



July 26, 2024

Chair Randolph and Members of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Consumer Reports Comments on Advanced Clean Cars II Amendments Workshop

Consumer Reports (CR) thanks the California Air Resources Board (CARB) and staff for hosting the recent public workshop on amendments to the Advanced Clean Cars II Regulation on June 26, 2024.

I. Introduction

Founded in 1936, CR is an independent, nonprofit, and nonpartisan organization that works with consumers to create a fair and just marketplace. Known for its rigorous testing and ratings of products, CR also advocates for laws and corporate practices that are beneficial for consumers. CR is dedicated to amplifying the voices of consumers to promote safety, sustainability, and fairness. The organization surveys millions of Americans every year, reports extensively on the challenges and opportunities facing today's consumers, and provides ad-free content and tools to more than 5 million members across the United States.

Since its enactment, the Advanced Clean Cars (ACC) rules have encouraged the adoption of clean, cost-saving technology by automakers. These rules have spurred innovation in transportation that has offered consumers various options that have saved them money, contributed to reductions in air pollution and greenhouse gas emissions, and contributed to improvements in public health. The recently enacted ACC II rules will continue these efforts, and further increase the number of clean vehicle options available for consumers to choose when deciding what vehicle will best meet their needs. CR supports CARB's efforts to make amendments to the ACC II rules that will improve experience with purchasing and owning a clean vehicle.

II. Consumer-facing vehicle label

As a greater number of consumers consider clean vehicle alternatives and the consumer market for clean vehicles evolves, it is important that consumers have the ability to access the necessary information they need to make a decision in their car-buying process. To that end, CR thanks CARB for proposing changes to California's consumer-facing vehicle labels to better account for the information consumers want about their potential new vehicle. CR would suggest the following improvements to the data that is provided to consumers.

A. Real-world range data

Car and Driver has highlighted, and Consumer Reports testing has confirmed, that EPA's current testing for electric vehicle (EV) range does not always match with real world vehicle performance.¹ A big portion of the problem is the fact that EPA only publishes a combined city/highway EV range number. However, EVs tend to achieve shorter range at real world highway speeds, which is when range is most often relevant to consumers. Also, range is only estimated under ideal weather conditions, leaving consumers with little information about how their vehicle might perform in hot or cold weather.

While a single combined number is generally useful in comparing different vehicles against each other, CR urges CARB to require consumer labels to include more detailed range information. In an ideal world consumers would have access to online data providing details about how both temperature and speed would affect their vehicle's range. At a minimum, data should be provided to consumers about range at typical highway speeds under typical weather conditions as well as in hot and cold weather. This would be most useful in helping consumers understand the true performance they can expect from their vehicle, and better determine if it will meet their needs.

CR also urges CARB to investigate whether it might be possible now or in the future to estimate and provide information to consumers about the effect of battery degradation on their vehicle's range after a set period of time (possibly 5 or 10 years into the future) to provide a more complete picture of the performance they can expect from their vehicle over time.

¹ *Comparison of On-Road Highway Fuel Economy and All-Electric Range to Label Values: Are the Current Label Procedures Appropriate for Battery Electric Vehicles?*, SAE International, April 11, 2023, <https://www.sae.org/publications/technical-papers/content/2023-01-0349/>.

B. Alternatives to Mile Per Gallon Equivalent (MPGe)

A given EV is typically far more efficient than an equivalent vehicle with an internal combustion engine, but more useful metrics are needed to help EV shoppers understand the efficiency of different vehicle options. More efficient EVs can have a number of important benefits, including reducing fuel cost and upstream emissions, while using smaller batteries to deliver the same range as less efficient EVs. Smaller batteries can reduce vehicle cost, reduce critical minerals usage, and reduce vehicle weight.

The current standard metric for EV efficiency, miles per gallon equivalent (MPGe), is somewhat useful in helping consumers understand how EVs compare with gas and hybrid vehicles in terms of efficiency, but it is not a very useful metric for vehicle owners. CARB should reconsider the required use of MPGe on the window sticker and explore replacing or supplementing it with a more useful efficiency metric. In general, most modern EVs present efficiency in terms of miles per kilowatt hour (mi/kWh) on their trip odometers, which is more consistent with how consumers are used to thinking about efficiency in terms of miles per gallon.

