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**Agricultural Energy Consumers Association and Agricultural Council of California
Joint Comments on the June 27, 2017 Renewable Gas Workshop and Staff White
Paper (17-IEPR-10)**

Additional submitted attachment is included below.



July 14, 2017

California Energy Commission
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Agricultural Energy Consumers Association and Agricultural Council of California Joint Comments on the June 27, 2017 Renewable Gas Workshop and Staff White Paper (17-IEPR-10)

Dear Chair Weisenmiller and Energy Commission Staff:

The Agricultural Energy Consumers Association¹ (“AECA”) and the Agricultural Council of California² (“AG Council”) are pleased to provide the following comments on the CEC’s June 27, 2017 IEPR workshop regarding renewable gas development in California. AECA and the AG Council work closely with the state’s dairy industry and on the development of biogas projects. AECA and AG Council members were also deeply involved in the development of SB 1383 (Lara) and specifically the dairy methane reduction and renewable gas provisions. AECA and AG Council have actively supported the development of renewable bioenergy opportunities in California that, in turn, provide significant opportunities for methane/greenhouse gas (“GHG”) emissions reductions, clean power generation and storage, and sustainable environmental benefits.

¹ AECA is a nonprofit organization representing the energy interests of California agriculture. AECA was founded in 1991 by growers and other members of the agricultural community concerned about electricity costs. AECA represents the collective interests of the state’s leading agricultural associations, including California Citrus Mutual, Western Growers Association, California Grape and Tree Fruit League, Milk Producers Council, California Dairies, Inc., California Poultry Federation, Almond Hullers and Processors Association, California Grain and Feed Association, Agricultural Council, Western Agricultural Processors Association, and California Cotton Ginners and Growers Association. AECA also works on behalf of the combined interests of several county farm bureaus and more than forty agricultural water districts. AECA’s membership is broad based, reflecting family farmers from Redding in the north to San Diego in the south, who grow crops ranging from alfalfa to walnuts. Through its members and membership associations, AECA represents in excess of 40,000 California agricultural producers. Many of our members are vertically integrated and as a result, AECA also represents the interests of numerous food and fiber processing operations located throughout California.

² AG Council is a member-supported organization advocating for more than 15,000 farmers across California, ranging from farmer-owned businesses to the world’s best-known brands. AG Council works tirelessly to keep its members productive and competitive, so that agriculture can remain California’s number-one industry, and members can continue to produce the highest quality food for the entire world.

Achieving the requirements in SB 1383 to facilitate reduction in Short-lived Climate Pollutants can best be achieved by focusing on the expansion and facilitation of additional biomethane projects at dairy farms, wastewater treatment plants, landfills and organics recycling facilities. Capturing fugitive methane emissions from these facilities and putting them to beneficial use provides the most efficient and cost-effective path to achieving the reductions in Short-lived Climate Pollutants (“SLCP”) sought by the state. The capture, conversion and use of fugitive methane emissions for energy creates an immediate opportunity to reduce SLCP emissions and provides a beneficial use while maximizing environmental co-benefits.

On the other hand, the creation and implementation of a mandatory Renewable Natural Gas (“RNG”) standard, especially one incentivizing power to gas (“P2G”) projects, is not necessary to meet RPS goals or reduce GHG emissions and would unreasonably increase natural gas costs for all California consumers.

As discussed further below, AECA and AG Council provide the following recommendations in how the CEC should implement its statutory requirements under SB 1383:

- California should focus on fugitive methane emissions in the environment from dairy, wastewater, landfill, and organics diversion projects.
- The CEC should prioritize the coordination and alignment of existing agency programs in its IEPR recommendations.
- California should address the high cost of pipeline interconnection and upgrading to pipeline standards in California.
- The IEPR should encourage ARB to establish and fund a LCFS financial mechanism as directed by SB 1383.
- California should extend funding programs and funding availability such as the Dairy Digester Research and Development Program over multiple years to provide financial stability for this sector.
- The CEC should consider additional targeted truck conversion incentives to increase RNG truck fleet opportunities and stimulate increased demand. Any funding for truck conversions should be tied to use of in-state biomethane from SLCP sources.
- Tipping fees should be increased to incentivize higher volumes of RNG from municipal solid waste.
- The IEPR should encourage the CPUC to implement the dairy biomethane pilot projects in a manner that maximizes digester development, penetration, and participation of large and small dairies. This can best be achieved by focusing on cost-effective clusters that maximize program value.

