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June 6th, 2023

VIA ELECTRONIC FILING

California Air Resources Board 1001 I Street
Sacramento, CA 95814

RE: California Low Carbon Fuel Standard May 23rd, 2023 Public Workshop

Dear Dr. Laskowski and California Air Resources Board's Transportation Fuels Branch Staff,

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. These comments both directly address the concepts highlighted during the May 23rd Public Workshop and emphasize previous comments and analysis that we provided to ARB on June 23rd, 2022, August 9th, 2022, December 21st, 2022 and March 15th, 2023.

ARB Should Keep Up The Good Work

We would like to commend ARB for being receptive and responsive to the public and private commentary that stakeholders have shared over the last several months. We were greatly encouraged that ARB's most recent technical Public Workshop, on May 23rd, focused on two important concepts that we and others have proposed, namely a Carbon Intensity (CI) Step-Down and an Auto-Acceleration Mechanism (AAM).

The CI Step-Down, on the one hand, provides an *immediate* and forward-looking signal that ARB intends to re-set the program's ambitions ahead of its performance. The AAM, on the other hand, provides a mechanism to ensure CI targets remain ambitious over time, in the interim of official action by ARB.

Both, individually and in combination, are critical elements ARB should incorporate into the LCFS program to increase regulatory certainty, provide a long-term robust price signal and support growth in the low-carbon fuel supply.

CI Step-Down: The Most Consequential Action ARB Can Take

As we noted in prior comment letters as well as our presentation during the May 23rd Public Workshop, we believe that a CI Step-Down of an appropriate magnitude and timing is the **single most consequential action** ARB can take. It has 4 reinforcing advantages, namely:

- It results in an immediate inflection in the trajectory of the bank, which in turn
- results in an immediate and robust response in the incentive, which in turn
- results in a front-loading of investment.

That, in turn, leads to a quicker pace and an overall greater amount of decarbonization.

To achieve an immediate inflection in the trajectory of the bank, ARB must ensure that the CI Step-Down is greater than the realized carbon intensity – that is, the program's performance – in the year the Step-Down is implemented. Slide 13 of ARB's May 23rd Public Workshop presentation showed examples of CI Step-Downs between 2-5% greater than the current CI target of the implementation year.

ARB should think bigger!

We estimate that an effective 2024 CI Step-Down – that is, one that re-sets the ambitions of the program *ahead* of its performance – must be *at least* 6% higher than 2024's current CI benchmark of 12.5%.

We therefore recommend a CI Step-Down of 19%, implemented January 1st, 2024, on the way to a *minimum* 30% CI target in 2030.

Figure 1 shows the annual CI targets of a 19% CI Step-Down in 2024 on the way to either 30% or 32% by 2030 relative to the current CI Schedule, as well as the CI targets implied by a linear CI reduction of 30% by 2030 (i.e. ARB's Alt-A).

