January 7, 2022

Cheryl Laskowski
California Air Resources Board
1001 I Street
Sacramento, California 95814

RE: Low Carbon Fuel Standard December 2021 Workshop

Dear Ms. Laskowski,

The Coalition for Renewable Natural Gas (RNG Coalition) is a California-based nonprofit organization representing and providing public policy advocacy and education for the Renewable Natural Gas (RNG) industry.[1] We advocate for the sustainable development, deployment and utilization of RNG, so that present and future generations have access to domestic, renewable, clean fuel and energy in California and across North America.

RNG Coalition respectfully submits these comments to the California Air Resources Board (CARB) in response to the Low Carbon Fuel Standard (LCFS) workshops held on December 7, 2021. The LCFS program is a key driver of growth in the Renewable Natural Gas (RNG) industry, and we appreciate CARB's commitment to continuous improvement of the underlying regulatory framework—both overall and with respect to the program's RNG-specific features.

CARB Should Set Strong Targets in Line with the State's Carbon Neutrality Goal

RNG provides a cost-effective opportunity to help decarbonize existing natural gas infrastructure[2] and simultaneously reduce greenhouse gas (GHG) emissions from organic waste streams. Therefore, RNG will continue to be a key strategy that will help achieve the State's near-term and long-term greenhouse gas reduction goals—including the goal of carbon neutrality by no later than 2045.[3]

Harmonizing the California policy discussion around the benefits of RNG and focusing on how to develop successful drivers to stimulate stable market growth, regardless of end use, has long been a goal of the RNG Coalition. These are complex issues that require strong coordination between CARB, its sister agencies that regulate energy and waste, and all other stakeholders to achieve the best possible policy outcome.

As we move toward carbon neutrality, the LCFS will continue to be an important driver of RNG use and, therefore, we recommend that CARB set LCFS targets in this rulemaking at a level that is necessary to

[1] For more information see: http://www.rngcoalition.com/

[2] Or displace conventional diesel fuel when used in new natural gas vehicles (NGVs).

[3] Per Executive Order B-55-18.

achieve the economy-wide carbon neutrality goal. This will certainly require aggressive targets post-2030 and may also require adjustments to targets in the late 2020s.

To establish these targets correctly, a feedback loop is likely necessary between the work done to support the development of the LCFS amendments and information gathered from the ongoing Scoping Plan process. Therefore, we support the regulation targeting an effective date of January 1, 2024. We believe that this timing will give the maximum flexibility to integrate the rulemaking with the input from the Scoping Plan and for CARB staff to develop appropriate new crediting opportunities deliberatively and rigorously for RNG.

The LCFS is Working for RNG and the Industry Stands Ready to Contribute Further GHG Reductions

The LCFS continues to be a strong driver for RNG growth. There are now 200 operational RNG production facilities in North America and over 250 more in construction or that have undergone substantial development.[4] While these are significant near-term milestones, we have only just begun to develop RNG's full potential to deliver GHG reductions. Through the RNG Coalition's Sustainable Methane Abatement & Recycling Timeline (SMART) Initiative, we believe it is possible to sustainably capture and repurpose methane that would otherwise be wasted via flare or escape fugitively into the atmosphere from more than 43,000 sites in North America by 2050.[5] Continued support from the LCFS will be a key factor in achieving this vision.

Crediting Should be Adjusted to Use Demonstrated CIs Using Full Ex-Post True Ups

With the implementation of third-party verification of actual CI performance, CARB can now adjust all crediting to be based on verified carbon intensity. We support CARB making a full transition to crediting based on verified CI performance, while still retaining the current credit issuance cycle (i.e., truing up to CI actuals ex-post rather than delaying crediting until CI actuals are known).

True ups would be especially helpful for dairy RNG projects. Dairy RNG projects have variability in their CI because their operations are impacted by external factors such as temperature and herd count. In annual verification there will be instances where a project may unexpectedly over or under generate credits, based on these external factors. Allowing dairy RNG projects to true up their credit generation (both up and down) after completing their annual verification—rather than penalizing them if they exceed their certified CIs—will improve the accuracy of credit generation in the program and ensure these projects are obtaining the full value of their true GHG reductions.

