The GHG emissions of the vehicles include carbon dioxide and methane emissions from fuel combustion in the vehicle, upstream fuel production and refining, and emissions from electricity generation for battery charging.<sup>4</sup>

### 3. Scenario Descriptions

I analyze four scenarios that represent different levels of stringency of the GHG standards, which Table 1 summarizes. Rather than modeling outcomes each year and tracking fuel consumption, GHG emissions, and other outcomes over time, I focus on the effects of the standards on the vehicles sold in a single year. In particular, I assume EPA finalizes GHG standards in 2024, and I simulate the effects for the year 2030. This year is chosen as roughly the midpoint of the proposed standards that cover the years 2027–2032. Considering a single year also avoids the need to forecast new-vehicle market conditions far into the future, which would introduce greater modeling complexity and uncertainty. For example, vehicle architecture and design may not change fundamentally by 2030, but vehicles sold in the late 2030s or 2040s may be dramatically different.<sup>5</sup>

**Table 1. Description of Scenarios**

Baseline	Proposed	10 percent more stringent than proposed	10 percent less stringent than proposed
Maintain 2026 level of stringency through 2030; Advanced Clean Car 2 Standards; Inflation Reduction Act purchase and production subsidies	Same as baseline, except reduce average GHG emissions rate 36 percent	Same as proposed, except reduce average emissions rate 40 percent relative to baseline	Same as proposed, except reduce average emissions rate 32 percent relative to baseline

4 Assumptions on upstream emissions are the **same as here**, and assumptions on electricity sector emissions are the **same as here**.

5 Implicitly, I assume that the standards do not affect vehicle retirements or driving. Accounting for these effects would be **unlikely to overturn** the conclusions that the proposed GHG standards would yield large welfare gains and that low-income households would disproportionately enjoy those gains.



The baseline scenario assumes that the GHG standards in 2030 are the same as they will be in 2026. EPA makes the same assumption in its regulatory impact analysis (RIA) of the proposed standards.

The second scenario approximates EPA's proposed standards that would reduce average emissions rates by almost 40 percent between 2026 and 2030, including a somewhat greater percentage reduction for light trucks than for cars. The final two scenarios require GHG emissions rates 10 percent stronger or weaker (that is, lower or higher) than the proposed standards. The differences in stringency between these alternatives and the proposed standards are similar to the range of stringencies that EPA considers.

Other assumptions are common across the four scenarios, and I adhere to the RIA assumptions when feasible. Assumed battery costs in 2030 are \$90 per kWh of capacity. The Inflation Reduction Act provides subsidies for domestic battery production, and I assume that all batteries are eligible for production subsidies. The eligibility assumption is consistent with the recent trend of constructing new battery production facilities in North America, but it likely requires considerable additional production investments than are planned currently. New electric vehicles have a range of 325 miles, which is similar to the range of many electric vehicles that have recently entered or will soon enter the US market. All new entrants consume one-third kWh per mile traveled. I take projected electricity prices, gasoline prices, and total new-vehicle sales from the reference case of the Energy Information Administration's Annual Energy Outlook 2023.

The Inflation Reduction Act provides subsidies up to \$7,500 for purchasing a new plug-in vehicle. To be eligible for the subsidy, households must have an income below \$300,000 (if married filing jointly, otherwise \$150,000). Vehicles are eligible if their retail prices are below certain levels, and the law restricts vehicle eligibility based on where vehicles and batteries are produced and on the sourcing of major components. The Internal Revenue Service recently decided which vehicles are **currently eligible**, and I assume those vehicles remain eligible in 2030. Because of the requirements, for some manufacturers only certain vehicles are eligible for subsidies. For any manufacturer that currently sells any eligible vehicle, I assume that by 2030 all of its vehicles are eligible. In other words, these manufacturers would secure the necessary supplier relationships and production investments necessary to make all of their vehicles eligible.

For manufacturers that sell plug-in vehicles that are currently ineligible, I assume that a randomly selected 25 percent of their vehicles will be eligible in 2030. This is consistent qualitatively with the recent announcements about US battery and vehicle production facilities by companies whose vehicles are not yet eligible.<sup>6</sup>

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6 I have simulated additional scenarios that assume different percentages of eligibility than the 25 percent assumed in the four scenarios described in the main text. The conclusions about the distribution of welfare changes across income groups do not appear to depend on this assumption.

## 4. Results

This section presents the results from the four scenarios described above. I discuss the overall results first, followed by the distributional effects across income groups.

### 4.1. Aggregate Effects of GHG Standards

Table 2 presents the outcomes in the 2030 simulation year. Manufacturers have sufficient lead time to improve efficiency of gasoline engines and introduce new electric vehicles to comply with both regional ZEV and national GHG standards. The modeling simulates manufacturers' responses to these standards and the resulting prices and sales of each vehicle sold in 2030. From these outcomes, I compute manufacturer profits; consumer welfare that accounts for vehicle prices, fuel economy, horsepower, and the present discounted value of fuel costs over the vehicles' lifetimes; and the GHG emissions from production and consumption of gasoline and electricity.

