



February 20, 2024

Matt Botill
Chief, Industrial Strategies Division
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: AMP AMERICAS COMMENTS ON PROPOSED LOW CARBON FUEL STANDARD AMENDMENTS

Dear Mr. Botill:

Thank you for the opportunity to comment on the Proposed Amendments to the Low Carbon Fuel Standard ("LCFS"). Amp Americas ("Amp") appreciates the California Air Resource Board's ("CARB's") leadership on addressing climate change and the significant success the LCFS program has had in decarbonizing transportation. Amp especially appreciates CARB staff's thorough and ongoing stakeholder engagement throughout the LCFS amendment process, and in particular on issues related to dairies and renewable natural gas ("RNG").

Amp strongly supports amending the LCFS to ensure its ongoing success as a driver of investment in a broad array of low carbon fuels, including dairy RNG. Accordingly, we offer the following comments, which are further elaborated upon below:

- Stronger near-term targets than proposed are necessary to address the ongoing accumulation of credits and drive additional investments in low carbon fuels projects in the near term. We recommend:
 - **A step down to at least 23%** carbon intensity reduction, to take effect as soon as the regulation takes effect in Q3 2024, rather than 2025. If the step down is not effective until 2025, we recommend a 25% step down effective January 1, 2025.
 - **A 2030 target of at least 35%**, in order to drive the outcomes laid out in the 2022 Scoping Plan. We note that approximately 3 percentage points of the target are required to counteract the change in diesel baseline, which without adjustment, effectively reduces program ambition by 3 percentage points.
- We support the addition of an auto acceleration mechanism (AAM) to the program, and encourage minor adjustments that would allow it to be more responsive to market conditions:
 - The **AAM should take effect as soon as the regulation does**, with the first test occurring in 2026 to evaluate 2025 performance.
 - The **AAM trigger should be 1x quarterly deficits**, rather than 3x, in recognition that 1) the LCFS is now a liquid and mature market, and 2) that liquid and mature markets are in surplus conditions when inventory is greater than 0.6x quarterly demand.
 - There should be **no limit to applying the AAM in consecutive years**.
- **We urge CARB to follow the deep and sound science and maintain avoided methane crediting for all RNG pathways.**



- We support efforts to develop RNG pathways for zero emission vehicle (“ZEV”) fuels and stationary sources, and encourage CARB to enable book-and-claim delivery for RNG-to-power plants to further support this transition.
- We support the proposed true-up provisions and recommend CARB allow true-ups during the Temporary CI period for any pathway using a Temporary CI.
- We include various other technical comments and recommendations to bolster the ability of the program to continue driving investment in low carbon transportation fuels and greenhouse gas emissions reductions, including allowing the regulation to automatically incorporate new carbon capture, removal, utilization and sequestration (CCRUS) pathways if and when new CCS Protocols are developed pursuant to Senate Bill 905.

In addition to these recommendations on the proposed amendments, we appreciate the opportunity to comment on the proposed CA-GREET 4.0 model and revised Tier 1 calculators. We reiterate our comments shared previously on the calculator,¹ and specifically that:

- All biomethane pathway calculators should include the option to model biogas-to-electricity carbon intensity scores.
- Applicants should be allowed to account for actual fugitive methane performance.
- The avoided emissions boundary should include biogas flared during normal operations.
- The volatile solids table should be updated to include new technologies.

ABOUT AMP

Founded in 2011, Amp develops, owns, and operates RNG facilities that convert dairy waste into carbon-negative renewable energy. Over our history, Amp’s projects have prevented over 1.7 million metric tons of carbon equivalent emissions. In 2022 alone, our projects abated approximately 480,000 metric tons of carbon equivalent emissions, and we plan to rapidly expand our impact over the next several years.

As a pioneer in the dairy RNG industry, Amp registered the first 5 dairy RNG-to-CNG pathways in California’s LCFS program, and we were the RNG supplier for the first 11 dairy RNG-to-hydrogen pathways. Our experience developing, operating, and reporting on these and other assets gives us a unique perspective on the impact CARB policy has on investment and project development activity related to low carbon fuels. Our projects and resulting methane and carbon dioxide reductions have been made possible by CARB’s leadership in decarbonizing transportation, and we encourage CARB to continue to support the policy decisions that have made it so successful.

