

April 4, 2022

Rajinder Sahota
Deputy Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814



Re: 2022 Greenhouse Gas Scoping Plan, Comments on Initial Modeling Technical Workshop

Dear Ms. Sahota,

The Coalition for Renewable Natural Gas (RNG Coalition)¹ offers the following input on the scenario results presented by California Air Resources Board (CARB) during the Initial Modeling Results Workshop (Workshop) on March 15, 2022.² RNG Coalition's previous comments addressed the environmental benefits and long-term role of renewable gas in California,³ our industry's role in reducing short-lived climate pollutants,⁴ and the draft scenarios and inputs previously presented by CARB.^{5,6}

We appreciate CARB's continued work on these issues as the 2022 Greenhouse Gas Scoping Plan (Scoping Plan or Plan) continues to take shape. Our comments herewithin focus primarily on the projected energy consumption and greenhouse gas (GHG) emission portions presented during the Workshop. As we have discussed in previous comments, RNG Coalition appreciates the complexity of predicting California's future energy demand, the low carbon resources necessary to satisfy that demand, and the best strategies to reduce emissions from all sectors.

CARB Should Set Ambitious RNG Use Goals in Line with the State's Carbon Neutrality Goal

RNG provides an opportunity to help decarbonize existing natural gas infrastructure⁷ 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 2045.⁸

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

¹ <http://www.rngcoalition.com/>

² https://ww2.arb.ca.gov/sites/default/files/2021-08/carb_presentation_sp_scenarioconcepts_august2021_0.pdf

³ <https://www.arb.ca.gov/lists/com-attach/35-sp22-kickoff-ws-BjRQZ1VkBWFVY1Jr.pdf>

⁴ <https://www.arb.ca.gov/lists/com-attach/13-sp22-slcp-ws-UGJRZIBhUTsBNQk7.pdf>

⁵ <https://www.arb.ca.gov/lists/com-attach/44-sp22-concepts-ws-ATNXYAc2UjgHMVBj.pdf>

⁶ <https://www.arb.ca.gov/lists/com-attach/70-sp22-inputs-ws-UGJUY1NjA2ADN1Jg.pdf>

⁷ Or displace conventional diesel fuel when used in new natural gas vehicles (NGVs).

⁸ Per Executive Order B-55-18.

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 outcomes.

Comments on Initial Modeling Results

The Modeling Results Should Show Key Metrics Relevant to the Clean Investment Community, such as the Necessary Level of Carbon Intensity Improvements in the Transportation Sector

As we move toward carbon neutrality in California, the Low Carbon Fuel Standard (LCFS) will continue to be an important driver of low carbon fuel deployment and, therefore, we recommend that CARB begin to signal what range of LCFS targets will be necessary to help achieve the economy-wide carbon neutrality goal across all scenarios under consideration.

A clear feedback loop between the analytical work done to support the Scoping Plan and that done for the eventual development of future LCFS rule amendments would provide useful transparency and consistency that would allow investors to make informed decisions about how to deploy capital to produce low carbon fuels. Specifically, as a near-term step, we recommend that CARB present modelling results to show the range of carbon intensity (CI) targets more clearly under each alternative scenario for key milestone years.⁹

All Scenarios Underrepresent RNG Use Currently Required by Law

We are concerned that the initial modeling results appear to show no significant level of RNG (biomethane) use.¹⁰ This ignores the important near-term GHG benefits of RNG, which are well-established by California's various agencies and, at minimum, does not account for existing and emerging California policies requiring the use of RNG.

For example, California's recently adopted Renewable Gas Standard (RGS) will require the state's gas utilities to procure approximately 12% of current core gas demand as RNG by 2030, with contracts lasting through 2040.¹¹ The California Public Utilities Commission Decision implementing this program also calls for consideration of a similar RNG procurement mandate for the non-core gas suppliers. The "fuels transition" portion of the analysis should reflect the volumes of RNG through relevant timeframes required by existing state policy and should specifically outline any transition to use in other sectors (or other energy carriers,¹² such as hydrogen or liquids) during the later years.

Notably, the Building Energy Demand section reflects fossil natural gas usage in all scenarios, including the "no combustion" Alternative 1 scenario. This section does not appear to include a category for

⁹ For comparison purposes, Oregon's Clean Fuel Standard has recently signaled they will target a 37% CI decline by 2035. See: <https://www.oregon.gov/deq/rulemaking/Documents/cfp2022m3Pres.pdf> (slide 22)

¹⁰ E3 Workshop Slides, Slide 18.

¹¹ CPUC, Decision Implementing Senate Bill 1440 Biomethane Procurement Program: <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M453/K954/453954308.PDF>

¹² If CARB envisions a different use for current RNG feedstocks post 2040, that should be explicitly defined in CARB's analysis.

biomethane, despite existing mandates and voluntary programs that will promote its use as a significant replacement for natural gas in the building sector in the 2035 timeframe.

The “Energy Demand by Fuel” section should also reflect anticipated volumes per existing mandates and expected voluntary purchases. We appreciate that CARB has included both hydrogen from bioenergy with carbon capture and storage (BECCS) and electrolysis—both of which are important GHG reduction strategies—however, we request more clarity surrounding RNG use. Similarly, the Fuels Transition section shows that biofuels are used for sustainable aviation fuel (SAF) or BECCS to hydrogen. We ask that CARB clarify if this is where current RNG feedstocks are expected to be used beyond 2040 (which we could support) and that this section be modified to reflect any expected transition from RNG use to liquids/hydrogen more clearly.