None of this should impact the ability of a project to quickly receive a CI from CARB and begin to generate credits as soon as it is actively producing RNG. Temporary pathways should also be easy to obtain, as an onerous process is an impediment to low carbon fuel project growth. CARB may also wish to establish a greater number of temporary fuel pathway codes. At a minimum, a new temporary code

[4] https://www.rngcoalition.com/

[5] We estimate that there are more than 4,400 landfills, 19,000 large farms and 20,000 wastewater treatment and lagoon facilities, food waste and agricultural sites in the US and Canada, where methane emissions naturally occur as organic materials decompose. http://www.rngcoalition.com/renewable-natural-gas-industry-announces-smart-initiative

should be set for diary biogas to electricity (aligned with the current diary biomethane to CNG/LNG/L-CNG temporary pathway set at -150 gCO_2e/MJ).

At the workshop CARB staff explored simplifying pathway processing steps, possibly by removing the "deemed complete" designation. We would support the removal of deemed complete if implemented in conjunction with a full true up. Currently project developers must wait up to a full year to receive any cashflow on a certified pathway and pathway certification timing is often out of the applicant's control. The deemed complete date signifies that a pathway applicant has satisfied all submission requirements as required under the Regulation. Although not guaranteed, the deemed complete date has essentially worked as a timestamp as to when credit generation can take effect, assuming the pathway can be certified in the subsequent quarter. Removing the deemed complete designation adds further uncertainty to the timeline of approval for pathway applications which will certainly extend cashflow receipt for project developers, therefore, we would not support removal of the deemed complete step unless a full true up is also implemented. A full true up approach could also eliminate the somewhat confusing "provisional" status for pathways.

The Rule Should Encourage the Use of M-RETS as an RNG Registry

As described above, the RNG industry is evolving quickly, and new frameworks are emerging that can likely be used to help simplify RNG tracking in the LCFS. Development of a national registry for tracking RNG production and end use could be an extra layer of protection to help CARB ensure no double counting of RNG volumes occurs nationwide. Such a system might become especially important once the number of RNG projects reaches into the thousands, which could be as soon as 2035 under our SMART initiative.

The leading registry system tracking RNG and other forms of renewable thermal energy is the Midwest Renewable Energy Tracking System (M-RETS).[6] The use of M-RETS to supplement LCFS reporting would reduce administrative burden on CARB staff and offer California a chance to harmonize the design of such systems with other jurisdictions who are now undertaking similar RNG-supportive policies.[7] Within the program to promote RNG procurement by utilities in California, the California Public Utilities Commission is considering endorsing the use of the M-RETS system.[8] LCFS alignment with this decision would minimize administrative complexity for project developers targeting end use markets in California.

[6] https://www.mrets.org/m-rets-renewable-thermal-tracking-system/

[7] For example, Oregon has approved the use of M-RETS for tracking RNG purchases by gas utilities. See: https://apps.puc.state.or.us/orders/2020ords/20-227.pdf

Green-e's Renewable Fuel certification also supports the use of such systems. See: https://www.green-e.org/docs/rf/Green-e%20Renewable%20Fuels%20Standard.pdf

[8] https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M436/K700/436700096.PDF

We Support Further Adjusting Existing Tier 1 Calculators and Adding New Calculators Where Appropriate

CARB's workshop slides showed that RNG was the fuel category with the second largest number of certified pathways in the 2019-2021 period.[9] We expect the volume of pathways to continue to increase in the RNG space. Therefore, improving simplicity and transparency of carbon intensity (CI) calculation continues to be an important goal that has not been fully achieved by the current Tier 1 calculators.[10] Some simple changes to the calculators would allow more RNG projects to utilize the Tier 1 process. Preliminary concepts that deserve attention as possible additions or adjustments in this rulemaking include:

Across all RNG Tier 1 calculators:

- The ability to report project-specific fugitive methane levels, even if lower (or higher) than the current defaults.
- The ability to report process fuels other than natural gas or electricity (e.g., propane, liquified natural gas, etc.)
- RNG trucking as an option to accommodate "virtual pipeline" projects.

For the *Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion (AD) of Organic Waste*:

- The calculation related to avoided methane from landfills should be revisited. Flyover studies have demonstrated that fugitive methane emission rates from landfills in California are larger than previously believed and that the benefits of landfill diversion (or improved capture at landfills to produce more RNG) deserve additional prioritization. Although properly quantifying landfill methane emissions remains a challenging topic,[11] more strongly incentivizing RNG systems that increase capture rate, or that allow organic waste to be diverted from landfills, will remain a no-regrets strategy.

