February 20, 2024

VIA ELECTRONIC FILING

The Honorable Liane M. Randolph, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Preliminary Staff Report Proposed Low Carbon Fuel Standard ("LCFS") Amendments

Dear Chair Randolph and California Air Resources Board's Transportation Fuels Branch Staff,

On behalf of the undersigned companies, we are pleased to provide comments on potential changes to California's Low Carbon Fuel Standard ("LCFS") program. We appreciate the opportunity to engage with Air Resources Board ("ARB") staff during this process.

Under ARB's leadership, California's LCFS program has been an important driver of the State's greenhouse gas emissions ("GHG") emissions reductions. It has not only provided a model for similar programs in other states, but also proved just how successful such programs can be. As of the most recent data, from Q3 2023[1], California has reduced transportation emissions by over 15% below 2010 levels, an achievement consistent with the program's current 2026 target. That is extraordinary progress!

However, ARB's LCFS amendments proposed in the Initial Statement of Reasons (ISOR), released on December 19th, 2023[2], jeopardize the program's progress in the years to come. ARB's proposed amendments to the program's carbon intensity ("CI") targets fail to bring the program's ambitions in line with its performance, thus presenting broad challenges to every producer of low-carbon fuels and risking a sharp drop in clean fuels and technologies investment.

Additionally, the ISOR's sharp adjustment of the treatment of LCFS base credit generation for residential charging of light-duty electric vehicles ("LD EVs") is extremely problematic. Accelerating LD EV adoption is crucial for the state to achieve its GHG emissions reduction goal; but at a time when LD EV adoption may be slowing, ARB has proposed to terminate the California Clean Fuel Rewards ("CCFR") program for LD EVs. As is, the proposal would effectively eliminate LD EV automakers ("OEMs") from the program, because under the proposal there would be no economically viable way for OEMs to participate.

We believe the most effective changes ARB could make to its proposal are to adjust the magnitude of the Step-Down to set the program's CI targets ahead of its performance in the short-term; to adjust the timing of the Auto Acceleration Mechanism; and to revive and rework

[1] https://ww2.arb.ca.gov/resources/documents/low-carbon-fuel-standard-reporting-tool-quarterly-summaries
[2] https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024?utm_medium=email&utm_source=govdelivery

the CCFR for LD EV purchases. If ARB does not revive the CCFR, it should at least allocate a significant portion of base credits for residential EV charging to OEMs, which play the lead role in enabling and accelerating EV adoption and are best positioned to support ARB's objectives.

I. Carbon Intensity Targets

We commend ARB for proposing to implement a 5% carbon intensity ("CI") reduction target Step-Down, to 18.75% in 2025. ARB has also proposed to increase the 2030 CI reduction target to 30% from its current 20%.

As noted above, both ARB and the market are well aware of the program's current success: as of Q3 2023, the achieved CI reduction of transportation fuels in California was ~ 15.5% below 2010 levels, 4.25% more than the 2023 target of 11.25%.[3] At this rate it is quite likely that by the end of 2024 the achieved CI could be 18.75%.

Given that, finalizing both a near-term Step Down and a higher 2030 target are both sensible and defensible actions. However, the timing and magnitude of ARB's proposals in the ISOR are insufficiently ambitious.

Since the ISOR's release, LCFS prices have dropped over 20% to levels not seen since 2015.[4] The market is sending a clear signal to ARB that it believes performance is likely to continue outpacing targets - including the updated targets in the ISOR - and that the LCFS program could be a victim of its own success.

We believe the fundamental issue with the Step-Down as proposed is that it is too little to fulfill its fundamental purpose: to reset the ambitions of the program ahead of its performance.

This is particularly true since ARB has proposed adjusting the 2010 baseline CI for ultra-low sulfur diesel ("ULSD") upwards by 5.3%, from 100.45 gCO2/MJ to 105.76 gCO2/MJ. This adjustment effectively negates any impact of the Step-Down on ULSD, since the new "stepped-down" 2025 target of 85.93 gCO2/MJ is less than 1% below the current target[5]. The impact of this is to increase the supply of credits from renewable diesel, which already generates the most credits in the program.