LCFS CRITICAL TO ACHIEVING SB 1383 METHANE REDUCTION TARGETS

California is a global leader in efforts to slash potent super pollutants, including methane from dairies and other sources. Since the finalization of the *Short Lived Climate Pollutant (“SLCP”) Reduction Strategy* in 2017, the state has seen significant investment in projects to mitigate methane emissions, notably from dairy manure management. For example, for decades prior to development of the SLCP Reduction Strategy, the state had only a handful of dairy digesters to mitigate methane emissions, but over the few

¹ <https://www.arb.ca.gov/lists/com-attach/360-lcfscalculators23-ws-UTBVPgZ3U19QIgNg.pdf>



years since the adoption and implementation of the SLCP Reduction Strategy, California now has over 200 dairy digesters built or under development. Hundreds more projects are under development nationally, delivering significant additional SLCP reductions and creating a broader supply of available RNG to replace fossil natural gas (virtually all of which is imported from out-of-state) and decarbonize California's transportation and other sectors in alignment with the state's strategy to achieve carbon neutrality under the *2022 Climate Change Scoping Plan Update*.

A key element driving this success has been the LCFS. The SLCP Reduction Strategy specifically highlights the LCFS and federal Renewable Fuel Standard as critical programs to enable ongoing development of dairy digesters in California.² Without credits generated under the LCFS and RFS programs, or other significant ongoing state incentives, additional dairy manure methane mitigation projects are unlikely to be developed in California.³ This was a clear finding in the March 2022 review report, *Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target*. Among other takeaways, the report finds that the LCFS can ensure the long-term operation and financial stability of digester projects⁴ and that alternative manure management projects are unlikely to be implemented without subsidies.⁵

This successful framework can continue driving investment in methane mitigation in order to meet our statutory emissions reduction targets, provided that the LCFS is strengthened to maintain a strong investment signal and continues to allow for methane mitigation projects to be developed by (1) increasing overall program ambition in line with the 2022 Scoping Plan, (2) preserving the science-based accounting for avoided methane associated with RNG pathways, and (3) preserving book-and-claim delivery for RNG so it can continue to reach its current transportation fuels markets and extending book-and-claim to allow RNG to serve other target end markets in transportation and stationary uses.

Maintaining current provisions for dairy RNG pathways maintains the investment case under which investors allocated capital to the LCFS program and avoids emissions backsliding. CARB engineered a program to draw private dollars rather than allocate public funds to its SLCP Strategy goals. In order to maintain trust with investors and continue to drive private investment, CARB cannot change the rules and strand investment in capital already deployed. Not only is preserving the rules for dairy digesters important for statewide carbon goals and the LCFS program, but investment in digesters is required to achieve the state's methane mitigation goals and supporting initiatives under SB 1383. The state's Renewable Gas Standard directs utilities to procure biogas from projects utilizing organics diverted from landfills in line with SB 1383 obligations, and explicitly relies on dairy biogas projects continuing to be supported by the LCFS.⁶ Thus, several state priorities are at risk with the proposed changes to the dairy RNG rules and overly conservative proposal for overall program ambition by 2030.

² For example, see the [SLCP Reduction Strategy](#), pp. 68, 107.

³ [SLCP Reduction Strategy](#), pg. 121.

⁴ For example, see the report, [Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target](#), pp. 19, 29, 31, 40.

⁵ [Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target](#), pg. 41.

⁶ CPUC Decision 22-02-025, February 24, 2022. !

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M454/K335/454335009.PDF>



STRONGER NEAR-TERM TARGETS NEEDED TO SUPPORT ONGOING INVESTMENT

The ongoing development and operation of low carbon fuel projects, including dairy RNG projects, requires programs like the LCFS to provide and maintain a strong and clear market signal sufficient to attract capital for new projects and to maintain operations at existing RNG facilities. In previous comments,⁷ we have advocated for a step-down in CI average reductions to at least 19% in 2024, and CI reduction targets of at least 35% in 2030, and urged that targets be in-line with emissions reduction targets in statute or identified in the 2022 Scoping Plan Update (e.g., 40-48% reduction).

