



May 10, 2024

Clerks' Office
California Air Resources Board
1001 I Street
Sacramento, CA 95814

SUBMITTED ELECTRONICALLY AT: <https://ww2.arb.ca.gov/public-comments/low-carbon-fuel-standard-workshop-april-10-2024>

Re: April 12, 2024, Workshop on Proposed Amendments to the Low Carbon Fuel Standard ("LCFS")

Rivian Automotive, LLC, ("Rivian") thanks the staff for hosting the April 12, 2024, workshop on the proposed amendments to the LCFS and for providing an opportunity for public comment on the discussion. The workshop covered several important topics, including a review of the crucial role the policy has played in electrifying transportation in California. The LCFS clearly and strongly benefits providers of electricity as a transportation fuel and this is at the heart of Rivian's ongoing support for the regulation and others like it across the country.

However, the workshop did not directly address questions raised by the ISOR regarding the use of residential charging base credits. This is an important aspect of the regulation that merits further discussion. While Rivian finds that the MHD CFR concept has promise, we continue to believe that a reconstituted LD CFR, administered by automakers, is the highest and best use of base credits. If CARB elects to move forward with the MHD CFR, important questions still need to be settled, including in what amount rebates should be issued. We propose a tiered rebate structure and amounts below.

We also recommend that CARB implement a stepdown greater than 7 percent and take this opportunity to revise the light-duty ("LD") energy economy ratio and geofencing radius.

Keep the World Adventurous Forever

Founded in 2009, Rivian is an independent U.S. company headquartered in California. With over 16,000 employees across the globe, Rivian's mission is to Keep the World Adventurous Forever. Rivian's focus is the design, development, manufacture, and distribution of all-electric adventure vehicles, specifically pickups, sport utility vehicles ("SUVs"), and commercial vans. Key to the success of our mission, these vehicles will displace some of the most polluting conventional vehicles on the road today.

Rivian brought the first modern electric pickup to market in 2021 when we launched the R1T from our manufacturing facility in Normal, Illinois, followed shortly thereafter by the R1S SUV and the EDV commercial van for Amazon. The R1T and R1S provide all-electric options in segments where added utility is a necessity. The R1T has an EPA-certified range of up to 410 miles. The R1S is certified at up to 400 miles. The truck features 11,000lbs of towing capacity, while the R1S is a seven-passenger full-sized SUV. Both are well-equipped for off-roading in a range of climates. Separately, our Class 2b and 3 commercial vans eliminate tailpipe emissions from last-mile delivery. Rivian is committed to producing 100,000 vans for our

launch customer, Amazon, with more than 13,500 already in service across the U.S. Other fleets are now also deploying Rivian vans in their operations. In March 2024, Rivian revealed future products expanding our vehicle lineup. The R2, coming in 2026, is a five-passenger SUV starting at \$45,000. Looking ahead, the R3 and R3X will expand the Rivian brand into a smaller vehicle form.

Beyond our vehicle lineup, Rivian is also building a network of public DC fast chargers across the country known as the Rivian Adventure Network (“RAN”). More than 14 RAN sites with 84 dispensers are already up and running in California alone.

The Staff Underscored the Significant Value Generated by the LCFS for Transportation Electrification

Rivian appreciates the time spent by staff at the workshop reviewing the benefits of the LCFS for EVs. As an EV manufacturer and charging provider, we strongly support the policy primarily because of what it offers our customers, our business, and our industry as we work to achieve scale and profitability.

That is also why the future of the regulation, as determined by this rulemaking, is so important. We reiterate our prior comments that concluding this process with an ambitious set of amendments in 2024 is crucial for market certainty. We welcome the timeline presented by the staff at the workshop indicating that amendments will go into effect later this year or in early 2025.

Further Discussion of the Future of Residential Base Credits is Necessary

We appreciate that staff had many topics to address in the April workshop and with limited time and significant public interest in other aspects of the regulation, Rivian understands the need to prioritize certain topics. Nonetheless, the ISOR introduced a significant revision to the allocation and use of base credits. Discussion of the proposed changes to base credits in a workshop setting would have been valuable. The previous approach to using base credits has been dogged by significant implementation challenges and, with the CFR now suspended, has unfortunately run into a dead end. There is a genuine debate to be had about the best path forward for this aspect of the regulation.

Even if CARB moves forward with the ISOR proposal, many issues remain open and unresolved—for example, the structure of the MHD rebate program. We offer thoughts on this below. But first, Rivian wishes to reiterate the value of reforming and restoring the LD CFR program as automaker-run incentive.

