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BAC Comments on RNG Workshop for 2021 IEPR

Additional submitted attachment is included below.

September 14, 2021

The Honorable J. Andrew McAllister
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Comments on 2021 IEPR – Renewable Natural Gas

Dear Commissioner McAllister:

The Bioenergy Association of California (BAC) submits these comments on the August 31 workshops on Renewable Natural Gas for the *2021 Integrated Energy Policy Report.* BAC supports a focus on RNG in the 2021 IEPR given the importance of RNG to meet California's climate, air quality, wildfire, and waste reduction policies. Renewable gas will also be critical to decarbonize hard to electrify sectors and to provide reliability in the electricity sector itself. BAC's comments on the August 31 workshops focus on several issues:

- The urgency of reducing SLCP emissions, including anthropogenic black carbon;
- Need to prioritize instate RNG;
- Defining the highest and best use of RNG;
- Incentives to promote RNG in the transportation sector
- Policies to promote RNG in electricity sector
- Need for correct and consistent definitions.

BAC represents more than 80 local governments, public agencies, private companies, and non-profits that are working to convert organic waste to energy. BAC's public sector members include environmental, air quality, waste and wastewater agencies, research institutions, publicly owned utilities, community and environmental groups. BAC's private sector members include energy and technology companies, developers, waste industry, agriculture and food processing, investor-owned utilities, investors, and others.

BAC's comments on the August 31 workshops are below.

1. **California Must Step Up Efforts to Reduce SLCP Emissions, Including Black Carbon, to Maintain Its Leadership on Climate Change.**

BAC urges the CEC to focus on the urgency of SLCP reductions throughout the IEPR and in every other CEC proceeding, and to coordinate with other agencies, including but not limited to the California Air Resources Board (CARB) and the California Public Utilities Commission (CPUC), so that there is an integrated, consistent and unified "whole of government" approach to reducing SLCPs adopted by all of California's state agencies. Simply put, there is nothing more urgent or more immediately beneficial California can do to address climate change. The IPCC highlighted the role of SLCP's in its most recent climate assessment and its "Code Red" report, calling for urgent SLCP reductions. Closer to home, climate and energy experts around the state recently issued a paper calling on California to step up its efforts to reduce SLCP emissions and saying that the failure to do so is costing California its leadership on climate issues.[1]

Dr. V. Ramanathan, a climate and atmospheric scientist at UC San Diego, has stated that reducing SLCP emissions is "the last lever we have left" to avoid catastrophic climate change.[2] Not only are SLCPs ten to thousands of times more damaging to the climate than the CO_2 emitted from fossil fuel burning, but they only stay in the atmosphere for a few hours to a few years. Reducing them, therefore, benefits the climate right away. Unfortunately, fossil fuel reductions don't benefit the climate for decades and we simply do not have decades left to avert catastrophic climate changes.

BAC urges the CEC to make SLCP reduction its highest priority, not just in the RNG chapter, but the IEPR generally. This includes not just opportunities to reduce methane, but black carbon as well.

Methane is not the only, or even the most damaging, SLCP. In California, black carbon is a much larger source of SLCP emissions and has a much higher Global Warming Potential than methane. It is critical, therefore, to focus on measures to reduce black carbon as well as methane when considering RNG. This means that the IEPR should address and encourage opportunities to convert forest biomass and agricultural waste to RNG to avoid black carbon emissions, in addition to opportunities to avoid methane emissions from other forms of organic waste.

The Public Utilities code definition of biomethane includes the methane from the noncombustion conversion of biomass waste.[3] The definition was expanded pursuant to AB 3163 (Salas, 2020) precisely so that the state would be able to address biomass waste that would otherwise be burned or landfilled – and therefore release SLCP emissions. SB 1383, the state's SLCP law, also requires a 50 percent reduction in anthropogenic black carbon. Both the CEC and CARB should classify prescribed fire

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[1] Kammen, Ramanathan, Matlock, et al, "*Accelerating the Timeline for Climate Action in California,"* submitted to Environmental Research Letters, 2021. Available at: https://arxiv.org/abs/2103.07801 [arxiv.org].