While the proposed amendments include a step-down to about 19%, *the step-down as proposed wouldn't take effect until 2025*. During the third quarter of 2023, the credit bank grew by 2.25 million credits and ended the quarter with a balance of 20.4 million credits. With no change to targets in 2024, if credit supply and demand continue their current rate of growth, the bank could be 38 million by the end of 2024, almost 6 times quarterly deficit generation. If credit supply were to remain constant at Q3 2023 values, with no step down in 2024 (a wildly conservative scenario), the bank would still reach 30 million credits and represent more than 4 quarters' worth of deficits. These outcomes do not account for the recently revised diesel carbon intensity, which will lead to additional credit generation beginning in 2025. With a bloated credit bank to begin with, the market will be hopelessly saturated and getting worse by multiple percentage points and millions of additional banked credits.⁸

If the bank is allowed to reach these levels, prices will remain depressed for an extended time. Investment in new LCFS credit generating projects has already slowed or frozen, and while projects that were green-lit in a higher price environment continue to come to market, new projects are not starting. If low prices persist, new supply growth will stop. In several years, when targets accelerate, the market could snap to undersupply and squeeze prices past the cap. In order to prevent this situation, targets must reflect the market's ability to bring in new supply.

The proposed increase in stringency to 18.75% (growing program targets by 50% vs. 2023), if executed immediately for the full year 2024 (not an option proposed) would only balance the market for this year. However, in 2025, supply growth will once again outstrip demand growth as projects currently under construction are brought online. With surplus conditions continuing, the bank will continue to build, and we will remain in a low price environment – meaning no new investment will materialize.

Together, these trends demonstrate that a greater step down is necessary to maintain orderly functioning of the LCFS market, reverse the trend of accelerating growth in the credit bank, and to avoid further weakening the signal to invest in new projects and GHG reductions. **Accordingly, we encourage amendments that would have the step-down to 23% take effect in 2024 or alternatively, to increase the step down to ~25% if it were to take effect only in January 2025.** Our recommendation is in-line with the analysis presented by ICF, showing levels needed to return balance to the credit bank and stabilize prices. We also reiterate our call to set 2030 CI reduction targets of at least 35%, and align program goals with levels required to achieve the goals of the Scoping Plan.

⁷ For example, see:

https://ww2.arb.ca.gov/system/files/webform/public_comments/3751/Amp%20LCFS%20May%202023%20Workshop%20Comment%20Letter%20vF.pdf

⁸ ICF, *Analyzing Future Low Carbon Fuel Targets in California*, February 2024



We appreciate that CARB has evaluated three scenarios for program rules and targets, showing high prices and a leveling, declining bank in its proposed scenario. We do not have access to all of CARB's inputs to provide specific feedback, but it is clear that the market disagrees with the output of CARB's forecasts, as reflected in the price of credits since the ISOR was released. The market believes the LCFS market will remain in surplus for the foreseeable future, and credit prices have been trading down since the proposed amendments were released. At the current price level in the low \$60s per ton, with the proposed program target levels, most capital providers have stopped investing and going forward will not allocate dollars for further investment in California low carbon fuels projects for at least the next few years.

ADJUSTMENTS TO THE AUTO ACCELERATION MECHANISM WILL MAKE IT MORE EFFECTIVE

The demonstrated market response implies two things. First, and most importantly, the step-down quantum is insufficient to clear the current supply of available credits. If the market had confidence in the AAM, we might see some price recovery, rather than a continuing decline in credit prices. So the second implication of the market response is that the market believes the AAM as proposed will be insufficient to correct the for the low ambition in the targets. Accordingly, in addition to strengthening the step-down and pulling it forward to Q3 2024, Amp strongly encourages CARB to adjust the AAM, so that it takes effect sooner and is more responsive to changing market conditions.

Amp strongly supports development of an AAM, which will help to strengthen the program and potentially help to avoid future potential market weakness driven by as-yet unforeseen trends in low carbon fuels supplies. While the market is currently overachieving its targets, there is a long way to go to reach 2045 goals. Ironically, when overachieving the targets in the near term leads to sustained price weakness, it will inevitably lead to sustained periods of underachievement and high prices. If the market subsequently swings from undersupply to oversupply, prices will be volatile, undermining public confidence in the program and jeopardizing long term goals. An AAM can help provide a clear, ongoing signal that there will be a market for low carbon fuels, providing greater certainty to investors and incentivizing continuous investments in clean fuels and ongoing greater emissions reductions, provided that it is designed appropriately.