The first column shows the baseline, which assumes that the 2026 standards are unchanged through 2030, and the second column shows the proposed standards. The average fuel economy of gasoline vehicles would be 33 miles per gallon in the baseline and 36 in the proposed scenario. These values represent EPA's estimate of the fuel economy that vehicles would achieve on the road, which is computed using a different test from the one used to assess compliance with the GHG standards. The latter is used for crediting in the modeling, and it is about one-third higher than the on-road fuel economy.

The baseline market share of plug-in vehicles is about 56 percent in 2030, which is slightly higher than the Biden administration's target. This market share lies in the middle of the **wide range** of recent forecasts that have included the 2026 GHG standards. The entry of electric vehicles that are not currently on the market accounts for most of the plug-in sales. The proposed standards would increase plug-in vehicles' market share to 62 percent, which is comparable to (though slightly lower than) EPA's analysis.

Expenditure on plug-in vehicle subsidies under the Inflation Reduction Act is about \$45 billion in the baseline and \$50 billion in the proposed standards. The baseline number is about 20 times greater than the estimate by the Joint Committee on Taxation, reflecting different assumptions about policies (such as the ZEV standards) and consumer preferences. However, the estimate is **similar to recent estimates** that have used different computer models. The proposed standards increase tax expenditure because of the additional plug-in sales.

**Table 2. Aggregate Effects of Standards in 2030**

	<b>Baseline (2026 stringency)</b>	<b>Proposed</b>	<b>10 percent more stringent than proposed</b>	<b>10 percent less stringent than proposed</b>
<b>Panel A. Fuel consumption rate, fuel economy, and plug-in sales share</b>				
Fuel consumption rate (gallons per mile)	0.021	0.014	0.013	0.015
Fuel economy (miles per gallon)	33	36	36	35
Share of plug-in sales in total sales	0.56	0.62	0.63	0.60
Federal purchase subsidy expenditure (billion 2022\$)	45	50	51	48
<b>Panel B. Consumer welfare and manufacturer profits</b>				
Consumers (billion 2022\$)	264	374	387	354
Profits (billion 2022\$)	156	151	150	152
<b>Panel C. Greenhouse gas emissions</b>				
Emissions (million metric tons)	488	379	364	403
Damages (billion 2022\$)	72	49	45	54
<b>Panel D. Total social welfare</b>				
Welfare change from baseline (billion 2022\$)		128	144	104

Panel B shows the consumer benefits of purchasing vehicles in 2030, after subtracting the present discounted value of the fuel costs over the vehicle's lifetime. The consumer welfare number measures the benefits of the vehicles compared with hypothetical purchases of used vehicles instead. Since the comparison is somewhat arbitrary—for example, in some computer models of the new-vehicle market, not owning any vehicle is the alternative—the focus is on the change in consumer welfare across scenarios rather than the level. The proposed standards would increase consumer welfare by \$110 billion, relative to the baseline.

The tighter GHG standards benefit consumers because people undervalue fuel cost savings when they purchase vehicles. Consider a hypothetical consumer who wants a particular vehicle and is offered the opportunity to purchase an otherwise identical vehicle that has lower fuel costs. Based on the purchase choices that consumers make, on average a consumer is willing to pay about \$35 for a hypothetical \$100 reduction in fuel costs—in other words, people don't pay as much as they should for the lower fuel costs.<sup>7</sup> Consequently, they buy vehicles with higher fuel costs than is privately optimal for them. By addressing these mistakes, the standards can increase consumer welfare.

Manufacturer profits are the difference between revenue and total costs, which include the costs of producing the vehicles, technology adoption costs for gasoline-powered vehicles, and entry costs for new electric vehicles. The tighter standards reduce manufacturer profits by about \$5 billion. This result differs from EPA's analysis since the agency assumes that manufacturers raise prices sufficiently to cover their costs. In contrast, my modeling indicates that competition constrains the extent to which manufacturers can increase their prices. That is, if an individual manufacturer tries to increase its prices enough to offset its higher costs, it would lose customers to other manufacturers. This competitive pressure prevents manufacturers from fully passing costs on to consumers.

Panel C shows the GHG emissions (carbon dioxide and methane) from producing and consuming gasoline and electricity to power the vehicles. The proposed standards yield climate benefits of about \$23 billion. Although not shown in the table, the climate benefits would exceed private welfare costs even if consumers fully valued fuel cost savings when purchasing vehicles.