Limitations of Alternative 1 Scenario

We respectfully assert that the GHG reductions in the proposed Alternative 1 scenario¹³ have been overstated compared to what could practicably be achieved using the aggressive “early retirement” strategies for vehicles and appliances implied by the description of the scenario. Convincing consumers to undertake early retirement of working vehicles and appliances—including those that are as new as five years old, which Alternative 1 relies on—would be extremely difficult to accomplish in practice.

Based on prior examples of such programs, it will likely be hard to motivate individuals to replace functional vehicles and appliances in a meaningful and cost-effective way. For example, a 2010 study¹⁴ of the “Cash for Clunkers” program¹⁵ showed that efforts to motivate early retirement of aging combustion vehicles with more efficient combustion vehicles had implied costs of over \$450 per ton of carbon dioxide equivalent. The program only modestly shifted purchases in time (likely by less than a year) and had high reversal rates (because fewer autos were purchased in the period after the program expired).¹⁶ The average age for a vehicle retired under that program was 14 years old.¹⁷ Therefore, there is little from this example that implies that a more aggressive version of such a policy, focused on even newer vehicles, deserves to be a cornerstone of any scenario under consideration by CARB. In an opinion piece in *Scientific American*, Professor Jeffrey D. Sachs of Columbia University, went as far as to call Cash for Clunkers “a cautionary tale for the future of climate change control.”¹⁸

If aggressive early retirement, as considered in Scenario 1 were to be pursued, CARB should not ignore the increased global emissions that this will incite from accelerated vehicle and appliance production (sometimes called embodied emissions from premature manufacturing and/or premature disposal),

¹³ <https://ww2.arb.ca.gov/sites/default/files/2022-03/SP22-Model-Results-E3-ppt.pdf>

¹⁴ Knittel, Christopher R., *The Implied Cost of Carbon Dioxide Under the Cash for Clunkers Program* (August 31, 2009). Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1630647

¹⁵ Cash for Clunkers is listed as an example policy informing how early vehicle retirement is modeled in slide 6 of E3’s Workshop presentation: <https://ww2.arb.ca.gov/sites/default/files/2022-03/SP22-Model-Results-E3-ppt.pdf>

¹⁶ Atif Mian & Amir Sufi, 2012. “The Effects of Fiscal Stimulus: Evidence from the 2009 Cash for Clunkers Program,” *The Quarterly Journal of Economics*, Oxford University Press, vol. 127(3), pages 1107-1142. <https://ideas.repec.org/a/oup/qjecon/v127y2012i3p1107-1142.html>

¹⁷ https://www.everycrsreport.com/files/20100303_R40654_31334bf7ef7706220966685afd51009808cb82de.pdf

¹⁸ <https://www.scientificamerican.com/article/a-clunker-of-a-climate-policy/>

which can be significant, especially for vehicles,^{19,20} and may occur outside of California as a form of emissions leakage.

This critique of Alternative 1 should not be read to imply that we oppose the swiftest possible action to reduce greenhouse gases—only that we oppose poorly crafted policy solutions that do not consider the full universe of abatement strategies and do not try to minimize total societal costs. Alternative 2-4 target extremely ambitious carbon neutrality timelines using a broader suite of technology options. An aggressive strategy which creates opportunities for all available technologies—and employs IPCC recommended²¹ strategies such as focusing on reducing methane emissions as quickly as possible—will provide the best opportunity to mitigate the most harmful effects of climate change. Notably, under the non-energy emissions category, Alternative 2 achieves the lowest emissions from the agriculture and organic waste sectors, which should be reflected equally in other scenarios based on CARB’s reliance on this strategy for reducing short-lived climate pollutants.

Comments on Natural and Working Lands and Unequal Climate Impacts in the State of California

Although the modeling focused on natural working lands and unequal climate impacts have not been a focus of RNG Coalition’s comments in the past, we support both of these analyses as crucial parts of the Scoping Plan. Policies that use forest biomass with carbon capture to produce hydrogen or RNG can provide a pathway to carbon negative emissions and help mitigate wildfire risk. This concept is addressed by California’s recent RGS decision, which calls upon California’s largest utilities to explore pilot projects which can convert woody biomass to RNG. The increased production of RNG and renewable hydrogen from biological feedstocks is also viewed as a major component of California Department of Resources Recycling and Recovery’s plan for improving organic waste management. CARB’s final Plan should accordingly touch upon how improved organic waste management practices due to RNG, composting, etc., will have a positive impact on surrounding communities within the “unequal climate impacts” section.

Conclusion

RNG Coalition thanks CARB for the opportunity to provide continued feedback on the Scoping Plan and the initial modeling results presented on March 15, 2022. We respectfully recommend that CARB better incorporate RNG use into the near-term results to reflect existing state policy and overall gas sector decarbonization trends. Renewable gases such as RNG and hydrogen are poised to play a continued and growing role in the state’s climate policies, and we look forward to a robust Scoping Plan which reflects that reality.

¹⁹ <https://iopscience.iop.org/article/10.1088/1748-9326/5/4/044003>

²⁰ https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG_ICCT-Briefing_09022018_vF.pdf

²¹ For example, the Intergovernmental Panel on Climate Change calls methane capture and recovery from solid waste management a short-term ‘win-win’ policy that simultaneously improves air quality and limits climate change. See page 6-91 of: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_06.pdf

Sincerely,

/S/

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