As noted above, however, together with the proposed step-down approach, the AAM is insufficient to reverse an accumulating credit bank over the next several years, and therefore stands to miss on its promise. Accordingly, Amp recommends adjusting the AAM as follows:

- The **AAM (and step-down) should take effect as soon as the regulation does (e.g. Q3 2024)**. This would imply the first test would take effect in May 2025, and the first year the target could be accelerated would be 2026. If the regulation becomes effective in 2025, the first test should occur in May 2026.
- The **AAM should be triggered when credits exceed one quarter of demand**, rather than 3x quarterly demand.
- There should be **no limit to applying the AAM in consecutive years** if the specified thresholds are met.

The AAM is by its nature conservative, requiring both a significant and growing credit bank in order to be triggered. Accordingly, there is no reason to wait an additional year after the step-down takes effect



for the AAM to potentially apply, or for that matter, to introduce a year between periods when the AAM may potentially trigger again. If a significant credit bank persists and continues to grow – even during a year in which targets were accelerated by operation of the step-down or the AAM – that demonstrates that further acceleration of the targets is warranted.

A credit bank that is too large has a seriously detrimental effect on the market. Especially when a large number of credits is held by few players – as is the case now and for the last several years – those players can draw on their holdings and not buy or generate additional credits. This leads to price weakness and tells potential future suppliers not to invest. Even if the market were to supply fewer new credits than compliance obligations require (i.e., market balance is in deficit) the large bank can prevent prices from signaling to suppliers the need to invest. So, what is the right level? Drawing corollaries from similar markets, stores rarely exceed 15-25% of annual demand or 0.6-1.0x quarterly demand in U.S. grain⁹ and energy markets (see data for crude oil and natural gas below). We note as well that the federal RFS program allows for an effective bank maximum of 0.8x quarterly demand in the form of its rule allowing 20% carryover of RIN balances (and deficits).

U.S. Crude Oil Storage as Share of Quarterly Demand 2008-2023^{10,11,12,13}

	Ending Stocks of Crude Oil (Barrels)	Crude Oil + NGL Quarterly Production (Barrels)	Quarterly Supplied Petroleum Products (Barrels)	Quarterly Storage Divided by Next Quarter Demand
Max	1,208,001,846	1,832,932,500	1,937,512,923	0.72x
Median	1,055,914,615	1,139,179,000	1,801,268,000	0.59x
Mean	1,052,450,337	1,149,569,945	1,801,178,655	0.59x
Min	782,771,000	593,810,000	1,653,659,000	0.43x

⁹ Zulauf, et al. University of Illinois. *Stock-to-Use Ratios of US Corn, Soybeans, and Wheat Since 1960*. June 2021.

¹⁰ Crude oil inventory: http://www.eia.gov/dnav/pet/pet_stoc_wstk_dcu_nus_w.htm

¹¹ Crude production: http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbb1_m.htm

¹² NGL production:

https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M_EPL2_FPF_NUS_MBBLD&f=M

¹³ Crude consumption (“U.S. Weekly Product Supplied”): http://www.eia.gov/dnav/pet/pet_cons_wpsup_k_w.htm



U.S. Natural Gas Storage as Share of Quarterly Demand 2010-2023^{14,15,16}

	Lower 48 Natural Gas Inventory (Bcf)	U.S. Natural Gas Gross Withdrawals (Bcf)	U.S. Natural Gas Total Consumption (Bcf)	Quarterly Storage Divided by Next Quarter Demand
Max	3,864	11,626	9,433	0.51x
Median	2,750	8,255	6,951	0.39x
Mean	2,732	8,828	7,054	0.39x
Min	1,308	6,535	4,959	0.23x