Awarding Automakers a Greater Share of Base Credits Would Support Implementation of a Reformed LD CFR

In previous comments, workshop input, and engagement with CARB, Rivian has recommended regulatory amendments to allow EV manufacturers to share in base credit generation. Clean fuels policies are intended to be market-based systems that create incentive structures for private sector investments by the providers and users of clean transportation fuels. In the light-duty vehicle sector, the two most important market participants are vehicle manufacturers and their customers. Consistent with the core principles of the LCFS, the policy should encourage the participation of these market actors and reward them for making investments in EVs.

Rivian’s preferred approach would establish automakers as the priority generators of base residential charging credits. With a sufficiently large allocation of base credits, manufacturers whose vehicles generate such credits (both light- and medium-duty) could operate the Clean Fuel Reward (“CFR”) directly, and more efficiently and sustainably than under the utility-led framework.¹ Since CARB decided to sunset the Clean Vehicle Rebate Project, the CFR would be the last universally available EV purchase incentive in the state—a key tool for sustaining the EV market’s growth into the mainstream of the consumer market.

The auto industry broadly endorses this approach. More detail on how an automaker-administered CFR would be implemented is available in the joint automaker comment letter submitted by the Alliance for Automotive Innovation to the workshop docket. Rivian is a signatory to that letter.

As an Alternative, Rivian Believes the MHD CFR Proposal has Merit—But Discussion of Implementation Details is Needed

As stated in our comments on the ISOR, allocating non-holdback base credits to a CFR for qualified MHD EVs could be beneficial. As a general proposition, Rivian strongly supports targeting additional incentive dollars at fleet buyers of MHD EVs. However, as we noted previously, many key issues remain unresolved including rebate amounts, how the program would be managed day-to-day, and how the proposed CFR would interact with other incentives.

Rivian proposes the following rebate amounts and tiered structure as a starting point for discussion. If a vehicle is eligible to satisfy ACT or ACF obligations, it should be eligible for the MHD CFR if purchased by a qualifying business, non-profit, or other entity for fleet use.

Class	Rebate Amount
2b-3	\$10,000
4-8	\$40,000
7-8 Tractor	\$80,000

Table 1. As a starting point for discussion, Rivian proposes these rebate amounts and tiered structure for a potential MHD CFR program.

We estimate that LD base credits could annually fund many thousands of rebates in these amounts, sufficient to support all ZEV sales to ACF-exempt fleets statewide.² However, **we request and would welcome staff analysis of various scenarios for the proposed CFR to better inform both Board and stakeholder understanding of what the base credit pool could support.**

As part of this analysis, we also recommend that staff examine and reconsider the tradeoffs involved in limiting the CFR’s scope. The proposed focus on ACF-exempt fleets is well intentioned but essentially mirrors fleet eligibility restrictions under HVIP. We appreciate that smaller fleets might face relatively

¹ Rivian has previously submitted comments along these lines both individually and in partnership with shared-vision partners. See for example comments submitted by [Rivian](#) and in [coalition](#) with Audi, Tesla, and Bridge to Renewables.

² Rivian estimate based on 38 percent of modeled LD base credit revenue funding rebates in the amounts proposed. Base credit revenue was estimated based on the CI standard, grid CI curve, and credit prices in the Proposed Scenario. Annual ZEV sales to ACF-exempt fleets were assumed to correspond with ACT sales requirements.

greater resource constraints and show a reduced appetite for risk, meaning that policymakers need to consider additional measures to spur the purchase of MHD ZEVs by those operators. But the MHD transition is still in the earliest phases across all fleet sizes and the economics of ZEV purchases remain challenging even for the best-resourced fleets. The ACF regulation will clearly drive many additional ZEV sales, but Rivian believes that providing purchase incentives to all buyers is worthy of consideration. Purchase incentives might encourage fleets to turn their vehicles over more quickly than is required or to over-comply with the Milestone Pathway. At a minimum, Rivian recommends that CARB consider limiting the rebate to ACF-exempt fleets in a later year to account for the delayed implementation of ACF.

CARB Should Implement a Stepdown Greater than 7 Percent

Staff sought feedback on how to approach questions of increased stringency and stepdown percentages.