DISCUSSION

I. There Already Are a Variety of Programs and Regulations in Place to Incentivize SLCP Emission Reductions.

California has produced electricity and transportation fuels from biogas and biomethane for nearly 20 years. Significant additional opportunities for growth in the dairy, wastewater, landfill, and organics diversion sectors exist and can be most effectively stimulated by maximizing the value of existing programs and incentives. Over the past few years the state has adopted a significant number of programs, policies, and incentives to expand biogas and biomethane project development in California. These programs include but are not limited to the following:

- BioMAT FIT (SB 1122)
- Dairy Digester Research and Development Program (CDFA)
- Biomethane Interconnection Incentive Program (CPUC)
- Gas Quality Standard for Biomethane Injection (AB 1900)
- Pipeline Biomethane Safety Standard Review (SB 840)
- Low Carbon Fuel Standard (ARB)
- Organics Diversion Grant Program (Cal Recycle)
- Dairy Biomethane Pilot Projects (R.17-06-015, CPUC)
- LCFS Financial Mechanism (SB 1383, ARB)
- Expansion of NEM to include bioenergy projects

Many of these programs are still in their infancy and some, including the biomethane pilot projects, biomethane standard review, and the dairy LCFS market mechanism, have not yet been fully developed and implemented. These existing programs and policies should be given sufficient time to continue to work. As a case in point, CDFA recently received 36 grant applications for new dairy digester projects. These projects will more than triple the existing number of operating dairy digesters in the state when implemented. For perspective, we have the opportunity to triple the efforts of the past 15 years in just a couple of years.

These projects are based on existing state policies and incentives, including the BioMAT FIT, LCFS, biomethane interconnection incentive program and the dairy digester grant program. The only limiting factor is funding available under the program. The 36 project applications under the CDFA dairy digester grant program are seeking over \$75 million in funding from a program with only \$27-36 million available. As a result, the program is oversubscribed by a factor of 2-3 times. Clearly, existing programs are sufficient to attract interest and substantial new development. Additional programs are not necessary at this time.

II. There Already Are a Variety of Programs and Regulations in Place to Reduce GHG Emissions and A RNG Standard Is Not Needed to Meet the State’s GHG Goals.

California has already put in place a host of regulatory programs to reduce emissions in the electricity, transportation and gas sectors. These existing programs include:

- SB32 requires a 40% emission reduction from 1990 levels, which the ARB has generally concluded can be achieved through the advancement and expansion of existing policy measures.
- The ARB adopted the Low Carbon Fuel Standard (“LCFS”) to reduce the carbon intensity of transportation fuels, providing credits for renewable biogas use as an incentive to develop the RNG market.
- SB 1383 requires a 40 percent reduction in methane emissions from 2013 levels.
- The RPS program identifies biomethane as an eligible renewable resource for electricity generation, and can qualify as “bucket one” procurement, incenting in-state generated biomethane production.
- SB 350 mandates increased energy efficiency to, in part, reduce natural gas consumption in California.

These existing programs provide mandates and incentives to increase the use of RNG in California without the need for an additional, mandatory RNG standard. Therefore, implementing a mandatory RNG standard would be duplicative, add additional complexity to existing legal and regulatory requirements and unnecessarily increase costs for California’s natural gas consumers. AECA and AG Council’s members face significant leakage risks due to domestic and international competition for agricultural production and processing. We are very concerned that further natural gas rate increases will expose our members to additional leakage risks, driving employment out of California and raising emissions in uncapped jurisdictions. In other words, a RNG standard would be counterproductive to the State’s efforts to reduce GHG emissions.

III. The Proposed Options for Satisfying a Mandatory RNG Standard Are Not Commercially Ready or Cost-effective.

SB 1383 tasks the CEC with identifying and prioritizing “cost effective” technologies. In determining which strategies to recommend in the IEPR, the CEC should evaluate both the marginal costs of existing strategies as well as the relative cost effectiveness of new technologies that have not been deployed at commercial scale. As pointed out by Dr. Myers-Jaffe in her June 27th workshop presentation, California has significant RNG potential, but the marginal cost of that supply increases substantially from each of the primary sources as less efficient projects are pursued. Fossil natural gas prices will likely remain low over the next decade or more. However, if the State were to move forward with a RNG Standard as proposed by SoCal Gas and

others, such a dramatic policy could have significant cost implications for leakage risk exposed entities. These costs could easily drive cost increases to natural gas customers of 25-50 percent or more depending on the level mandated. Proposals for a RNG standard should be rejected at this time.