Would a tighter allowance on the size of the bank present a risk to the operation of the LCFS program? We see little reason to believe so. The biggest quarterly deficit ever seen in the program was 13% of deficits for the quarter (Q2 2018). Were we to see this level of shortfall again, it would take almost 8 quarters of sustained deficit at this record level to draw down a bank balance of 1x quarterly deficits and it would take 23 quarters to draw a bank balance of 3x quarterly deficits. **Implementing a reasonable 1x quarterly deficits trigger would be a clear signal to the market of CARB's intent to reach its goals with very little risk to overall program effectiveness.**

AVOIDED METHANE AND BOOK AND CLAIM DELIVERY FOR BIOGAS CRITICAL TO ACHIEVING METHANE REDUCTION GOALS

Avoided methane crediting is critical for both financing digester project development and long-term operating viability. Dairy digester projects cost tens to hundreds of millions of dollars and take 2-3 years to develop and construct, followed by up to two years to receive provisional pathway scores. Avoided methane crediting provides the source of revenue for these projects that pays for their beneficial impact and allows developers to invest. If in the future, farm methane emissions are regulated directly, milk buyers will foot the bill for reducing emissions through milk prices or government will directly subsidize digesters. Until then, avoided methane crediting is the only way to support digester development, ongoing operations, and associated emissions reductions. **We strongly encourage CARB to maintain avoided methane crediting for all RNG pathways, and to not phase out CNG or hydrogen pathways unless and until direct regulation renders avoided methane non-additional.**

As noted above, the LCFS has proven a successful model – likely the most successful in the world – in achieving methane reductions from the agricultural sector. This success stems directly from avoided methane crediting as part of lifecycle GHG emissions accounting for biomethane pathways. Methane crediting is both scientifically accurate and proven effective in supporting project development and driving significant methane reductions. Given this demonstrated success and scientific accuracy, a number of new programs are taking a similar approach to California's, including the Inflation Reduction Act and other programs based on the Argonne National Laboratory (ANL) Greenhouse gases, Regulated Emissions, and Energy use in Technologies (GREET) model.

¹⁴ Natural gas storage: <https://ir.eia.gov/ngs/ngs.html>

¹⁵ Natural gas production ("Natural Gas Gross Withdrawals")
http://www.eia.gov/dnav/ng/ng_prod_sum_a_epg0_fgw_mmcf_m.htm

¹⁶ Natural gas consumption: http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_m.htm



Still, project infrastructure and equipment have a finite life. If avoided methane crediting goes away, not only will new projects not be built, but existing projects will shut down because they cannot pay operating costs and costs to maintain and extend the life of equipment. If existing projects shut down, we will backslide to pre-LCFS methane emissions at dairies. Our existing projects and projects currently under construction prevent about 700,000 MT per year of carbon reduction that would revert to venting.

Backsliding has happened before. Some of Amp's largest projects were originally biogas-to-electricity projects that were shut down by prior owners due to failed economics. CARB should not assume that once a digester project is developed, methane emissions are permanently abated, and it should not change accounting for avoided methane emissions until clear mechanisms are in place to ensure avoided methane emissions remain avoided.

Additionally, as described in our previous comments,¹⁷ California imports nearly all of its natural gas,¹⁸ and any biomethane injected into the pipeline system under the LCFS serves to displace fossil natural gas that otherwise would be imported into the State. The North American natural gas system does not mirror the fractured and isolated electricity markets in the western U.S. Instead, the gas system is deeply interconnected, and long ago moved away from point-to-point service, instead creating trading hubs and flexible receipt and delivery points to give customers a variety of options in the market.

Fossil natural gas operates on a system very similar to book-and-claim, in which buyers of fossil gas do not buy the molecules injected by their supplier, but rather instantaneously take receipt of a pre-agreed amount of gas, based on a mass-balance corresponding to the amount their supplier injected elsewhere in the system. These systems already work well for natural gas supplies across the continent and in the LCFS, and they should continue to be leveraged to cost effectively and efficiently support decarbonizing California gas end uses. RNG under the LCFS should be treated no less preferentially than compared to fossil natural gas, and **book-and-claim eligibility should be maintained for all RNG pathways.**