[2] Presentation of Dr. V. Ramanathan, UC San Diego and Scripps Institute, Presentation June 24, 2021 at MoveLA Symposium on Short-Lived Climate Pollutant Reductions.

[3] Public Utilities code section 650.

and human caused wildfires as anthropogenic black carbon since they are caused by human activity or infrastructure, and plans to reduce SLCP emissions should include strategies to reduce black carbon emissions from burning of forest and agricultural waste.

BAC also urges the CEC to consider recommendations in the *California Forest Carbon Plan, Forest Biomass Utilization Plan*, and CARB's plan to phase out open burning of agricultural waste, all of which recommend converting agricultural and forest waste to renewable gas to reduce black carbon emissions.

Recommendation: The CEC should prioritize SLCP reductions throughout the IEPR and should include opportunities to reduce both methane and black carbon by increasing the production and use of RNG and other forms of bioenergy. The IEPR should also incorporate recommendations from the state's forest and agricultural plans related to non-combustion biomass conversion.

2. Need to Prioritize Instate RNG to Achieve the SLCP Reductions Required by State Law.

In order to meet the methane and black carbon requirements of SB 1383, California should prioritize the development of instate RNG. The IEPR should focus on opportunities to convert instate organic waste of all types to RNG, which not only provides the benefit of avoided emissions of SLCPs such as black carbon and methane, it also avoids CO_2 emissions associated with use of fossil fuels for end uses. This includes:

- Organic waste that must be diverted from landfills by 2025;
- Forest waste that must be removed pursuant to SB 901 (Dodd, 2018) and the 2020 Forest Stewardship Agreement between California and the U.S. Forest Service;
- Agricultural waste that cannot be open burned in the San Joaquin Valley after 2025;
- Dairy and livestock manure; and
- Biogas from landfills and wastewater treatment facilities.

In the past decade, California has enacted numerous laws that require a focus on instate biomethane and biogas to help reduce SLCP emissions, landfill-related methane emissions, wildfire, and more. Those laws include:

- AB 1900 (Gatto, 2012) requires the commission to "adopt policies and programs that promote the in-state production and distribution of biomethane."[4]

[4] AB 1900 (Gatto), Statutes of 2012, Chapter 602, codified in Public Utilities Code § 399.24(a).

- SB 1122 (Rubio, 2012) requires the commission to "encourage gas and electrical corporations to develop and offer programs and services to facilitate development of in-state biogas for a broad range of purposes." [5]
- AB 2313 (Williams, 2016) requires the commission to consider options to increase instate biomethane production and use.[6]
- SB 840 (Budget, 2016) states that for "California to meet its goals for reducing emissions of greenhouse gases and short-lived climate pollutants, the state must reduce emissions from the natural gas sector and increase the production and distribution of renewable and low-carbon gas supplies."[7]
- SB 1440 (Hueso, 2018) requires the CPUC to consider adopting a procurement requirement for biomethane that is produced and used instate or is physically delivered to California.[8]

Recommendation: The IEPR chapter on RNG should focus on strategies to increase instate RNG to help meet the requirements of SB 1383, SB 901, and other important state policies.

3. Highest and Best Use of RNG

The CEC and ARB have both asked in recent workshops what the highest and best use of RNG is. SB 1383 required the CEC to address this question in the 2017 IEPR and the CEC largely avoided answering the question[9] – for good reason. It is impossible to determine what the highest and best use of RNG will be decades from now when it depends on many hard to predict factors across multiple sectors and technologies. It is far more urgent to increase instate production of RNG – to reduce SLCP emissions as fast as possible – regardless of the end use.

