



June 11, 2021

California Air Resources Board
Sustainable Transportation and Community Division
1001 I Street
Sacramento, CA 95814

Re: Advanced Clean Cars II Rulemaking May Workshop

Consumer Reports¹ thanks staff for the opportunity to comment on the Advanced Clean Cars II (ACC II) workshop.

The Advanced Clean Cars rules have the opportunity to accelerate marketplace change and bring innovative, money-saving technology to consumers. These rules must spur a paradigm shift in transportation that will save consumers money, alleviate congestion, reduce air and climate pollution, and improve public health.

Attachments

1. California Survey [Report](#)
2. Electric Vehicle Ownership Costs [Report](#)
3. National Fuel Economy [Survey](#)
4. Consumer Reports' Green Choice [Article](#) and [Release](#)
5. Consumer Reports' Electric Cars 101 [Article](#)
6. Consumer Reports' Electric Vehicle [Fact Sheet](#)
7. Consumer Reports' Un-SAFE Rule Study [Update](#)

1. ARB should adopt regulations that put California on a path to a tipping point where well over half of new passenger car sales are ZEVs by 2030

When it comes to electric vehicles, setting a strong target to meet by 2030 is probably the most important decision ARB will make. Ensuring that significantly more than half the cars and light trucks sold by automakers in California are electric will help push the industry to a tipping point, where the ZEV market is on a path to become truly self-sustaining and all automakers are finally investing in the technology as a profitable, mainstream product line rather than for the benefit of a green halo or for compliance purposes.

The National Academies of Science, Engineering and Medicine recently released a report indicating that, in order to reach a net-zero carbon economy by 2050, at least 50% of new car sales must be zero-emission by 2030 nationwide.² Given California's leadership and

¹ [CR language]

² National Academies of Science Engineering and Medicine, *Accelerating Decarbonization of the U.S. Energy System*, 2021

head start in this market, the state's air quality problems, and the ever growing impacts of climate change on consumers and the state's economy, the state can and should set sites even higher. Delaying action will both drastically increase the costs of transitioning to a zero carbon economy, and the costs borne by vulnerable populations from climate change.³ The conclusions are clear: now is the time to act, and the costs of action will be far lower than the costs of inaction.

The ZEV program has been instrumental in bringing a growing number of ZEV models to market and increasing sales, an outcome that would not have occurred with only a fleet-wide GHG or criteria pollutant standard. The role of the ZEV program must evolve into one that ensures rapid and sustained ZEV deployment and commercialization to help ensure that consumers have access to vehicle choices that reduce costs and enable the state to meet its public health and climate goals. Basically, the program must ensure that automaker aspirations become production plans.⁴

A strong ZEV program will encourage the sale of ZEVs that will produce significant emission reductions and provide consumers with wide-ranging choices from a broad mix of ZEV technologies across all passenger vehicle categories. Such a ZEV program will also provide the certainty investors need to develop charging and fueling infrastructure.

Additionally, EVs already provide significant consumer benefits, and a strong ZEV program will help the maximum number of consumers realize the cost-savings of an EV. Our analysis⁵ shows that today's mainstream EVs significantly lower the total cost of ownership for consumers, which in turn allows consumers to spend those savings in the broader economy:

- Owning an electric vehicle will save the typical driver \$6,000 to \$10,000 over the life of the vehicle, compared to owning a comparable gas-powered vehicle.
- The average EV driver will spend 60% less to power their vehicle than the owner of a gas-powered vehicle.
- EV owners are spending half as much to repair and maintain their vehicle as owners of gas-powered vehicles; with much of that savings benefiting used car buyers.

2. As part of this proposal, ARB should adopt strong Greenhouse Gas (GHG) standards through at least model year 2030

California has led the nation and the world with new vehicle greenhouse gas emissions since 2004, and the federal government has [proposed to reinstate](#) California's authority to do so through Model Year 2025. Our analysis shows that reducing these emissions will save consumers a lot of money.⁶

California accounts for about 12% of the US automotive market.⁷ CR found \$190-\$240 billion

³ Energy Innovation, Costs of Delay, 2021

⁴ Consumer Reports, *CR response to General Motors EV announcement: Consumers need more than aspirations*, January 28, [2021](#)

⁵ Consumer Reports, *Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers*, Chris Harto, [October 2020](#)

⁶ Consumer Reports, *Fact Sheet, Greenhouse Gas Reductions*, [4/22/21](#)

⁷International Council on Clean Transportation (ICCT), *California's continued electric vehicle market development*, May [2018](#)

in consumer savings for Californians through 2050 from a standard that would cut new vehicle GHG emissions 60 percent by 2030.⁸

California must strengthen the LEV GHG standards to ensure progress continues, especially for internal combustion engine vehicles (ICEVs) given that they will continue to remain on the road for some time. This also means improving the current design of the standards to ensure large ZEV volumes do not result in ICEVs backsliding on emissions or foregoing available technology improvements

Without standards providing guardrails for the market, automakers are less likely to deliver cost-saving emissions-reduction technology to consumers. In 2020 the EPA found that the greenhouse gas emissions of new vehicles sold in the U.S. increased for the first time in several years. California, as a national and global clean transportation leader, must not cede its authority over emissions reductions. California consumers need the benefits of stronger GHG standards and cannot rely on the federal government to deliver or not someday roll back national standards yet again.