AMP SUPPORTS DEVELOPING RNG FOR STATIONARY SOURCES, ZEV FUELS

The proposed phaseout of avoided methane crediting and book-and-claim eligibility for combustion-based or hydrogen-based pathways is counter-productive and not supported by science. Still, we appreciate that California is moving towards zero emission vehicles ("ZEVs"), as required by the Advanced Clean Cars II and Advanced Clean Fleets regulations, and the Scoping Plan highlights a priority to develop additional renewable gas supplies to help decarbonize stationary sources. Amp supports California's overall decarbonization goals and its efforts to develop RNG supplies to decarbonize stationary sources in all sectors of the economy. Provisions in the proposed amendments help support transitioning RNG to ZEV fuels and stationary sources, but we encourage additional steps to further assist the transition, specifically:

¹⁷ <https://www.arb.ca.gov/lists/com-attach/125-lcfs-wkshp-nov22-ws-VzZcN1EgAg5QOghr.pdf>

¹⁸ According to the California Energy Commission, "California continues to depend upon out-of-state imports for nearly 90 percent of its natural gas supply..." <https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california>



- **Do not phase out avoided methane crediting and book-and-claim eligibility for all RNG pathways, including RNG-to-hydrogen.**
- **Allow RNG book-and-claim eligibility for electricity production at power plants to charge electric vehicles (“EVs”).**
- **Allow RNG book-and-claim eligibility for process energy for any transportation fuel pathway, in order to align with the Scoping Plan and begin to shift RNG away from transportation to stationary sources.**

Enabling book-and-claim delivery for RNG sourced from projects in North America to be eligible for both hydrogen production *and* electricity generation would align with state goals around ZEVs and maintain equal treatment among ZEV options – including both hydrogen and electricity. We recommend making this change in Section 95488.8(i)(2) to expressly allow book-and-claim delivery for biomethane used to produce electricity for transportation purposes.

We recommend making a similar change to Section 95488.8(h) to expressly allow book-and-claim delivery for biomethane used for process energy (e.g., in cement production). This will serve as another mechanism to promote shifting RNG from transportation to stationary applications.

A significant portion of the LCFS value generated from RNG flows to the stations that distribute fuel, and this same dynamic would apply to RNG-to-electricity-to-EV pathways, accelerating EV adoption by injecting additional LCFS value into the EV ecosystem.

AMP SUPPORTS AMENDMENTS RELATED TO CREDIT TRUE UP

Amp strongly supports the proposed amendments regarding “credit true up after annual verification.” For RNG pathways specifically, which encompass living, biological systems, several parameters are beyond the control of a pathway holder – including temperature, herd count, changes to the manure volatile solid content, unplanned equipment downtime, evolving energy efficiency due to equipment age, force majeure events, or other changes in dairy operations beyond the operator’s control including manure collection practice, water usage, dairy feed – can impact a number of variables that affect the CI of a pathway. Due to these unpredictable and uncontrollable factors, verified pathways may deviate from provisional pathways through no fault of the project developer or operator. The true up provisions will protect the environmental integrity of the program and maintain rigorous accounting and verification, while allowing flexibility to accommodate reasonable uncertainties.

In addition, Amp supports credit true up between temporary CI and certified (e.g. provisional or non-provisional) CI values, as previously proposed by CARB staff. Essentially all dairy RNG pathways utilize a Tier 2 process today, which currently takes about 18-24 months for approval and means that dairy RNG projects use a Temporary CI score for about 2 years. The Temporary CI score is -150, where the average dairy RNG project is -313, meaning these projects fail to get credit for approximately 40%¹⁹ of their emissions reductions for 2 years. This also reduces credit availability in the program, increasing the cost of compliance for regulated entities. By allowing a true up between temporary CI and certified CI values, CARB would help alleviate concerns related to pathway process delays, assist in avoiding complicated

¹⁹ https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/current-pathways_all.xlsx accessed 2/19/2024; simple average of Dairy Manure feedstock pathways; diesel baseline of 87 gCO₂e/MJ in 2024



storage agreements, provide reliable deliveries to fleets by avoiding buildup of stored gas inventory, allow more direct sales of RNG to smaller local fleets, and motivate additional project development. **CARB should allow true-up for the verified actual CI of projects during the pathway registration period.**

We applaud CARB's attempts to make the Tier 1 calculator more usable by dairy projects and to shorten the period during which a Temp CI would be required. Our comments stand even if this initiative is successful. There is simply no equitable argument to deny dairy RNG projects credit for their verified impact however long the Temporary CI period may last.

