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RNG Coalition Comments on SB 100 Draft Report

Additional submitted attachment is included below.

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California Energy Commission
Docket Office
1516 Ninth Street
Sacramento, CA 95814



RE: Docket 19-SB-100 – SB 100 Joint Agency Report Draft Report

The Coalition for Renewable Natural Gas (RNG Coalition)¹ offers this letter regarding the 2021 SB 100 Joint Agency Draft Report (Draft Report) prepared by the California Energy Commission, California Public Utilities Commission, and California Air Resources Board (Joint Agencies) pursuant to achieving carbon neutrality in California’s electricity supply by 2045. Our comments below address the importance of including renewable natural gas (RNG) and renewable hydrogen (RH2), in both the Draft Report and in future SB 100 work, with emphasis on the potential role of these renewable gases as the long-term energy carriers used in dispatchable power resources.

About the RNG Coalition and the RNG Industry

The RNG Coalition is the trade association for the RNG industry in the United States and Canada. Our diverse membership is comprised of leading companies across the RNG supply chain, including those with the potential to supply RNG and RH2 in support of California’s SB 100 goals. Together we advocate for the sustainable development, deployment, and utilization of RNG so that present and future generations will have access to domestic, renewable, clean fuel and energy in California and throughout North America.

RNG is a key strategy for reducing greenhouse gas (GHG) emissions from both the organic waste/energy use sectors and providing additional reliability benefits when deployed in the power sector. Accordingly, we respectfully urge the Joint Agencies to include RNG and RNG-derived RH2 in SB 100 resource modeling, ideally in the final draft of the 2021 SB 100 Joint Agency Report and certainly in future iterations of the analysis.

Benefits of Renewable Gas in the Power Sector

As we’ve said in multiple prior comment letters in this docket,² the potential for RNG and RH2 to serve as fuel for dispatchable power resources must not be brushed aside or trivialized. California has already experienced recent issues related to grid reliability and—although intermittent renewable generation may not have been the primary causal factor—the recent multi-agency report³ on this issue makes it

¹ For more information see: <http://www.rngcoalition.com/>

² See our prior comments dated November 27, 2019 and September 15, 2020. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=234702&DocumentContentId=67557> and <https://efiling.energy.ca.gov/GetDocument.aspx?tn=230871&DocumentContentId=62512>

³ <http://www.caiso.com/Documents/Preliminary-Root-Cause-Analysis-Rotating-Outages-August-2020.pdf>

clear that adequate planning (and associated revisions to market structures) is necessary to ensure the structural changes needed to achieve long-run reliability and carbon neutrality simultaneously.

This makes it even more surprising that the role of drop-in renewable gases such as RNG and RH2 have not been given significant consideration in the context of SB 100. Using a generic zero carbon firm resource as a proxy for emerging helpful technologies is simply no substitute for actually planning how these low carbon technologies will be built to ensure reliability in the system. Exclusion of renewable gases from this important work offers developers of RNG/RH2 projects little to no motivation to begin to develop the needed supply, and conflicts with signals being sent by other agencies about the importance of these low carbon technologies.

Dispatchable resources fueled by RNG and RH2 have the ability to serve as a clean alternative in both traditional gas combustion and fuel cell applications through which approximately 43% of California's electricity is currently generated using fossil natural gas as a feedstock.⁴ The Draft Report shows a significant share of 2050 generation capacity coming from gas-fired resources in all scenarios,⁵ but does not explore the challenge of replacing the fuel used in these units with adequate supply of low carbon gas.

Utilizing methane from organic wastes to produce RNG is a proven strategy for reducing GHG emissions in the waste sector and displacing fossil fuel carbon dioxide emissions in other end use sectors. Indeed, other California agencies are currently working to employ RNG in pursuit of the state's carbon neutrality goals. For example, bioenergy production and utilization serve as a core strategy in CalRecycle's waste diversion goals under SB 1383.⁶

SB 100 Modeling Should Include RNG and RH2

Facilitating the multi-sectoral GHG benefits of waste-derived renewable gaseous fuels through their use in the power sector presents a unique opportunity to further California's GHG reduction goals. We encourage the Joint Agencies to consider this holistic perspective—particularly the benefits which pertain directly to SB 100 implementation—in their analysis of drop-in renewable gases.

RNG Coalition appreciates acknowledgement by the Joint Agencies that there is increased traction for RNG and hydrogen as drop-in fuels in the power sector. However, in the context of SB 100 the Joint Agencies continue to assert that these technologies are not yet commercially available, that adequate cost and supply data for modeling does not exist, and that RNG supply would likely not be available for use in the power sector.⁷

RNG Coalition respectfully disagrees with these conclusions—especially that renewable gas supply cannot be well modeled. This conclusion from the Joint Agencies is confusing because such modelling has been done before, both in California and in other jurisdictions, by all three agencies and by the same

⁴ <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/electric-generation-capacity-and-energy>

⁵ See Figure 29 of the Draft Report.

