

DOCKETED

Docket Number:	17-IEPR-10
Project Title:	Renewable Gas
TN #:	221740
Document Title:	Agricultural Energy Consumers Association Comments on Draft IEPR
Description:	N/A
Filer:	System
Organization:	Agricultural Energy Consumers Association
Submitter Role:	Public
Submission Date:	11/13/2017 1:40:26 PM
Docketed Date:	11/13/2017

Comment Received From: Michael Boccadoro

Submitted On: 11/13/2017

Docket Number: 17-IEPR-10

Agricultural Energy Consumers Association Comments on Draft IEPR

Additional submitted attachment is included below.



November 13, 2017

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

RE: 17-IEPR-10 Agricultural Energy Consumers Association Comments on Draft IEPR

Dear Chair Weisenmiller and Energy Commission Staff:

Agricultural Energy Consumers Association appreciates the opportunity to comment on the Draft Integrated Energy Policy Report (IEPR). AECA represents the interests of the State's leading agricultural associations and their producer members on energy issues. AECA has been at the forefront of state efforts to enact workable climate policies that encourage bioenergy development in the agricultural, food processing and dairy sectors. AECA's interests in energy issues involves both fostering opportunities for renewable gas development but also ensuring agricultural ratepayers' interests are protected. AECA's comments in this proceeding will be focused on Chapter 9: Renewable Gas.

AECA broadly supports the draft IEPR findings and recommendations regarding renewable gas. The findings and recommendations are fully consistent with the requirements of Senate Bill 1383 and provide a straightforward, cost effective and common-sense path forward on renewable gas development in California. In particular, AECA strongly supports the IEPR's approach of identifying and prioritizing cost-effective end uses in relation to existing state

policies and climate goals.¹ As documented in the IEPR, dairy biomethane projects yield the lowest cost per Short-lived Climate Pollution (SLCP) reductions benefit in terms of greenhouse gas (GhG) reduced.²

Existing Policies and Programs

AECA fully supports the IEPR's overall conclusion that existing policies and programs can, and are, adequately supporting RNG development where it is cost-effective and makes sense to do so. As the IEPR correctly concludes, the rapid expansion of RNG is being driven by the state's existing Low Carbon Fuel Standard (LCFS) and BioMAT Feed-in-Tariff programs. New programs are not necessary, and the state's focus should be on improving and advancing the existing programs to make them more efficient and effective. The dairy sector is evidence of the effectiveness of the state's existing programs. Six new dairy digester projects have been built in 2017 with support from the CEC and California Department of Food and Agriculture. Eighteen additional projects were recently awarded grants by CDFA through their highly cost-effective Dairy Digester Research and Development Program. While previous dairy digester projects have focused on electricity production, all eighteen of the new projects support or produce transportation fuel and will be further incentivized by the state's LCFS program. CDFA will be awarding additional funding in 2018 that is expected to support up to an additional 40 new projects that are already in various stages of design and permitting. Similar funding and project development is expected in 2019. All total, the state could have 100-120 dairy digester projects operating in California in the next 4-5 years, far surpassing the methane reduction efforts of every other state in the country. This rapid and successful expansion will be done entirely with existing programs and the ongoing commitment of the Brown Administration.

In-State Renewable Gas Potential

AECA fully supports the IEPR's efforts to quantify how much renewable gas can be developed in California and appropriate distinction between what is technically available versus what is economically feasible at this time. This analysis is critical to developing cost-effective projects that help the state achieve its GHG and SLCP climate policies. Based on this analysis