Many of the proposed RNG options that were discussed at the June 27th workshop have not been deployed at a commercial scale. We have also yet to see any demonstration that many of the technologies can be developed and operated in a cost-effective manner. Further, there is no evidence that these proposed options can produce sufficient quantities of RNG to satisfy a RNG mandate. Other than existing RNG sources, such as from digester technologies, the development and production of RNG in California from other sources have not progressed beyond research and/or small-scale pilot projects and cost-effectiveness has not been established.³

Moreover, there is no evidence that commercial scale development and implementation of a commercial RNG market of the size required to satisfy a mandatory RNG standard is feasible or would be cost-effective. For example, as discussed in a recent NREL study, the cost of hydrogen generated from P2G projects to be injected into natural gas pipelines, not including methanation, is projected to be 10 times the current retail price of natural gas.⁴ Setting aside the costs of this technology, methanating a carbon free source of electricity (e.g., solar power) is inconsistent with the GHG reduction goals of SB 1383 and SB 32.

There is no evidence that RNG production would or could be sufficient to satisfy a mandatory RNG standard. The anticipated costs for RNG, in particular P2G, far exceed current natural gas prices and would significantly increase costs for California natural gas consumers directly and electricity consumers indirectly as a result of increased gas-fired electric generation costs. For these reasons, the CEC should not identify a RNG standard (and in particular P2G) as a strategy to be pursued pursuant to the SB 1383 goals.

IV. RNG Has Associated Energy and Environmental Issues that Must Be Evaluated Before a Mandatory RNG Standard Can Be Adopted.

In addition to the cost considerations of a RNG standard, there are significant environmental issues associated with a RNG standard. For example, the combustion of RNG for electric generation, transportation, heat or other end-use customer purposes generates GHG

³ In addition, SoCalGas recognized, in comments submitted on the 2017 IEPR report, that, at p.3, as “P2G technology develops, we are working with researchers and experts to determine *how to safely integrate the technology with existing infrastructure.*” (emphasis added). Further, SoCal Gas acknowledged, at p.4, that “P2G *must ultimately succeed on its competitiveness and cost.*” (emphasis added).
Link: http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-07/TN217755_20170526T141048_Jennifer_Morris_Comments_SoCalGas_Comments_on_Joint_Agency_Work.pdf.

⁴ National Renewable Energy Laboratory (NREL) study, “California Power-to-Gas and Power-to-Hydrogen Near-Term Business Case Evaluation,” dated December 2016, p.43.
Link: <http://www.nrel.gov/docs/fy17osti/67384.pdf>

emissions. P2G would convert a carbon free or low-emissions electricity source into a methanated gas source. This is a strategy that will set the state back in meeting its ambitious GHG targets. Commercial scale P2G would also require sources of and significant quantities of water, which is an ongoing concern in California. Assuming the electrolysis process would be conducted at or near solar generation facilities (many of which are located in water scarce regions), it is not clear where the water will come from to run these processes and how that water use may affect other water users in the area. For example, requiring that 10% of California's forecast 2020 annual natural gas requirement be replaced with P2G would require, as feedstock for the electrolyzation process, approximately 4 Billion gallons of distilled water annually.⁵ Such a massive use of water is clearly inconsistent with state goals to conserve water and legal requirements to put water to the highest and best uses. These and other energy, regulatory and environmental issues associated with the development, production, storage, transportation and use of RNG must be thoroughly evaluated and resolved before considering the adoption of a mandatory RNG standard.

Conclusion

The CEC should focus its recommendations on prioritizing further implementation of recently adopted policies and integration of these new policies with existing programs. Adoption of additional programs and mandates will divert industry attention from project development and will be counterproductive insofar as a RNG standard would expose the state to considerable leakage risks. California has the tools to attract substantial increases in private investment in biogas and biomethane sources. We need to allow the markets to work and fine-tune and better integrate programs where necessary. AECA and AG Council look forward to the opportunity to provide additional input, fill knowledge gaps, and further suggest potential solutions to identified problems

Respectfully submitted,

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⁵ Approximately 2.38 gallons of distilled water are consumed as feedstock to produce 1 kg of hydrogen gas, assuming no losses. (<http://iopscience.iop.org/article/10.1088/1748-9326/2/3/034007/pdf>, "The Water Intensity of the Transitional Hydrogen Economy" (2007), p.3). 1 MMcf of natural gas is equivalent to 8,537.6 kg hydrogen. (<https://h2tools.org/hyarc/calculator-tools/energy-equivalency-fuels>). California's 2020 forecast natural gas requirement is 5,360 MMcf/day. (http://docketpublic.energy.ca.gov/PublicDocuments/16-BSTD-06/TN212364_20160720T111050_2016_California_Gas_Report.pdf, p.16). Replacing 10% of California's 2020 forecast annual natural gas requirement (5,360 MMcf/day x 365 days x 10% = 195,640 MMcf/year) with P2G would require (195,640 MMcf/year x 8,537.6 kg hydrogen/MMcf x 2.38 gallons of distilled water/kg hydrogen) approximately 4 Billion gallons of distilled water per year.