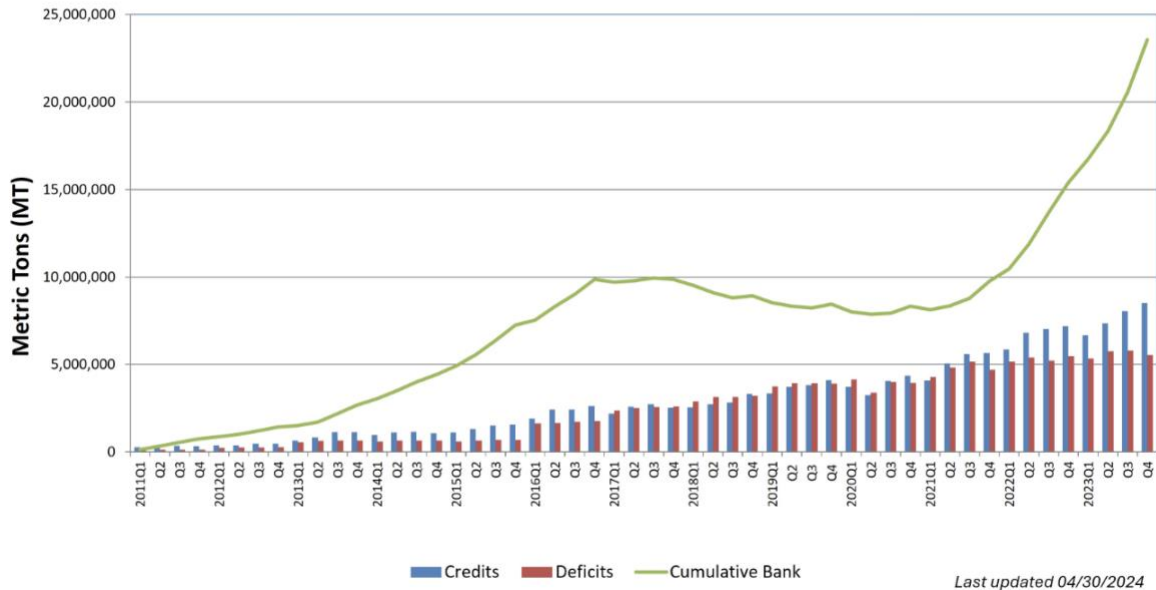
Short-term conditions in the LCFS credit market are a pressing concern for credit generators. EV manufacturers and charging networks like Rivian are on the cusp of rapid growth but currently face a challenging macroeconomic climate. Decisive regulatory action in the short-term to course-correct the LCFS and the credit market is vital for supporting the success of these enterprises.

Responding to the ISOR, Rivian initially argued for a stepdown at least 5 percent. Recent market conditions and data made available for the workshop justify a more substantial adjustment. Indeed, the latest compliance data, model outputs, and staff analysis presented at the workshop lead us now to conclude that even a stepdown of 7 percent is likely inadequate.

As of Q4 2023, the cumulative credit bank stood at approximately 24 million metric tons (“MT”). Moreover, the bank has grown extremely quickly over the past two years.³ Based on the trend since the start of 2020, we estimate that the bank could total almost 35 million MT *by the end of 2024*, immediately preceding the earliest opportunity for regulatory amendments to take effect.

³ California Air Resources Board, *LCFS Data Dashboard*, available at www.arb.ca.gov/resources/documents/lcfs-data-dashboard.

**Total Credits and Deficits for All Fuels Reported and Cumulative Credit Bank
Q1 2011 – Q4 2023**



Source: www.arb.ca.gov/resources/documents/lcfs-data-dashboard.

Such a balance would amply accommodate a stepdown of at least 9 percent. The staff analysis presented at the workshop shows that a 9 percent stepdown would force a bank draw of approximately 27 million credits.⁴

Model results made available to the public only underscore our view that the market could support a larger stepdown. For example, the modeled scenarios show consumption of renewable diesel (“RD”)—a major credit generator—falling in the near-term, an outcome that seems extremely unlikely given recent trends in RD consumption. With respect to LD EVs, modeled electricity for 2022-2024 appears lower than we would expect given known EV stocks in those years.⁵ Combined, our review suggests the possibility of greater credit generation than portrayed by the model, with implications for the feasibility of various stepdown scenarios. Stakeholders would benefit from further discussion of the model outputs, their consistency with real-world outcomes, and how they do or do not support various stepdown scenarios.

Overall, we find that the available evidence calls into question whether a stepdown of just 7 percent would sufficiently rebalance the market. Rivian encourages reconsideration of a larger adjustment beginning in 2025.

Revise the EER and Geofencing Radius

CARB should take this opportunity to propose revisions to the LD EV EER and geofencing radius used to identify eligible residential charging activity. While the ISOR did not include any discussion of potential

⁴ California Air Resources Board, *California Low Carbon Fuel Standard Workshop* (slides), April 10, 2024, available at www.arb.ca.gov/sites/default/files/2024-04/LCFS%20April%20Workshop%20Slides.pdf.