Climate research suggests that it's imperative to reduce emissions sooner rather than later. ARB can build on the program's extraordinary progress by setting more ambitious targets between now and 2030, such as those proposed by the Low Carbon Fuels Coalition.

[3] BTR estimate.
[4] OPIS Carbon Market Report, January 24, 2024
[5] Proposed Low Carbon Fuel Standard Amendments, Appendix A-1, Proposed Regulation Order, Table 2, Footnote (a), pg. 66.

Recommendations:

- Adjust the magnitude of the Step-Down from the proposed 5% below the current 2025 level to <u>at least</u> 10%.
    - This implies a new 2025 CI reduction target of <u>at least</u> 23.75% below the 2010 baseline.
- Set a 2030 CI reduction target greater than 30%.

<u>II. Automatic Acceleration Mechanism</u>

While an appropriate Step-Down and 2030 target are the most effective means to build on the program's success and provide an incentive for continued investment in response to the visible near-term oversupply of credits, the Automatic Acceleration Mechanism ("AAM") is an important tool to allow the program to adjust for unforeseen imbalances more flexibly in the future.

ARB proposes to delay the first trigger of the AAM until 2027, which would not impact CI reduction targets until 2028 - three years after ARB's proposed Step-Down in 2025.

We believe that timing is too late and encourage ARB to consider an earlier, modified trigger, in line with that proposed by the Low Carbon Fuels Coalition.

Recommendations:

- Allow the AAM to trigger in 2026, one year after the effective date of the Step-Down in 2025.
- Adjust the bank-to-deficit ratio to 2.5 from 3.0.

<u>III. Residential LD EV Charging Credits</u>

Background

Since ARB's last amendments in 2018, the LCFS program has provided crediting pathways for residential LD EV charging credits to both electric utilities and OEMs. The utilities are awarded "base" credits in a volume proportional to the reduction in emissions from an internal combustion engine vehicle fueled by gasoline relative to a "non-metered" LD EV charged with grid-average electricity. OEMs can generate "incremental" credits by purchasing low-CI electricity, typically through purchase of a Renewable Energy Certificate ("REC"), to pair with "metered" EV charging, evidenced using data from vehicle telematics.

There are five important factors to bear in mind about base and incremental credits under the current program:

1. Utilities receive base credits for no cost but must agree to spend the associated credit revenue for specific purposes, as directed by ARB.

2. OEMs may generate incremental credits but must agree to spend the associated credit revenue for specific purposes and must also bear the REC cost and any associated costs of collecting vehicle telematics data including, as ARB has proposed, third-party verification.
3. The current magnitude of the incremental credit relative to the base credit, in terms of transportation emissions reductions per MWh, is approximately 2.7 times lower.
4. The magnitude of the incremental credit value relative to the base credit value, in terms of dollars per MWh, is over 19 times lower, based on current 2024 LCFS and REC prices estimates, as shown in Table 1 below.
5. Beginning in 2023, CARB has relied on "metered" vehicle telematics data provided by the OEMs for incremental credit generation as the "best available data" to establish the volume of "non-metered" base credits awarded to utilities.

Table 1: Base and Incremental Credit Generation Revenue Comparison[6]

Utility Base Credit Value Calculation	***EV OEM Incremental Credit Value Calculation***
Base Credits/MWh EV Charging: 0.775	Incremental Credits/MWh EV Charging: 0.29
2024 LCFS Price: $64.18/MT	2024 LCFS Price: $64.18/MT
Gross Revenue/MWh: $49.74	Gross Revenue/MWh: $18.61
2024 REC Cost: N/A	2024 REC Cost: $16.00
Net Revenue/MWh: $49.74	Net Revenue/MWh: $2.61

While the existing crediting pathways provide most of the volume and value of the emissions reductions generated by LD EV adoption to the utilities, OEMs nevertheless have been incentivized to participate in and generally support the LCFS program for two primary reasons.