<u>Figure 1: The CI Path Is As Important As The CI Destination</u>

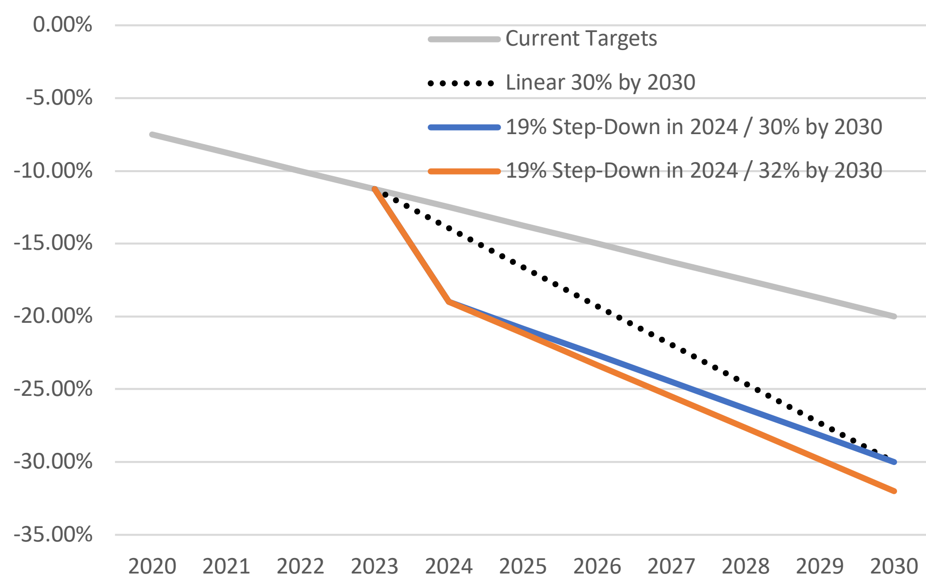
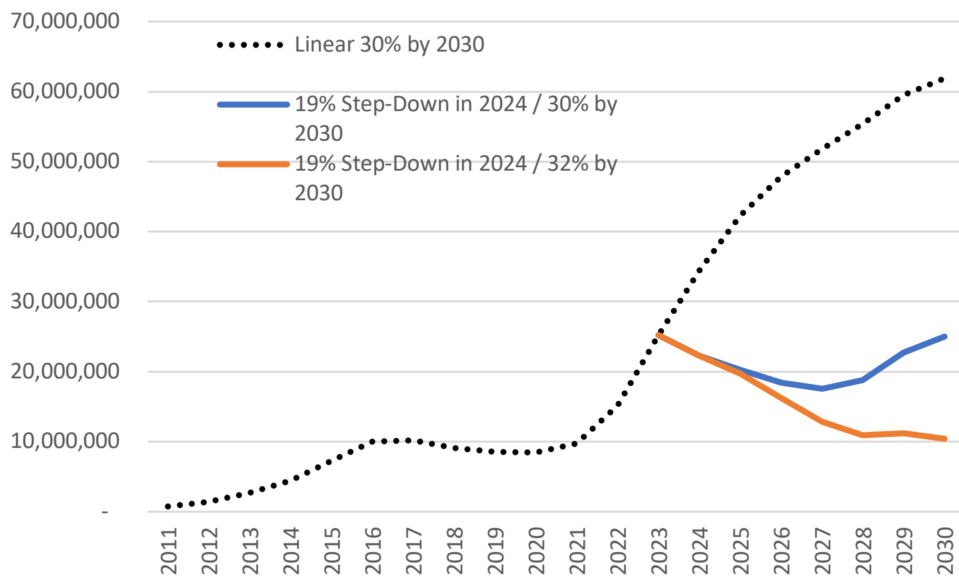


Figure 2 shows that a 19% CI Step-Down, implemented on January 1st, 2024, on the way to either 30% or 32% by 2030 would inflect the bank by ~ 10% *immediately* in 2024, while keeping overall levels of the bank within historical bounds through 2030. Furthermore, we estimate that either of these would provide an average LCFS program incentive between 2024-2030 within the range that prevailed during the period between 2018-2021.

Figure 2: A 19% CI Step-Down Immediately Inflects The Bank…



Timing Is Everything

The effectiveness of a CI Step-Down is dependent nor only upon its magnitude but also its timing. We acknowledge and strongly support ARB's stated ambition to ensure the LCFS amendments – including, but not limited to, the incorporation of a CI Step-Down – are effective on January 1st, 2024.

We were concerned, however, that the examples of a CI-Step Down on Slide 13 of CARB's May 23rd Public Workshop presentation all started in 2025.

A delay of the effective date past January 1st, 2024, will have three significantly negative impacts:

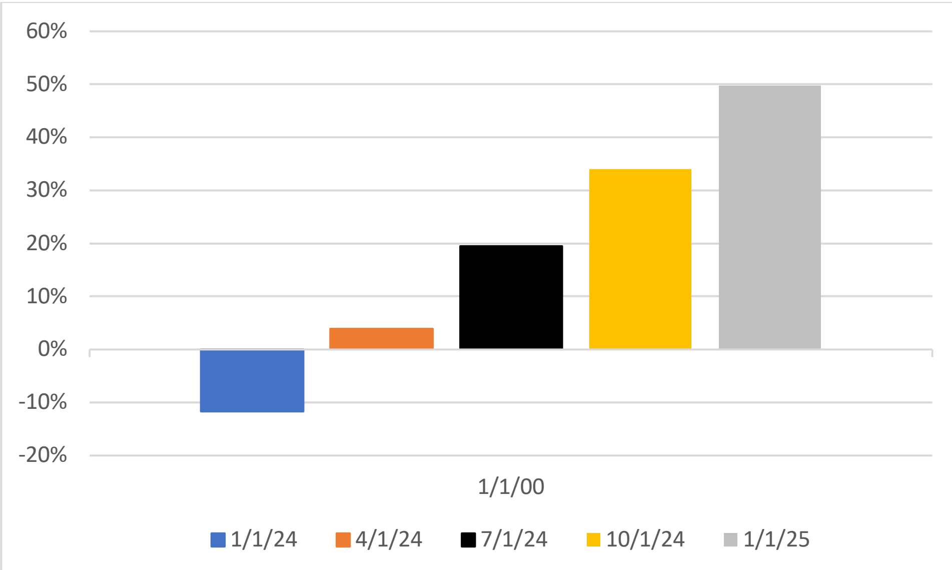
- It will increase the bank by a further 12 MM credits in 2024, adding to 2023's forecasted 10 MM credit surplus.
- It will negatively impact the program's incentive, dropping credit prices well below current levels in the near-term and increasing credit price uncertainty and volatility.
- It will dampen and delay investment in low carbon fuel infrastructure and technology.

Put another way, a delay will allow the overperformance of the program to continue to lead its ambition, requiring ever larger corrections in the program's ambitions post-January 1st, 2024 to achieve a similar effectiveness.

Figure 3 shows that our recommended 19% CI Step-Down implemented on 1/1/2024 will *immediately* reduce the bank vs 2023 levels by ~ 12%. In contrast, that same 19% CI Step-

Down delayed until later in 2024 or implemented in 2025 allows the bank to continue to increase.

<u>Figure 3: …if the 19% CI Step-Down Is Implemented Jan 1st, 2024</u>



The result of any delay, therefore, is that a CI Step-Down *greater than 19%* is required to re-set the programs ambitions ahead of its performance.

For example, if ARB were to delay implementation of a CI Step-Down until January 1st, 2025, our modeling indicates it would need to target a 22% CI Reduction to have a similar impact on the trajectory of the bank (in percentage terms) in the first year, the level of the bank in 2030, and the average LCFS incentive between 2024 and 2030 as our recommended 19% CI Step-Down implemented January 1st, 2024.

Time is of the essence and ARB must not delay!

<u>Auto-Acceleration Mechanism</u>

An immediate and forward-looking CI Step-Down pairs well with an ongoing, backward-looking auto-acceleration mechanism (AAM) and we strongly encourage ARB to incorporate both.

The CI Step-Down provides the ambitious and deliberate leap that ARB must take as it updates the path to achieve California's transportation decarbonization goals; the AAM provides the calibrated and systematic steps the program can take, as necessary, down the road.

To put it another way, the AAM serves as an insurance policy against unforeseen yet possible and consequential outcomes in which the program's performance meaningfully exceeds the program's ambitions.

We commend ARB for presenting its own analysis of the potential mechanics of an AAM at its May 23rd Public Workshop, as well as for inviting several stakeholders to present their own designs. We agree with many of those stakeholders that it would be best for the AAM to be evaluated each May 15th based on the previous annual four quarters of data, and for any adjustments to be implemented on the following January 1st.

While there are several reasonable views on some of the other features of an AAM, our view is that the AAM should incorporate:

- A trigger based on the actual achieved CI reduction in a given calendar year.
- A threshold based on an easily observable CI target,
- An adjustment of each year's future CI target by the amount that the trigger exceeds the threshold.

We believe that the AAM design recommended to ARB by Asher Goldman, of Net Negative Partners, in his public comments to ARB's May 23rd Public Workshop incorporates all of these features and we would strongly encourage ARB to consider implementing it.