3. ARB must create regulations that focus on equity and deliver equitable outcomes in GHG and pollution reductions

ARB should explore innovative ways that the program can incentivize the sale and placement of EVs to disadvantaged communities, considering the disproportionate exposure to vehicle tailpipe emissions that they live with every day.⁹ The program should be updated in a way that will advantage communities without significantly decreasing the number of electric vehicles that would otherwise have to be sold. ARB must also create additional and complementary incentive programs to prioritize funding to equity programs as opposed to providing incentives for those who are not low/moderate income.

Lower income consumers in the secondary market are trapped by market choices of other, wealthier drivers, and these standards are key to expanding clean options in the used market.

This is also a pocketbook issue. Higher fuel efficiency in cars and trucks is one approach, along with shifting to lower carbon fuels, is one tool to reduce GHGs and it also lowers annual fuel spending. Low-income households spend more money fueling cars than buying them,¹⁰ and are particularly sensitive to gas prices. One recent study found “as a percent of income, savings on fuel are greatest for lower income households.”¹¹ Increased availability of cars meeting LEV standards will help lower income families by reducing fuel costs.

While the price of other consumer goods has risen over the past two decades, vehicle prices in real terms have remained flat, even as passenger cars and trucks go farther on every gallon of gas (see figure 2).¹²

⁸ Assuming national savings are roughly distributed based on state-by-state auto sales.

⁹ American Lung Association, *Disparities in the Impact of Air Pollution*, accessed [6/11/21](#)

¹⁰ More Mileage for Your Money: Fuel Economy Increases While Vehicle Prices Remain Stable, March 15, 2017, <https://consumersunion.org/research/more-mileage-for-your-money-report/>

¹¹ Greene, D. and J. Welch. 2016. The Impact of Increased Fuel Economy for Light-Duty Vehicles on the Distribution of Income in the United States. Report Prepared for Oak Ridge National Laboratory and the Energy Foundation. Available at:

http://bakercenter.utk.edu/wp-content/uploads/2016/09/Equity-Impacts-of-Fuel-Economy-Report_final.pdf.

¹² Eric Junga, *Fuel economy is going up. Vehicle prices are holding steady*, American Council for an Energy-Efficient Economy, November 16, 2017, <http://aceee.org/blog/2017/11/fuel-economy-going-vehicle-prices-are>.

Figure 2. Average New Vehicle Transaction Price for Cars, Trucks, and the Combined Fleet



Consumer spending data, discussed below, shows that trends in new and used car pricing has benefited moderate-income households and that the LEV Standard will lead to additional benefits for this cohort. This is consistent with the fact that Americans in the lowest income quintile spend 26% of their transportation budget on gasoline and motor oil, while those in the top quintile, which represent most new car buyers, spend just 16%. The average American spends about 21%.

The benefits of reduced GHG emissions in new vehicles also make their way to the used car market, which accounts for 70 percent of vehicle sales annually, and an even higher percent among mid to lower income families. Lower-income households are more likely to buy a used car, and they benefit from the rapid depreciation of new car value. Buying a used vehicle compliant with LEV standards enables a used car buyer to enjoy the fuel savings at even a lower cost. Those purchasers of those used cars meeting the LEV standards, in particular will enjoy the same stream of fuel savings as a new vehicle purchaser, but will pay only a fraction of the incremental cost for the cleaner, more fuel-efficient technology due to depreciation (the average new passenger vehicle depreciates by 60% within the first five years of its life).

Additionally ARB should ensure that ZEV technology is deployed in an equitable manner. Low income and underserved consumers deserve to access this technology in order to begin to build environmental justice into a system that, through highway construction and air quality issues, has abused these consumers for decades.

4. ARB should adopt a rule that aggressively phases out ZEV credits as requirements increase

Appropriately designed and used, credits can provide reasonable flexibility for automakers, but they can also be abused and delay much needed progress.