In addition, the highest and best use of RNG is likely to change over time. BAC agrees with the comments of Sam Wade, Policy Director of the Renewable Natural Gas Coalition (RNGC) at the August 31 workshop when he suggested that we consider the highest and best use for the short-, medium, and long-term separately.[10] BAC agrees with RNGC that the highest and best use in the next decade is to replace diesel, especially in diesel-powered heavy duty trucks that are the largest source of air pollution in the San Joaquin Valley and the South Coast Air Districts, the two most polluted air districts in the country. We should also use RNG in place of diesel-powered backup generators, which are proliferating in California due to PSPS events and other grid challenges. Using RNG in place of diesel reduces SLCP emissions both from organic

[5] SB 1122 (Rubio), Statutes of 2012, Chapter 612, codified at Public Utilities Code § 399.20(f)(2)(D).
[6] Public Utilities Code § 784.2.
[7] Senate Bill 840 (Budget), Statutes of 2016, SEC. 10, §§ (b) – (i).
[8] SB 1440 (Hueso), Statutes of 2018, Chapter 739. See Public Utilities Code section 651(b)(3).
[9] California Energy Commission, *2017 Integrated Energy Policy Report*, at pages 284-285.
[10] Presentation of Sam Wade, RNGC, at the August 31 IEPR workshop, slide 18.

waste and from diesel, so it's a double win for the climate and air quality, while also dramatically reducing criteria and toxic air pollutants.

RNG is also valuable in the electricity sector to increase reliability. RNG can provide dispatchable generation and long duration energy storage. It can provide distributed generation or be used in existing power plants. It can also increase the duration and reliability of microgrids. Longer term, biomethane and biogas may be converted to hydrogen, maximizing the climate and air quality benefits, for a variety of end uses.

Deciding on the highest and best use of RNG also depends on the location of the RNG production (the organic waste). The cost-effectiveness of projects (and the feasibility generally) depends heavily on whether they are close to power lines, pipelines, large fleets, and other factors. The assessment of highest and best use is highly dependent on the location of the project. RNG simply does not lend itself to a "one size fits all" approach, and a multi-faceted, geographically flexible approach is likely to be more successful in achieving both energy reliability and SLCP reductions.

Recommendation: Identify strategies to increase all end uses of RNG rather than trying to identify the highest and best use.

4. Need Incentives to Increase RNG Use in Transportation Sector

BAC supports CPUC adoption of a biomethane procurement requirement for the state's regulated gas utilities, but that is not a sufficient market for RNG to meet the requirements of SB 1383 nor does it help eliminate diesel use as fast as possible.

To meet the state's SLCP, organic waste diversion, and wildfire reduction policies, the IEPR should recommend policies and incentives to increase RNG use to replace diesel in the transportation and electricity sectors. In particular, the CEC should provide incentives to increase the use of RNG in the transportation sector. Above all, BAC urges the CEC to continue to incentivize near-zero emission heavy duty trucks that run on RNG. This is the only way to eliminate diesel-powered, heavy-duty trucks where there is no commercially viable ZEV option. Incentivizing near-zero emission trucks that run on RNG would reduce SLCP emissions from organic waste and from diesel, providing many times greater carbon reductions than electric vehicles running on the California power grid. For Class 7 and 8 trucks, as well as garbage trucks, there is no ZEV option and may not be one for a decade or longer. In the meantime, near-zero emission trucks running on RNG can cut NOx by 90 percent or more and virtually eliminate toxic air contaminants.

Given the urgency of reducing SLCP emissions and NOx from heavy duty trucks, the CEC should continue to offer Clean Transportation Program funding for near-zero emission trucks that run on RNG.

Recommendation: Allocate 20 percent of Clean Transportation Program funding to near-zero emission trucks that run at least partially on instate RNG until a commercially viable ZEV is available in the equivalent vehicle class.

5. Need Policies to Increase RNG Use in Electricity Sector

BAC urges the Commission to include strategies to increase RNG use in the electricity sector where RNG – and other forms of renewable gas – can provide critical reliability services such as dispatchable generation, microgrid support, long duration storage, and more. BAC also urges the Commission to consider the whole range of renewable gas options, not just RNG, for this purpose. California's forest, agricultural, and urban wood waste can be converted to biogas (also known as bio-syngas), which can be used for power generation and for combined heat and power. Both biomethane and biogas can also be converted to hydrogen and then deployed with non-combustion generation technologies such as fuel cells and linear generators. All of these forms of renewable gas made from a variety of organic waste feedstocks should be included in the IEPR, not just RNG (biomethane).