For the *Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure*:

- More accurate default Maximum Methane Potential values by livestock category should be established.
- Simplified sector-wide default assumptions related to lagoon cleanouts used in determining baseline methane emissions should be adopted.

More generally, we also feel that CARB may want to add an additional Tier 1 calculator for woody feedstocks to various fuels (as discussed in more detail below) and explore adjusting Tier 1 calculators for non-RNG fuels to facilitate the use of RNG as a source of process energy.

[9] See slide 8 of the CARB workshop slides.

[10] For example, most dairy RNG projects use Tier 2 applications because the Tier 1 calculator is not able to correctly model common operational realities.

[11] https://insideclimatenews.org/news/15122021/methane-emissions-epa-landfills/

Continue to Approve Innovative RNG Concepts as Tier 2 Pathways

Even as the Tier 1 calculators are improved through the rulemaking process, additional near-term RNG opportunities can be created through approval of innovative Tier 2 applications. There remain many prospects to achieve millions of metric tons of emission reductions through RNG activities that are not well incented by the current rule. For example, through Tier 2 applications RNG Coalition Members are currently requesting:

- Recognition of projects that improve methane capture efficiency at landfills (or avoid landfilling) beyond regulatory requirements.
- Approval of methane reductions from industrial wastewater RNG projects (including industrial agriculture projects).
- The ability to use directly-measured project-specific Maximum Methane Potential values for livestock waste.
- Recognition of the nitrogen cycle benefits and N_2O reductions associated with controlled-release organic fertilizer derived from digestate. This would help promote all AD projects that process their digestate into fertilizer. Exploring this change is especially important if CARB wishes to incent RNG projects from California's poultry waste.

LCFS Can Help Set the Trajectory for How the RNG Resource is Used in California

California is pursuing important near-term methane reduction strategies facilitated by RNG, and the 40% reduction in methane emissions targeted by the Short-Lived Climate Pollutant Reduction Strategy for 2030 should be thought of as a beginning, not an endpoint.[12] As these strategies prove successful by 2030, they can easily be continued (or accelerated) to reduce emissions from these sectors further by 2045.

Therefore, the LCFS should aim to continue to productively use these feedstocks to be sure the sectors producing organic wastes decline toward carbon neutrality, in line with emissions reductions from other sectors. The renewable gas produced from these feedstocks will likely shift over time from biomethane toward, potentially, hydrogen (as the infrastructure to move hydrogen is developed). Just as there is no conflict between the use of renewable gases and electrification, there is no conflict between biomethane and hydrogen.

Both hydrogen and biomethane as an energy carrier can be promoted by the LCFS, but because they are so critical to reaching carbon neutrality, CARB should devote additional attention to the intersection between these renewable gases. For example, we agree with CARB's proposal in the October 2020 workshops that hydrogen now deserves its own Tier 1 calculator. This calculator should include the functionality to be able to account for the CI of the biomethane or biogas used as an input to hydrogen creation.

[12] https://ww2.arb.ca.gov/our-work/programs/slcp

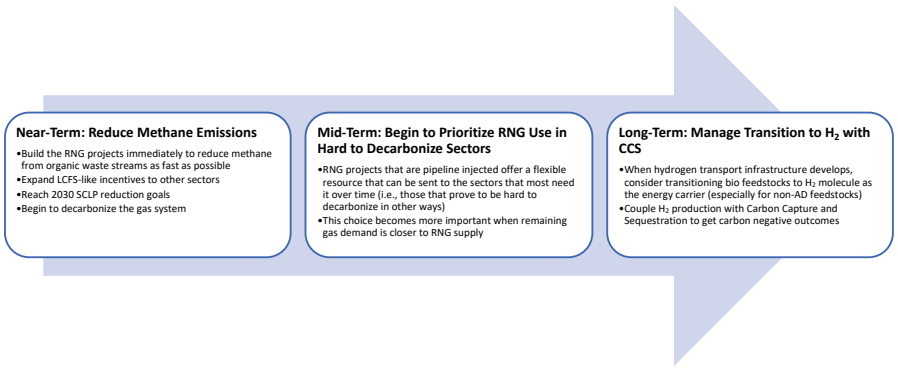

Figure 1. The LCFS Can Help California Articulate a Multi-Phase Strategy for the Use of the RNG Resource