The bottom of the table shows that the proposed standards would increase welfare by about \$128 billion. Although EPA does not report welfare effects of vehicles sold in a particular model year, it reports average annualized benefits from 2026 through 2055 of about \$48 billion to \$120 billion. The agency's numbers are computed differently from the numbers reported in Table 2, so the two should not be compared explicitly. Rather, this table shows that both my analysis and EPA's indicate large welfare gains from the proposed standards.

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7 **See here** for further description of the methodology for estimating consumer valuation. The estimate was made largely based on how much consumers pay for vehicles that are very similar except for fuel economy. For example, consumers may purchase the six-cylinder or the eight-cylinder version of the Ford F-150, where the two versions have different price, fuel economy, and horsepower but are otherwise similar to one another.

The final two columns show the effects of tightening or weakening the GHG emissions standards by about 10 percent, relative to the proposed standards. The results in Panel A are intuitive: tighter standards increase fuel economy, plug-in sales, and subsidy expenditure. Comparing the middle two columns in the table shows that tightening the standards beyond the proposed level would increase social welfare. This contrasts with EPA analysis concluding that the proposed standards yield similar welfare gains across the scenarios considered.

## 4.2. Effects of Standards by Consumer Income Group

For new-vehicle consumers (as distinct from the overall public), the benefits and costs of the proposed standards can vary across income groups for several reasons. First, low-income consumers **substantially undervalue fuel cost savings**, whereas high-income consumers undervalue by at most a moderate amount. If, hypothetically, there were no GHG or fuel economy standards, low-income consumers would buy vehicles that have higher fuel costs than would be optimal for them; the GHG standards benefit these consumers by reducing their fuel costs. In contrast, without standards, high-income consumers would buy vehicles that have only slightly higher fuel costs than would be optimal, and thus the standards give them smaller benefits.

Second, the standards increase sales of plug-in vehicles. Low-income consumers typically have lower demand for these vehicles, partly because of their higher prices, but also because they appear to have lower demand for plug-in vehicles themselves—whether because of lack of charging options, range anxiety, or something else. Consequently, low-income consumers are more likely to buy gasoline vehicles than are high-income consumers. When EPA sets GHG standards, one compliance option for manufacturers is to increase the price of gasoline vehicles relative to plug-ins, thereby increasing plug-in sales and lowering the manufacturer's average GHG emissions rate. Because low-income consumers are more likely to buy gasoline vehicles, these price changes impose higher welfare costs on low-income consumers. Thus, the second effect works in the opposite direction of the first one.

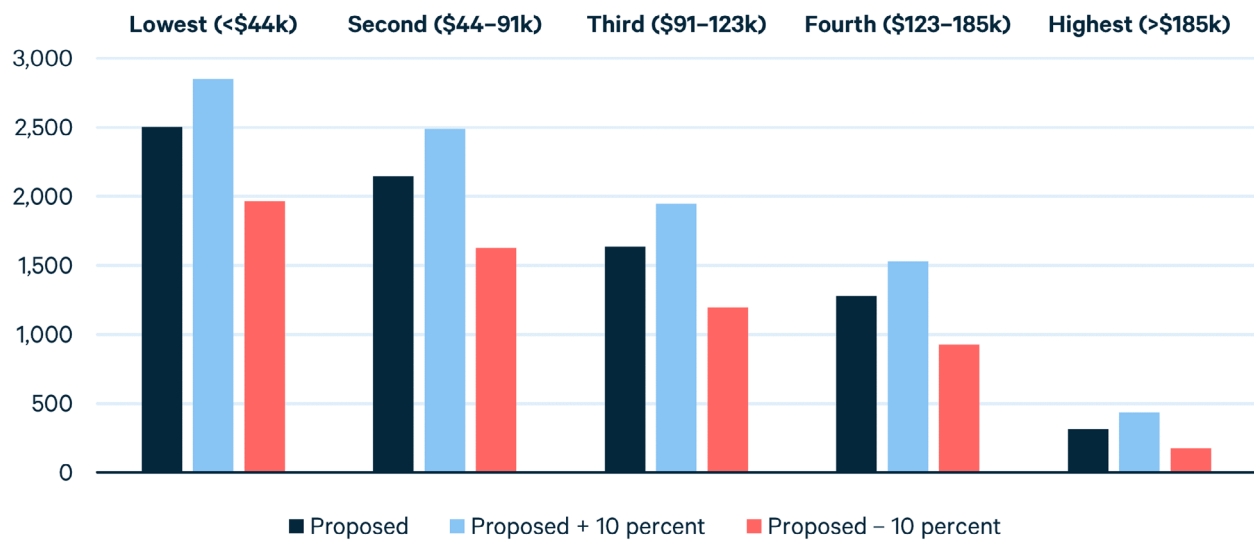
Third, the GHG standards affect entry decisions regarding electric vehicles. If the standards cause manufacturers to introduce low-price vehicles that low-income households tend to favor, those consumers would benefit more than high-income consumers. This effect can offset the second one if manufacturers systematically introduce more low-price plug-in vehicles. Thus, standards may benefit low-income consumers more or less than high-income consumers, depending on the relative strengths of these factors.<sup>8</sup>

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8 The standards can also affect used-vehicle prices because new and used vehicles are substitutes for each other. Because low-income consumers are more likely to buy used vehicles than are high-income consumers, used-vehicle price changes would affect the low-income consumers more. As in **this study**, for the modeling reported here, these welfare changes turn out to be relatively small.