⁵ Rivian estimates of actual electricity consumption based on EV stocks reported by the California Energy Commission, assuming average vehicle efficiency of 0.33 kWh/mi and annual eVMT of 10,000.

changes to these aspects of the LCFS, and Rivian did not comment on these issues in our initial comments, with the staff now exploring potential changes to the proposed regulatory amendments we want to take this opportunity to recommend these issues for consideration as part of any 15-Day package.

- **Revise the LD EER.** The current value of 3.4 stems from a determination originally made by CARB in the 2011 rulemaking—and is thus now more than a decade old.⁶ Continuing to use an outdated EER systematically undervalues the real-world displacement of fossil fuels achieved by EVs, and the true role EVs play in decarbonizing the transportation fuel pool in support of the LCFS’ objectives. Examples of more appropriate EER values exist. For instance:
 - A National Renewable Energy Laboratory analysis of the U.S. passenger vehicle fleet found an EER of 4.4.⁷
 - Canada’s clean fuels regulation specifies an EER of 4.1 for LD vehicles.⁸
 - Rivian compared the R1S to comparable three-row internal combustion engine (“ICE”) SUVs and estimated an EER of 4.05.⁹

We encourage CARB to take this opportunity to calculate a revised EER.

- **Update the Geofencing Radius.** To avoid double-counting, CARB currently requires that vehicle charging sessions recorded using telematics that occur within 220m of a non-residential charging station be excluded from reporting for residential incremental credits.¹⁰ As the density of public charging networks continues to increase, a 220m geofencing radius risks excluding a growing share of incremental charging claims. Moreover, contemporary GPS accuracy means that such a generous radius is no longer necessary nor justifiable. Rivian recommends that CARB amend the geofencing radius as part of this rulemaking.

Conclusion

The LCFS is a powerful policy that, with the right amendments will contribute even more to the state’s efforts to address climate change and electrify transportation. Action is needed to match the policy’s CI reduction requirements with the real-world performance of the clean fuels market. The April workshop opened the door to discussions of a larger stepdown in stringency in 2025. A stepdown greater than 7 percent is necessary. The workshop did not address the future of residential base credits, however, and we believe this important aspect of the LCFS requires more discussion. An automaker-run LD CFR still stands out as the highest and best use of base credits. But if CARB decides to move forward with the MHD CFR concept, implementation details need to be resolved. We propose that vouchers be awarded in the amount of \$10,000 for medium-duty ZEVs, \$40,000 for Class 4-8 ZEVs, and \$80,000 for Class 7-8 tractor ZEVs. As a manufacturer of MHD EVs, Rivian stands ready to support the design and implementation of an

⁶ California Air Resources Board, *Appendix A: Proposed Regulation Order*, October 26, 2011, available at www.arb.ca.gov/sites/default/files/barcu/regact/2011/lcfs2011/lcfsappa.pdf.

⁷ Mark Singer, Caley Johnson, Edward Rose, Erin Nobler, and Luna Hoopes, National Renewable Energy Laboratory, *Electric Vehicle Efficiency Ratios for Light-Duty Vehicles Registered in the United States*, March 2023.

⁸ Environment and Climate Change Canada, *Clean Fuel Regulations: Specifications for Fuel LCA Model CI Calculations, Version 2.0*, January 2023, p. 85, available at www.data-donnees.az.ec.gc.ca/data/regulatee/climateoutreach/carbon-intensity-calculations-for-the-clean-fuel-regulations/en/Resources/?lang=en.

⁹ Rivian analysis of fuel economy data for a range of ICE vehicles relative to Rivian’s R1S. ICE vehicles examined include the Jeep Grand Wagoneer, Chevrolet Suburban, and Ford Expedition. In all cases, Rivian selected the most fuel-efficient variants of the ICE vehicles.

¹⁰ California Air Resources Board, *Low Carbon Fuel Standard (LCFS) Guidance 19-03: Reporting for Incremental Credits for Residential EV Charging*, June 2019.

MHD CFR. Finally, we urge CARB to take this opportunity to update the LD EER and geofencing radius for contemporary market conditions.

We are grateful for CARB's hard work and continued engagement with stakeholders throughout this process. Please contact me with any questions. We look forward to further discussions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tom Van Heeke", is enclosed in a thin black rectangular border.

Tom Van Heeke

Senior Policy Advisor

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