ADDITIONAL PROVISIONS TO SUPPORT AN ONGOING, SUCCESSFUL LCFS

Finally, Amp offers the following comments and questions on various provisions included in the proposed amendments:

Less Intensive Verification

We support the concept of "Less Intensive Verification" in Section 955011(h), given that the verification process can often be completed remotely. However, we oppose applying the rules only to electricity transactions identified in section 95500(c)(1)(E). Amp recommends that less intensive verifications be applied for all quarterly fuel transaction reports ("QFTR") identified in Section 95500(c)(1). This would be consistent with the CARB Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Title 17 of the California Code of Regulations ("CCR") Section 95130(a)(1), which allows for less intensive verification services for the following two years if the less intensive verification criteria are met. Verification site visit for a QFTR primarily consists of a visit to an entity's headquarters or other location of central data management and comprises reviewing electronic records. The site visit can easily be done virtually, as we successfully observed during COVID. The third-party verifier could still have discretion to determine that a conventional verification is necessary if project-specific facts indicate a less intensive verification will not suffice. Allowing less intensive verifications for QFTRs will reduce travel requirements, costs and associated emissions.

Deficit Obligation Calculation

We support the deficit obligation concept in Section 95486.1(g), given the variability of biological carbon intensity scores. We recommend that this starts with the 2024 fuel transaction year instead of the 2025 fuel transaction year. If the Regulation goes into effect at the start of 2025, the new provision can be easily implemented prior to verification being completed by August 2025.

Measurement Accuracy

The measurement accuracy section under Section 95488.8(j) was moved to Section 95491.2(a), however the old section is still cited three times in Sections 95481(a), 95491.1(c)(1)(K), and 95491.1(c)(1)(2)(E). This creates ambiguity that would be helpful to correct.

Missing Data Provisions

The proposed "Missing Data Provisions" in Section 95491.2(b)(2)(B) Table 13 are based on a data year, however data substitution is often required to be completed monthly to determine fuel allocations for Pathways with multiple fuel pathway codes. If missing data substitution is required to be completed annually instead of monthly, it will create issues with monthly fuel allocation and dispensing for



pathways, as well as quarterly fuel transaction reporting, which will require quarters 1, 2, and 3 to be re-opened and re-reported every year.

Amp requests that the use of “reasonable temporary methods” continue to be allowed to address missing data, which allows for operational realities and engineering best practices to be used. As the majority of data being substituted is continuous data (e.g. 15-minute data), data substitution using data directly prior and after is likely to be more accurate than a 30-day average or highest/lowest value over a one- to two-year time period. As the reports that fall under 95491.2 are all required to undergo third party verification, it ensures that all “reasonable temporary methods” are deemed conservative and accurate.

Force Majeure Events

Section 95491.2(b)(3) provides updated force majeure event requirements, including a requirement to report operational data during force majeure events when submitting the quarterly or annual verification. Reporting entities already report operational data to the verification body during the verification process as well as to CARB upon request. Therefore, it is unnecessary to also provide this operating data for force majeure events during the quarterly and annual reporting process.

Carbon Capture Protocols

We encourage CARB to allow additional carbon capture, removal, utilization and sequestration (“CCRUS”) protocols to be utilized as they are developed, pursuant to SB 905 or if the CCS Protocol is updated otherwise. Enabling a wider array of CCRUS pathways to be deployed will help reduce industrial sector emissions and emissions associated with several different transportation fuel pathways, including biogas. However, the definition of a “carbon capture and sequestration project” and provisions in Section 95490 refer to geologic sequestration and transport of CO₂ to an injection site, which implies only geologic sequestration projects would be eligible. We encourage amendments to avoid limiting future eligibility of CCRUS projects, should new CCRUS protocols be developed.

Thank you again for your collaboration with stakeholders through this public process, the opportunity to comment on the proposed regulatory amendments. We appreciate your consideration of these comments and work to amend and strengthen this critical program.

Sincerely,

Cassandra Farrant

Cassandra Farrant
Head of Environmental Credit Compliance
Amp Americas