For plug-in hybrids, CR recommends presenting both the efficiency of the vehicle running only on electricity in mi/kWh, as well as the efficiency of the vehicle running only on gasoline in mpg. The current combined MPGe metric used for PHEVs can be confusing to consumers, and doesn't give much information about what consumers can expect about how the vehicle will perform utilizing different fuel sources.

C. Develop and Present Standard Metrics for Charging Speeds

Charging speed is becoming an increasingly important differentiator in terms of the convenience of driving an EV longer distances. While the range of EVs is still important, it is charging speed that can most affect how convenient longer trips in EVs will be. Currently, automakers provide consumers with cherry-picked charging speeds, often based upon narrow slices of the vehicle's charging curve under ideal conditions.

CR supports CARB's proposal to include both AC and DC charge rate metrics for consumer access. This will give consumers a more standardized way to understand how long they will have to spend charging to cover a specific distance using public fast charging. CR generally supports the proposed metrics in terms of range added over time. Miles added per hour makes sense for AC charging. Consumer Reports currently uses range added per minute for DC charging, but is agnostic to the question of whether the metric is presented per minute or per ten minutes as CARB has proposed.

CARB should require that these metrics be calculated as averages over the most commonly used portions of the charging curve. CR would recommend using 10% to 80% state of charge for the testing protocol to prevent manufacturers from being able to cherry pick specific sections of the vehicle charging curve where the vehicle charges the fastest. CARB should also require that the maximum charging power be presented with any charging speed metrics.

CR also urges CARB to investigate the feasibility of presenting DC charging speeds not only under ideal conditions with the fastest charger the vehicle can possibly utilize, but also to consider providing charging information under other conditions, such as at a 150 kW charger (the current requirement for NEVI stations) and charging speeds tested or estimated under cold weather conditions. Much like EV range, EV charging speeds can vary significantly based on conditions, and providing consumers more information than just the maximum feasible performance under ideal conditions will allow consumers to make more informed decisions.

D. Provide EV Battery Information

Consumer access to EV battery information will be a critical piece of educating them on the ability of their vehicles. This information also provides useful data for comparison between vehicles. Two separate vehicles might both have the same rated range, but achieve it with wildly different battery sizes. Providing that information to consumers can help them potentially consider more efficient options.

CR recommends a requirement that manufacturers provide both the usable battery capacity and the total installed battery capacity of the vehicle on the window sticker, in addition to information regarding the battery warranty.

Additionally, given that certain types of batteries may perform differently under different conditions, CR recommends that CARB consider requiring manufacturers to provide the consumer with basic battery chemistry details. This type of information may become even more important as the market explores more diversity in battery chemistries.

E. QR Code

While it is important to ensure that consumers have the information necessary to make a decision about the purchase of a new vehicle, presenting too many data points could be overwhelming to consumers, especially for those who are just beginning to enter the clean vehicle market. Automakers can, and do, provide consumers with useful

information about their vehicle options, but it is critical that this information be standardized, intelligible, and accessible.

CR supports CARB's proposal to include a QR code on consumer-facing labels as an opportunity to provide consumers with additional detailed information regarding their vehicle for those who seek it. We welcome the opportunity to work with CARB staff to identify which information is necessary to be on the standard consumer-facing label, and which information should be made accessible behind a QR code.

Additionally, as the clean vehicle market continues to evolve and consumers decide which metrics best help them make their car buying decision, CARB should allow for automakers to include additional information behind the QR code as they see these consumer demands change. The regulation should offer flexibility in the data offered, so long as the additional information comes secondary to the required data.

III. Conclusion

CR thanks CARB for their efforts and diligence in addressing necessary changes to the ACC II rule. We look forward to shared efforts throughout the amendment process.

Respectfully Submitted,

Dylan Jaff
Policy Analyst, Consumer Reports