The IEPR chapter on RNG should consider opportunities and benefits of using RNG and other forms of renewable gas for power generation. In addition to its benefits for reliability, renewable gas from organic waste is the only form of renewable power that can provide carbon negative emissions. This will be critical to achieve carbon neutrality by mid-century or sooner,[11] as called for by Governor Newsom's recent Executive Order. No other SB 100 resource is truly zero carbon on a lifecycle basis. Solar, wind, geothermal, hydropower, and batteries all have some (albeit small) greenhouse gas emissions on a lifecycle basis. For example, according to the National Renewable Energy Lab under the U.S. Department of Energy, solar and wind power have lifecycle carbon intensities between 4 and 40 grams of CO2e per kilowatt hour.[12] Those include emissions from the raw materials, manufacturing, transport, land use disturbance, construction, and transmission.

In order to achieve zero carbon electricity in California, it will be essential to include some carbon negative power sources to offset emissions that cannot be eliminated. Renewable gas from organic waste is the only opportunity to produce carbon negative electricity.

Recommendation: The IEPR should include recommendations to increase renewable gas from organic waste to increase reliability and provide carbon negative emissions in the electricity sector. The CEC should also coordinate with ARB and the CPUC to consider whether the state's RPS program should move to a carbon intensity based program more similar to the LCFS.

[11] Lawrence Livermore National Lab, *Getting to Neutral – Options for Negative Carbon Emissions,"* January 2020, at page 2.

[12] See, https://www.nrel.gov/analysis/life-cycle-assessment.html.

6. Need Accurate and Consistent Definitions

The workshop presentations on August 31 used a number of terms incorrectly and/or inconsistently. The IEPR should be more accurate and use the terms adopted in state law or in the *RPS Eligibility Guidebook*. The presentations by Verdant and others offer a variety of definitions that are inconsistent in the presentations themselves and, in several cases, contradict the definitions in state law. This leads to unnecessary confusion and complications and should be corrected.

For example, Verdant defines biogas as "used onsite" (without regard to feedstocks) and defines RNG as "Biogas that has been further refined and (usually) injected into the NG distribution network." Neither of these definitions is consistent with state law, the *RPS Eligibility Guidebook*, or CPUC Decisions related to bioenergy.

a) Biogas Definition - Public Utilities Code section 650 defines biogas as the gas from anaerobic digestion. The *RPS Eligibility Guidebook* has defined biogas as "including digester gas, landfill gas, and any gas derived from a feedstock eligible under the California renewables portfolio standard." In the BioMAT program, pursuant to SB 1122 (Rubio, 2012) the CPUC defined biogas to include the gas from gasification of RPS eligible organic waste.[13] The Verdant definition is not consistent with any of these definitions adopted in state law or policy.

b) Biomethane Definition – Public Utilities Code section 650 defines biomethane to include the gas from anaerobic digestion as well as the gas from noncombustion thermal conversion of RPS eligible organic waste. This definition was revised pursuant to AB 3163 (Salas, 2020) and makes much more sense than other definitions since the term "biomethane" should include methane from biological (organic) feedstocks.

c) RNG – The term RNG is never used in state statute. Although a convenient term because it is an acronym, it's not a very accurate term since natural gas is a fossil fuel that contains more than methane. BAC urges the CEC to use the term "renewable gas," which is used several times in state law[14] and is defined to include both biogas and biomethane. Renewable gas is also broad enough to include renewable hydrogen, which is a very high priority going forward.

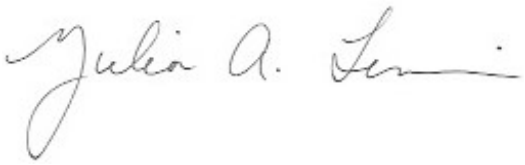
Recommendation: The IEPR should use terms and definitions that are consistent with state law and policy, including definitions related to renewable gas, biogas, and biomethane. If the IEPR uses the term "RNG," then it should be defined to include RPS eligible forms of biogas, biomethane (as defined by PU Code 650) and renewable hydrogen.

[13] CPUC Decision 14-12-081 at page 9.

[14] See, eg, Health and Safety Code section 39730.8.

Thank you for your consideration of these comments.

Sincerely,



Julia A. Levin
Executive Director