Figure 1 shows the welfare changes caused by the three levels of standards from Table 2, relative to the baseline. The figure plots the average welfare change per household; for example, the dark blue bar indicates that the proposed standards would benefit the average household in the lowest income group (below \$44,000) by about \$3,500. These benefits include fuel cost savings net of any welfare cost of the policy (such as paying higher vehicle prices), and they do not include climate or local air quality benefits. The five income groups correspond roughly to income quintiles of new-vehicle buyers.<sup>9</sup>

**Figure 1. Change in Consumer Welfare per Household, Relative to Baseline**



That the bars diminish in height from left to right in Figure 1 means that the proposed standards benefit low-income households more than high-income households. This pattern holds for the three levels of stringency considered in the figure. The concentration of benefits among low-income households indicates that the first factor (undervaluation) outweighs the second (higher prices of gasoline vehicles relative to plug-ins). In the simulations, manufacturers introduce many low-price plug-in vehicles, which causes the second effect to be relatively small.<sup>10</sup>

9 A manufacturer can increase gasoline vehicles' fuel economy by adopting fuel-saving technology that makes the vehicles more efficient, or it can trade off horsepower for fuel economy. Historically, the standards have caused vehicle manufacturers to reduce vehicle horsepower, which reduces consumer welfare. Modeling of historical fuel economy and GHG standards indicates that these **welfare costs have been substantial**, particularly for high-income households, who have relatively large valuations of horsepower. However, analysis of the proposed standards indicates that trading off horsepower may be less widely used for compliance than it has been historically.

10 Plug-in vehicles with high retail prices are not eligible for the Inflation Reduction Act purchase subsidies. These price caps do not affect entry choices appreciably in the scenarios considered for this paper.

Although not reported in the paper, I have also estimated the effects of the proposed standards under different assumptions on gasoline prices, battery costs, costs of adopting fuel-saving technology for gasoline vehicles, and vehicle eligibility for the purchase subsidies. Across the scenarios, plug-in market shares and vehicle prices vary considerably, but the main results hold across all the scenarios: large overall welfare gains for the tighter standards, with most of the gains enjoyed by lower-income groups.

## 5. Discussion and Conclusions

In April 2023, EPA proposed reducing average GHG emissions rates of new passenger vehicles by about half between 2026 and 2032. Focusing on vehicles sold in 2030, I show that the proposed standards would increase social welfare substantially, as benefits to consumers and climate far outweigh costs to manufacturers. Across consumers, low-income households benefit more than high-income households because of the greater fuel cost savings.

Two main factors explain the distribution of the benefits across income groups. First, based on vehicle purchase decisions from the 2010s, low-income consumers undervalue fuel cost savings substantially and purchase vehicles with higher fuel costs than is optimal. This undervaluation is less pronounced for high-income households, and low-income consumers benefit more from the fuel cost reductions caused by the standards.

The second factor is that according to the modeling, vehicle manufacturers will introduce many low-price electric vehicle options. Such vehicles are particularly attractive to low-income vehicle buyers, and the expanded set of vehicles available to consumers mitigates some of the welfare costs of the standards. If it proves challenging for vehicle manufacturers to produce and market low-price electric vehicles, low-income consumers will likely benefit less from the proposed GHG standards than these results indicate.

Two caveats pertain to these results. First, I do not include local air quality improvements that the GHG standards would cause. Recent analysis indicates that plug-in vehicles **reduce levels of fine particulates** compared with gasoline vehicles. The monetary value of these benefits may be roughly one-10th the value of the climate benefits and including these benefits would increase the estimated welfare gains of the proposed standards. Including local air quality effects would also affect the distribution of benefits across income groups if the air quality improvements are geographically correlated with income.

The second caveat is that the consumer benefits are measured relative to the hypothetical purchase of a used vehicle instead of a new one. In other words, the welfare effects pertain to new-vehicle consumers rather than all US households. The hypothetical represents a “typical” used vehicle, without analyzing the prices and sales of individual used vehicles. The GHG standards may have nuanced effects on used-vehicle markets, particularly after accounting for how GHG standards will interact with other policies, such as the **subsidies that the Inflation Reduction Act provides** for purchasing used plug-in vehicles.