⁶ <https://www.calrecycle.ca.gov/climate/slcp>

⁷ See Draft Report pages 66-68.

consulting firm used to support the Draft Report—Energy and Environmental Economics (E3).⁸ For example, use of RNG in the power sector was included in recent modeling conducted by E3 for California Air Resources Board in the primary document that has been published so far related to achieving statewide carbon neutrality.⁹

Modeling conducted by E3 in other states contexts also includes renewable gases as an important GHG reduction strategy in the power sector. For example, E3 often calls attention to the potential role of renewable gas (and biomass generally) in serving peak electricity demand and showing the benefits of complementing intermittent renewables with dispatchable, low carbon sources.¹⁰ All of this prior work recognizes that conventional natural gas should be replaced with RNG and RH2 wherever possible in pursuit of a carbon neutral (or carbon negative) outcome.

Renewable gas is commercially proven and significant data is provided about RNG and hydrogen to the California Air Resources Board under the Low Carbon Fuel Standard (LCFS). CEC examined RNG issues carefully in the 2017 Integrated Energy Policy Report¹¹ and CPUC has studied the issue extensively as they adopted standards for pipeline injection.¹²

Furthermore, there is data available from multiple external studies which could be employed to model RNG in the power sector, including a comprehensive study conducted in 2019 by ICF for the American Gas Foundation which includes cost and supply potential for various RNG feedstocks by state.¹³ Based on the upstream portion of emission avoidance, bioenergy with carbon capture and sequestration (BECCS) could also be used to create carbon negative emissions. A recent study by Lawrence Livermore National Lab¹⁴ provides a comprehensive analysis of this concept, with organic-waste-derived hydrogen paired with CCS as the largest category providing carbon negative emission reductions (i.e., combining multiple low carbon technologies together to achieve carbon negative performance). Anaerobic digestion (AD) of organic wastes to produce RNG is currently the lowest hanging fruit for an input to produce non-fossil hydrogen and achieve negative emissions performance in this manner.

Although the vast majority of RNG in California is currently utilized in the transportation sector, we believe pipeline-interconnected RNG projects can be shifted toward whatever end use needs the RNG

⁸ E3 has produced a series of related work using the PATHWAYS model, much of which was funded by CARB and the CEC that includes renewable gases. This series includes: The [2017 Scoping Plan Pathways Analysis](#), [Deep Decarbonization in a High Renewables Future: Updated Results from the California PATHWAYS Model](#) (June 2018), [Residential Building Electrification in California](#) (April 2019), [The Challenge of Retail Gas in California's Low Carbon Future](#) (April 2020). All of this work shows the complementary nature of RG and other low-carbon technologies, but the work does not consistently select the same best end-use sector(s) for biomethane/RH2.

⁹ https://ww2.arb.ca.gov/sites/default/files/2020-10/e3_cn_final_report_oct2020_0.pdf

¹⁰ See recent Climate Action Plan material produced by E3 for [Colorado](#) and [New York](#).

¹¹ <https://efiling.energy.ca.gov/getdocument.aspx?tn=223205> (see Chapter 9).

¹² See CPUC Docket R.13-02-008.

¹³ American Gas Foundation, *Renewable Sources of Natural Gas: Supply and Emissions Reduction Assessment*, 2019 <https://gasfoundation.org/wp-content/uploads/2019/12/AGF-2019-RNG-Study-Full-Report-FINAL-12-18-19.pdf>

¹⁴ 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

most over time and that the state should build consideration of RNG and RH2 into all future analysis related to the topic of decarbonization. Acknowledging that some of this supply will likely go to displace fossil natural gas in non-power stationary applications, we believe that there could still be significant renewable gas supply available for providing a helpful role in the power sector—especially if proper flexible incentives are established and this proves to be the highest and best use of RNG over time. With these factors in mind, it is possible and prudent for the Joint Agencies to include RNG in their modeling and in the final 2021 SB 100 Joint Agency Report or future iterations.

Conclusion

RNG and RH2 are the exact types of versatile fuel sources envisioned by the Joint Agencies’ as needed under SB 100. Given the alignment of deploying RNG in the power sector with other statutory goals and GHG reduction strategies, the availability of data that could be used in power sector modeling, and the potential to produce clean firm power, the Joint Agencies should include renewable gases in all future SB 100 Joint Agency Reports and—at a minimum—provide greater commitment to do so in future work in the final draft of the current iteration. RNG Coalition appreciates the opportunity to provide feedback on this Draft Report and looks forward to working with the Joint Agencies to evaluate the role of renewable gases under SB 100.

Sincerely,

/s/

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