First, until recently, there had been a sufficient LCFS price incentive coupled with a sufficient amount of eligible low-CI electricity to generate positive economics for incremental credit generation.

Second, and most importantly, ARB required utilities to spend 60% of LCFS base credit revenue to fund on-the-hood incentives for LD EV purchases through the CCFR.

ARB's proposals in the ISOR upset and diminish those incentives by transforming the CCFR from a light-duty to a medium- and heavy-duty ("MH EV") incentive program and introducing third-party verification requirements and costs on the OEMs that cannot be covered by the now marginal value of incremental credits.

[6] ICE End of Day Market Report, LFS-California Low Carbon Fuel Standard Credit ($/MT) Future, 2/16/24; BTR estimates.

Transformation of the California Clean Fuel Rewards Program

ARB proposes to transform the CCFR program from a universal new LD EV rebate to a rebate focused available for new and used MH EVs that are exempted from the Advanced Clean Fleets regulation.

ARB's rationale for its proposal to redirect the program away from LD EVs and towards MH EVs is to "jumpstart the transition for a harder to transition segment of the truck sector that is not otherwise covered by other CARB regulations."[7]

However, we believe that removing incentives funded by base credits for LD EV adoption is both short-sighted and problematic for three reasons.

First, multiple studies show that purchase incentives remain critical to ensure the transition of EV ownership from only early adopters to a wider group of buyers. Incentives under the Inflation Reduction Act (IRA) are not available for many LD EV models, which makes programs like the CCFR that much more important to support continued adoption. Unlike other programs, the CCFR is not dependent on a California state budget allocation, and, before it was paused, it was one of the last remaining financial incentives in California for LD EVs.

Second, LD EV adoption is critical to the success of the LCFS program and to achieving California's GHG emissions reductions goals generally. We forecast that electricity credits will account for 50% of total credits by 2030 and 65% by 2035, with LD EVs accounting for between 75-80% of that volume if LD EV adoption continues to grow.[8]

Third, LD EV adoption continuing to grow and ultimately reaching California's ambitious targets is not a foregone conclusion. Recent market indicators paint a troubling picture of LD EV adoption. Inventories of LD EVs hit a record high in December 2023, reaching two times the level of the prior year.[9] Annual sales growth for LD EVs this year has been forecast to be only a quarter of 2023's level.[10] LD EVs remain more costly than comparable internal combustion engine (ICE) models, and a high interest rate environment increases the cost of financing the purchase.[11]

Despite the importance of LD EV adoption, ARB proposes to remove direct consumer adoption incentives at a moment when there is little to no value from residential incremental crediting, no alternate crediting pathway or base credit value available for OEMs, no value available from the federal Renewable Fuel Standard for electricity used as a transportation fuel, and an uneven availability of federal incentives for LD EV adoption.

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[7] Proposed Low Carbon Fuel Standard Amendments, Appendix E: Purpose and Rationale for the Proposed Amendments for the Low Carbon Fuel Standard Requirements, pg. 14.
[8] BTR estimates.
[9] Bloomberg Hyperdrive, "America's EV Rethink," January 4th, 2024.
[10] Ibid.
[11] Ibid.

Third-Party Verification Requirements

ARB also proposes to introduce third-party verification requirements on incremental credit generators. This is problematic for four reasons.

- In its Standardized Regulatory Impact Assessment (SRIA), ARB assumed a $6/MWh verification cost.[12] Even assuming a cost one-third that level, third-party verification costs significantly diminish the economic incentive for OEMs to generate incremental credits under the current LCFS and REC price environment, as shown in Table 1(a) below.
- These additional costs are imposed on OEMs for reporting the "best available" vehicle telematics data that establishes the volume of base credits awarded to the utilities.
- ARB's proposal specifically exempts the utilities from any third-party verification requirements for base credits.
- In its current form, third-party verification requires site visits which may conflict with requirements imposed on incremental credit generators by the 2018 California Consumer Privacy Act, particularly for residential EV charging, not to mention be unfeasible given the hundreds of thousands of vehicles reporting.