Flexibility was important early in the business cycle, but as the marketplace approaches a tipping point, that flexibility becomes less and less necessary, and threatens the integrity and goals of the program. Already, the incentive credits in the program have resulted in fewer emission reductions and total ZEV deployments from the program in California than had been anticipated, reducing consumer access to clean car choices and slowing progress on pollution.¹³ As the goal of the ZEV program transforms from kicking off a market to helping establish a sustainable one, ARB should design a ZEV program crediting structure to provide a high degree of certainty that actual ZEV sales begin to match the 2030 tipping point target and that projected emissions reductions are realized.

To that end CR welcomes the new rules regarding credits lifetime and applicability and looks forward to more detailed scenario analysis from ARB to shed light on potential real world impacts under scenarios where automakers maximize their use of the system. Depending on the outcome of those analyses, consumers may need even tighter rules to ensure credits do not become loopholes that undermine the intention and benefits of the program.

5. ARB should adopt a rule that includes Consumer protections regarding electric vehicle durability, warranties and batteries

While the costs of producing batteries continue to drop, the battery is the most expensive part of an electric vehicle.¹⁴ And, by shifting from gasoline to electricity, it is the battery that enables the electric vehicle to eliminate tailpipe pollution and reduce greenhouse gas and other pollutants when combined with California's relatively clean grid.¹⁵ Therefore, reduced capacity or complete failure of the battery pack represent a significant risk to emissions reductions given the cost of a replacement. Strong corresponding consumer protections regarding durability, battery health and warranties are therefore critical to the emissions and economic success of the ZEV program. CR welcomes the rules staff proposed for battery health and durability, as well as warranties.

These provisions are especially critical for consumers in the secondary vehicle market. As noted above in the equity section, used cars make up about 70% of sales in the automotive market, lower income consumers are especially price sensitive and spend a disproportionate amount of their income on transportation. As more EVs enter the secondary market in the coming years, it is imperative that consumers have protections against poorly designed or manufactured batteries that diminish in capacity or fail early. Our most vulnerable populations at the forefront of climate and air quality hazards deserve consumer protections addressing the lifetime of the vehicle, its battery, and its reparability.

Additionally CR supports effective battery labeling for the purpose of recycling. ARB should also continue to explore complementary programs for battery reuse and recycling to help improve the sustainability of ZEVs, avoid new demands on resources and disposal, and help maximize the value of batteries.

6. ARB must factor in a "Right to Repair" for electric vehicles and batteries

¹³ California Air Resources Board, *Advanced Clean Cars, Midterm Review*, [2017](#)

¹⁴ Bloomberg, *Batteries For Electric Cars Speed Toward a Tipping Point*, [12/16/20](#)

¹⁵ (<https://advocacy.consumerreports.org/research/how-clean-are-electric-vehicles-in-your-state/>)

ARB must ensure that consumers have the choice to fix their own vehicle equipment, if they can, or to have it fixed by a repair servicer of their choosing, including servicers independent of the manufacturer.

Our organization has long supported this “right to repair.” It is important to safeguard and maintain consumers’ ability to exercise their full rights of ownership over the products they purchase, including the right to repair them, and the right to resell them, even as technology evolves.

7. ARB should aggressively reduce NMOG and NOx emissions from the internal combustion engine vehicle (ICE) fleet

In order to meet important air quality goals that affect the health of Californians, especially those living in disadvantaged communities, ARB must adopt a rule that aggressively reduces tailpipe emissions from ICE vehicles. ARB’s initial approaches around new emissions bins, removing ZEVs from fleet average requirements, adoption of aggressive driving cycles and efforts to better address cold start and evaporative emissions represent important progress. We look forward to more details and scenario analysis to better evaluate their impact and sufficiency to protect consumer health.

8. ARB should consider real-world standards for Plug-in Hybrids

ARB’s mid-term evaluation of the vehicle standards identified the potential for excess emissions from certain PHEVs. ARB should implement improved testing methods and procedures to ensure vehicles are meeting the standards through robust on-road testing.

PHEVs can be an important part of cleaning up the transportation sector while providing consumers with the right vehicle for their needs. There are many highly ranked models on the market right now that are not only affordable, but can help adoption of EVs in the long run.¹⁶ CR would be open to some very limited relaxation of the 50-mile range requirement in the near-term if it leads to significantly more plug-in vehicles on the road. Most PHEVs are currently in the 25-40 mile range, and, until battery energy densities increase further, a 50 mile range may cause reductions of functionality (take up storage room, or adverse handling due to weight) from carrying 2 powertrains. CR recommends a cap at 40 miles all-electric range for the first few model years that gradually increases to 50 miles by the middle or end of the rule period, depending on the impact on emissions.

Warm Regards,
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¹⁶ Consumer Reports Proprietary Rankings and Consumer Data