Feedstocks used to produce RNG today can be shifted toward renewable hydrogen in the long run to produce carbon-negative outcomes when paired with carbon capture and sequestration (CCS).[13] This shift can be especially important for woody feedstocks not well suited to AD, including forest waste that can potentially help mitigate wildfire risks. Therefore, CARB should also adopt a simplified forest biomass feedstock calculator for CA-GREET which estimates emissions savings from mobilizing in-state woody wastes and residues relative to the counterfactual fate of these feedstocks.[14]

The LCFS Could Be Expanded to Encourage Renewable Gas Use Across Other End Uses

The RNG Coalition supports the sustainable development, deployment, and utilization of renewable gases from all available feedstocks, indiscriminate of the competing, sustainable technologies used, and for all sustainable end-use applications. Our members see the LCFS as a clear and stable incentive framework that allows them to build RNG production facilities and, as described above, this pipeline-interconnected supply can be shifted to whichever end use needs it most in the long-term. CARB should provide coordination and leadership on this shift so that other agencies (CEC, CPUC, CalRecycle, etc.) remain harmonized on how sustainable RNG growth can best be incentivized across all sectors and moved to the highest and best use over time.

The best use of the RNG resource may shift over time. LCFS changes that broaden the opportunity to use renewable gases would be helpful in increasing flexibility in this regard. For example, CARB could adjust the rules to expand the use of book-and-claim accounting to allow RNG used for process energy in biofuel production facilities serving California to use this method.[15] Such a change would align with the goal to also promote RNG use in stationary industrial applications, as some environmental stakeholders have expressed a desire to see.[16] RNG could essentially be deployed as an input into

[13] LLNL, *Getting to Neutral: Options for Negative Carbon Emissions in California*, Baker et al., January, 2020, Lawrence Livermore National Laboratory (LLNL) https://www-gs.llnl.gov/content/assets/docs/energy/Getting_to_Neutral.pdf

[14] For more on this concept see: Sanchez, D. and Gilani H., *Advancing Collaborative Action on Forest Biofuels in California* (Draft Report) https://bof.fire.ca.gov/media/3dwpddhk/joint-institute-forest-biofuels-draft-report-nov-8-2021_ada.pdf

[15] We recommend building this option into the Tier 1 calculators.

[16] https://www.nrdc.org/resources/pipe-dream-or-climate-solution

making other fuels, as is already allowed—but in a limited way—through the Renewable Hydrogen Refinery Credit Program and other similar existing provisions of the LCFS.[17]

Canada's draft regulation[18] for a Clean Fuel Standard allows low carbon gaseous fuels—such as RNG and hydrogen—to generate credits relative to a fossil gas baseline regardless of the end use of the gas. The retirement of these credits by obligated parties is limited to up to 10% of their liquid class reduction requirement. This limited amount of gaseous fuel crediting allows for a more levelized incentive for RNG across all industrial end uses and more strongly prioritizes development of the projects to ensure methane reductions in the near term.[19]

Conclusion

RNG Coalition appreciates the opportunity to participate and provide comment in this process. The LCFS is one of the strongest drivers of RNG development in North America and the success of this program is being observed and emulated by decisionmakers throughout North America. We look forward to continued collaboration with CARB to ensure that the sustainable production and utilization of RNG keeps creating benefits for California and our climate.

Sincerely,

/s/

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[17] CARB should recognize that, when RNG is used in non-vehicular applications, that RNG volume will not receive federal RFS credit (RINs), so any new LCFS options that targets RNG use outside of NGVs might not immediately be financially optimal for all RNG development. However, RNG use has saturated the existing NGV demand in California and growth in NGVs is not occurring as fast as growth in total supply of RNG. Due to these dynamics, RNG producers will either begin exploring use in NGVs outside of California or respond to new opportunities in the LCFS, which would allow this RNG to continue to benefit California's GHG reduction goals.

[18] https://gazette.gc.ca/rp-pr/p1/2020/2020-12-19/html/reg2-eng.html

[19] If the use of RNG is already incented through other California programs—such as the forthcoming utility procurement program for core customers under Senate Bill 1440 and/or dedicated sector-specific programs such as the one envisioned under SB 596 (Becker, 2021)—these uses could be excluded from such expanded LCFS gaseous fuel crediting.