Table 1(a): Base and Incremental Credit Generation Revenue Comparison

Utility Base Credit Value Calculation	***EV OEM Incremental Credit Value Calculation***
Base Credits/MWh EV Charging: 0.775	Incremental Credits/MWh EV Charging: 0.29
2024 LCFS Price: $64.18/MT	2024 LCFS Price: $64.18/MT
Gross Revenue/MWh: $49.74	Gross Revenue/MWh: $18.61
2024 REC Cost: N/A	2024 REC Cost: $16.00
Net Revenue/MWh: $49.74	Net Revenue/MWh: $2.61
Third Party Verification Cost: N/A	Third Party Verification Cost: [$2.00]
Net Revenue/MWh: $49.21	Net Revenue/MWh: $0.61

ARB's own quarterly data shows that over the past four reporting quarters, residential incremental credit volume has dropped 75%, from 15% of overall residential credits to just under 4%.[13] Additional verification costs as proposed by ARB will significantly diminish the economic viability of incremental credit generation and, in turn, the incentive for OEMs to provide vehicle telematics data.

[12] Standardized Regulatory Impact Assessment, 9/8/2023, Appendix A: Methodology for Estimating Costs, pg. A-1
[13] https://ww2.arb.ca.gov/resources/documents/low-carbon-fuel-standard-reporting-tool-quarterly-summaries; BTR estimates.

This would have the perverse result of forcing ARB to once again estimate non-metered utility base credit volumes at the exact time that ARB is specifically phasing out estimation in other electricity crediting pathways.

Recommendations:

OEMs play a core role in enabling and accelerating the transition to LD EVs. OEMs enjoy comparatively strong relationships with consumers and act as primary distributors of information regarding the consumer and environmental benefits of LD EVs. OEMs also guide consumer preferences by providing compelling LD EV products (e.g., rate plans and managed charging programs) to help maximize the emissions reductions and grid incentives associated with LD EV adoption.

Without the CCFR or some other form of programmatic support for LD EVs, the two market participants most directly responsible for light-duty vehicle electrification and resulting emissions reductions – the OEMs who produce and sell the LD EVs and the drivers who purchase and use them – could be eliminated from the value chain of LCFS entirely, a departure from the first principles of the LCFS program.

As such, we believe ARB should revive and rework the LD EV CCFR. If ARB does not maintain the LD EV CCFR, it should establish a structure that provides OEMs a durable share of base credit generation for residential EV charging, creating a more inclusive program in which the roles of different stakeholders are more appropriately balanced and ensuring programmatic targets are met.

- ARB should maintain the existing LD EV rebate from the CCFR but make OEMs and a third-party administrator – rather than the utilities – responsible for administering it.
    - Over the past three years under its existing administration, the CCFR incentive was first halved and then indefinitely paused, creating confusion for customers.
    - OEMs have decades of experience administering vehicle rebates and are better positioned than utilities to administer an LD EV CCFR, since they are customer-facing at the important “point-of-decision" and could better communicate directly with customers.
    - To provide a stable and predictable incentive, ARB and OEMs should set the CCFR LD EV purchase reward annually based on estimated revenue from LCFS credit generation from residential LD EV charging.
- If ARB instead is determined to finalize its proposed MH EV-focused CCFR program, then ARB should award to the OEMs a portion of the base credits which are not dedicated to the new CCFR fund. OEMs could use the base credit revenue to fund specific projects that benefit EV customers, as directed by ARB, as well as administrative costs related to those projects and to the collection of LD EV vehicle telematics data and the costs of ARB’s proposed third-party verification requirements.