¹ See Draft IEPR at Page 254

² See Draft IEPR at Page 265

the IEPR correctly concludes that the state's short-term RNG strategies should focus on the capture of fugitive methane from the dairy, agricultural, wastewater, landfill, and municipal solid waste organics diversion sectors. Thermochemical technologies such as gasification and pyrolysis technologies³, forest biomass⁴ and power-to-gas (P2G)⁵ technologies are still in the early stages of pilot and demonstration testing and are not yet proven economically feasible. The report also correctly identifies P2G as the least cost-effective option.⁶ As the report documents, focusing on in-state sources of fugitive methane provides tremendous return-on-investment (ROI) and bang for the buck.⁷ AECA supports the conclusion in Table 19, as supported by the independent University of California Davis Institute of Transportation Studies (UCD/ITS) report that approximately 82 (Bcf) or 79.4 million (MMBtu) of economically feasible renewable gas potential currently exists in California⁸. This conclusion is further supported by the economic analysis and cost curves contained in Figures 77, 78 and 79, which show that costs of renewable gas production escalate rapidly at or around that level, quickly exceeding \$30 an MMBtu or roughly 10 times the cost of conventional natural gas. NREL studies have confirmed these costs projections.⁹ At 82 Bcf economic renewable natural gas represents a tiny fraction (less than 3%) of the state's total conventional natural gas used. Moreover, development of P2G will put new stresses on the state's water supplies. 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.¹⁰ Such a

³ See Draft IEPR at Page 260

⁴ See Draft IEPR at Page 259

⁵ See Draft IEPR at Page 259

⁶ See Draft IEPR at Page 265

⁷ See Draft IEPR at Page 265

⁸ See Draft IEPR at Page 263

⁹ 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>

¹⁰ 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.

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.

Renewable Gas Standard

The IEPR also does an excellent job of characterizing highly flawed proposals to develop a renewable gas standard or RGS. An RGS is not needed in California, will lead to significant and unwarranted ratepayer cost impacts and is not cost-effective compared to other RNG pathways. As the IEPR points out, even a 5 percent RGS would be cost prohibitive based on a CARB analysis that shows such a requirement could cost as much as \$1,500/MT-CO₂e¹¹ reduced. This high cost is attributed to the high cost of power-to-gas (P2G) systems, which would clearly be necessary to achieve even a 5 percent RGS in California. As the IEPR points out, **“Power-to-gas was by far the least cost-effective strategy out of the ones considered”** [emphasis added].

Mandating procurement and use of RNG is a fundamentally flawed concept as it is not cost competitive and will lead to significant ratepayer impacts, economic dislocation and job losses in California. As the CEC analysis points out RNG costs \$12 - \$100 per MMBtu¹², which is between 4 and more than 30 times the cost of conventional natural gas. Even at modest levels, an RGS will have significant ratepayer impacts and would put dairy, food and fiber processors, and other trade-exposed commercial and industrial customers, who rely on natural gas to produce needed heat for processing, at an untenable and disastrous competitive disadvantage in national and global markets. There is zero appetite and opportunity for an RGS in the commercial, industrial and food processing sectors due to the expensive nature of such a requirement and the fact that much more cost-effective options for SLCP reductions are available. Simply put, an RGS will destroy in-state manufacturing and food processing, costing the state hundreds of thousands of jobs and leading to significant “leakage” of emissions to other regions of the nation and world as operations shift to other jurisdictions. The Commission will be far better served by incentivizing research into solar-thermal and other promising technologies that have the ability to be cost-competitive with future natural gas prices, which are expected to remain low.

¹¹ See Draft IEPR at Page 276

¹² See Draft IEPR at Page 254

Conclusion

AECA supports the Draft IEPR's conclusions in the Renewable Gas Chapter. We agree with the need to prioritize further implementation of recently adopted policies and integration of these new policies with existing programs. In particular, development and implementation of the pilot LCFS financial mechanism required under SB 1383 is the most important action the state can take to incentivize additional project development. Similarly, AECA also supports IEPR recommendations to expand programs encouraging and accelerating important vehicle fleet conversions to run on renewable natural gas. Adoption of additional programs and mandates will divert industry attention from project development and will be counterproductive insofar as a RGS would expose the state to considerable costs and 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.

Respectfully submitted,

/s/

Michael Boccadaro
925 L Street, Suite 800
Sacramento, CA 95814
Telephone: (916) 441-4383
Facsimile: (916) 441-4132
E-Mail: mboccadaro@westcoastadvisors.com
For Agricultural Energy Consumers Association