Re-Configure Geographic Boundaries For Book-and-Claim Accounting

To generate incremental LCFS credits, EV manufacturers and others must purchase and retire Renewable Energy Certificates (RECs). The value of eligible RECs – that is RECs from projects that physically schedule power into California – has been largely uncorrelated with the value of the incremental LCFS credits since ARB introduced the book-and-claim accounting mechanism in its 2018 rulemaking. As such, the cost of eligible RECs required to generate incremental LCFS credits could ultimately exceed the value of the incremental credits, particularly as the value of the incremental credits continues to decline and/or if LCFS prices were to continue to decline and/or REC prices continue to increase.

In both its November 9th and February 22nd Workshops, ARB suggested changes to the geographical boundaries of certain fuel pathways. Moreover, we note that other state clean fuel standard programs in the WECC (e.g. OR and WA) allow RECs from *any* state in the Western Interconnect to be eligible for incremental EV crediting pathways in their programs.

ARB could similarly consider adjusting the requirement that RECs purchased and retired from *outside* California for LCFS purposes be associated with electricity that is physically scheduled *into* California, for example, by allowing any REC generated from a Zero or Negative CI resource in the Western Interconnect qualify. In doing so, ARB would enable incremental credit generators to access a larger supply of RECs. Additionally, ARB could enable book-and-claim accounting of RNG sourced from projects across North America to be eligible for both hydrogen production *and* electricity generation.

Verification for Electricity Credit Generation

In its February 22nd Workshop ARB highlighted the potential to introduce third-party verification requirements for EV charging transaction types.[1] While we appreciate the need for third-party verification to ensure the integrity of the LCFS program, we encourage ARB staff to consider the

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[1] CARB, Low Carbon Fuel Standard Public Workshop: Potential Regulation Amendment Concepts, February 22nd, 2023, Page 72

cost-effectiveness and feasibility for third-party verification of reporting for residential EV charging.

We recommend ARB establish that any third-party verification of EV charging transactions occur annually and in aggregate, or through a random sampling of residential EV charging data. We also recommend that ARB consider how the requirements for third-party verification will interact with the requirements imposed on many credit generators by the 2018 California Consumer Privacy Act, particularly for residential EV charging.

Other Changes To Streamline Program Implementation

BTR has previously encouraged ARB to consider other technical changes to the LCFS, including many of the changes described below.

EV EERs

We noted that in its February 22nd Workshop, ARB highlighted it would be making several updates to emissions factors and fuel pathway carbon intensities.[2] We respectfully suggest that ARB also update the Energy Efficiency Ratio ("EER") assigned to on-road light, medium, and heavy-duty EVs based on a more recent analysis of how the efficiency of internal combustion engine vehicles compares to similar EVs.

"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 (such as 20 meters), 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.

Incremental Credit Generation for Residential EV Charging

EV manufacturers 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

[2] CARB, Low Carbon Fuel Standard Public Workshop: Potential Regulation Amendment Concepts, February 22nd, 2023, Pages 65-66

efficacy of the LCFS and unnecessarily complicates the registration process. EV manufacturers generate the vast majority of all incremental LCFS credits generated for residential EV charging.

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

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

Conclusion

We continue to be encouraged by ARB's direction towards introducing ambitious CI reduction targets pre-2030 and providing an investable pathway for California to meet a 2045 CI reduction target of 90%. We also commend ARB for its responsiveness to the commentary that stakeholders have shared over the last several months.

In our view, adopting a CI Step-Down of 19%, implemented January 1st, 2024, on the way to a *minimum* 30% CI target in 2030 is the single most consequential action ARB can take. In addition, we would encourage ARB to incorporate an AAM as a complementary mechanism to ensure that the programs ambitions continue to lead its performance.

The transportation sector is the largest sector contributing to greenhouse gas emissions and reducing those emissions is critical to achieving carbon neutrality. The LCFS has been an important and effective tool, and it can continue to be so, particularly if ARB makes changes to streamline the implementation of incremental electricity crediting such as those additional changes 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 us.

Sincerely,

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