OEMs are by far best positioned to support certain projects already identified by ARB in the ISOR to be valid uses of base credit revenue. For example, ARB has identified various vehicle-grid integration projects such as encouraging the optimization of LD EV charging, providing incentives for managed charging and demand response, supporting the installation and deployment of bidirectional charging capabilities, and developing innovative approaches that benefit both drivers and the grid.[14] All of these projects require significant investment and could be better facilitated by OEMs. Awarding a portion of base credits to fund these investments would provide three key advantages for ARB and the LCFS program.

    - First, it would accelerate the managed charging, vehicle-to-home (V2H), and vehicle-to-grid (V2G) technologies that OEMs are already developing.
    - Second, it would underpin an incentive that OEMs could offer drivers at purchase, on an ongoing operational basis, or both.
    - Third, if implemented in parallel to the changes in the Smart Charging Lookup Table Pathway detailed in Section IV below, it would reinforce the incentive for OEMs to encourage drivers to optimize their charging to hours with the lowest grid emissions and to provide information on utility rate pricing, etc. at the point of sale.
- If ARB does not award to OEMs a portion of the based credits, we would encourage ARB to consider revising § 95500(c)(1)(E)(1) to state, "EV Charging except as specified under 95491(d)(3)(A) *and 95491(d)(3)(B)*" (new text in italic). This would exempt both metered and non-metered residential charging from third-party verification.

IV. Adjustments to the Smart Charging Lookup Table Pathway

As noted above, because incremental credit generation requires the purchase of RECs to pair with the LD EV telematics data, the associated LCFS credit revenue must be sufficient to cover REC costs plus the cost of aggregating, filtering, and reporting the telematics data and any cost of capital associated with the REC costs.

One targeted yet limited change ARB can make that would provide a floor for incremental credit generation economics would be to remove the current requirement in the Smart Charging Lookup Table Pathway that reporting entities must demonstrate that "the FSE was enrolled in a Time-of-Use rate plan during the reporting period."[15] This would enable participation in the

[14] Proposed Low Carbon Fuel Standard Amendments, Appendix A-1, Proposed Regulation Order, §95483(c)(1)(A)(5)(b)(ii)(I-IV), specifically "Support for vehicle-grid integration with projects such as: I. Encouraging the optimization of EV charging through education in the following areas: peak demand, rate pricing, grid emergencies, potential power shutoffs, infrastructure deferral, renewable integration, and/or other signals and grid needs to provide grid and customer benefits. II. Providing program incentives to encourage driver participation in monitored/managed charging, demand response, or vehicle-to-load / vehicle-to- grid applications. III. Supporting the deployment and installation of bidirectional charging equipment. IV. Other innovative approaches to promoting and managing EV charging and discharging that provide benefits to customers and the grid.

[15] Proposed Low Carbon Fuel Standard Amendments, Appendix A-1, Proposed Regulation Order, § 95483(c)(1)(B)(1)(b)

Smart Charging Lookup Table Pathway when other incremental credit pathways are not economically viable.

This change would require only two minor adjustments to existing regulatory language and would have little impact on any existing credit generation since few if any fuel reporting entities have ever utilized the Smart Charging Lookup Table Pathway for either metered residential or non-residential charging.

Recommendations:

We encourage ARB to revise § 95483 and § 95491 as follows:

- § 95483(c)(1)(B)(1)(b): Smart charging. ~~In the case of an entity claiming smart charging incremental credits, the credit generator must demonstrate the residence is enrolled in a Time-of-Use rate plan, if offered by the LSE serving the residence.~~
- § 95491(d)(3)(B)(3)(d): ~~Records must be provided to the Executive Officer, upon request, demonstrating the FSE was enrolled in a Time-of-Use rate plan during the reporting period, if offered by the LSE.~~
- We further recommend that CARB update the Application and Reporting Instructions for the Smart Charging Lookup Table Pathway to reflect these changes.

V. Adjustments to the Requirements for Low-CI Electricity

The supply of RECs eligible for demonstrating low-carbon intensity (low-CI) electricity generation for incremental book-and-claim crediting under the LCFS program is limited relative to other state clean fuel standard programs in the WECC due to ARB's deliverability restrictions on low-CI electricity.

This supply limitation jeopardizes the economic viability of incremental credit generation, particularly at a moment when LCFS prices are historically low and there is no alternate crediting pathway or base credit value available for OEMs.

Recommendations:

- Amend the deliverability requirement such that low-CI electricity from generating units registered in WREGIS and located in *any* state in the WECC may be used for incremental crediting, even if such low-CI electricity is not scheduled into a California balancing authority.
- Exercise ARB's authority as a "Program Administrator" under the WREGIS Operating Rules to introduce flexibility specifically for LCFS-eligible RECs into the generating unit registration requirements imposed by WREGIS.

V. Other Programmatic Changes and Clarifications

Geofencing Radius for Residential EV Charging

ARB should consider reducing the current "conservative" Geofencing Radius (GFR) of 220 meters to a smaller and more precise GFR, as described in LCFS Guidance 19-03, Appendix A "Rationale for Minimum and Maximum Geofencing Radius." The GFR is used to "disaggregate the quantity of electricity used for residential and non-residential EV charging" and should be as precise as possible.

We are concerned that as charging station network operators and utility companies install more charging stations, an increasing amount of residential EV charging will be erroneously categorized as non-residential and therefore ineligible to generate credits. This will be particularly acute in densely populated urban areas of a mixed-use commercial/residential nature.

We believe that geolocation data (latitude, longitude) provided by non-residential reporting entities, as well as the precision of on-vehicle telematic systems, supports a higher precision GFR. We note that the Washington State Department of Ecology proposed a "conservative estimate of 110 meters or less for the maximum GFR to geofence a residential charging location."[16]

Hierarchy of Incremental Credit Generation for Residential EV Charging and Non-Metered Incremental Credit Generation

OEMs are currently second in a "hierarchy" of stakeholders eligible to generate incremental LCFS credits for residential EV charging. This hierarchy provides little value to the efficacy of the LCFS and unnecessarily complicates the registration process. OEMs generate the vast majority of all incremental LCFS credits generated for residential LD EV charging; furthermore, the "best available data" from their metered vehicle telematics establishes the volume of non-metered residential base credits.

We recommend ARB consider either eliminating the hierarchy and establishing OEMs as the sole stakeholder eligible to generate incremental LCFS credits for residential LD EV charging or reorganizing the hierarchy such that OEMs are the first- priority credit generator.

ARB should also clarify in the regulation that OEMs may designate a third-party to act as a first-priority credit generator on their behalf.

Finally, ARB should also allow OEMs that report metered vehicle telematics data to generate incremental credits for non-metered residential charging. Using the same metered vehicle

[16] https://apps.ecology.wa.gov/publications/SummaryPages/2314029.html

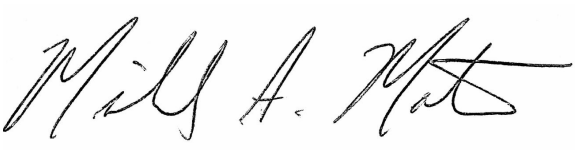
telematics data and vehicle registration data, ARB could establish the volume of non-metered residential charging for which OEMs may generate incremental credits by purchasing a REC.

VI. Conclusion

We encourage ARB to continue to pursue aggressive policies that support California's climate goals. As the transportation sector is the largest sector contributing to greenhouse gas emissions, reducing those emissions is critical to achieving carbon neutrality. The LCFS has been an important and effective tool, but it will only continue to perform if ARB makes changes like those described above.

We thank you again for the opportunity to provide these comments, and we look forward to continued engagement with ARB staff. If we can provide additional information or further support your efforts, please contact any of the undersigned.

Sincerely,



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