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Additional submitted attachment is included below.

**BEFORE THE STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION MISSION**

In the matter of:
Preparation of the
2017 Integrated Energy Policy Report

Docket No. 17-IEPR-10
(Filed June 26, 2017)

**COMMENTS BY THE
COALITION FOR RENEWABLE NATURAL GAS IN RESPONSE TO THE PANEL
QUESTIONS FOR THE 2017 INTEGRATED ENERGY POLICY REPORT JOINT
AGENCY WORKSHOP ON RENEWABLE GAS**

Dated: July 14, 2017

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17-IEPR-10

**STATE OF CALIFORNIA ENERGY RESOURCES CONSERVATION AND
DEVELOPMENT COMMISSION**

In the matter of:

Preparation of the

2017 Integrated Energy Policy Report

COMMENTS BY THE COALITION FOR RENEWABLE NATURAL GAS IN RESPONSE TO THE PANEL QUESTIONS FOR THE 2017 INTEGRATED ENERGY POLICY REPORT JOINT AGENCY WORKSHOP ON RENEWABLE GAS

The Coalition for Renewable Natural Gas (RNG Coalition) represents and provides public policy advocacy and education for the Renewable Natural Gas (RNG or Biomethane) industry in North America.

On behalf of the RNG industry we appreciate the opportunity to respond to the panel questions asked throughout the June 27th Joint Agency Workshop on Renewable Gas hosted by the Energy Commission (CEC), Public Utilities Commission (PUC) and Air Resources Board (ARB) to inform the 2017 Integrated Energy Policy Report (2017 IEPR) to the State Legislature. We look forward to continue working with the CEC, PUC and ARB towards an adopted 2017 IEPR by February 2018 and successful implementation of the biomethane related requirements pursuant to SB 1383 (Lara, 2016).

Please find our brief comments below in *italics* responding to the specific questions **in bold** that were presented to seven different panels during the Joint Agency Workshop on June 27, 2017:

PANEL 1: Overview of California Policies, Programs & Regulations Related to SB 1383 Responsibilities

1. How do you track the progress of biomethane/biogas/renewable gas development and use? How do you evaluate the need to continue, coordinate or re-configure government programs in the context of programs/activities conducted by other government agencies and private investment in projects?

The RNG Coalition represents developers of 90% of the renewable natural gas produced in North America, and the predominate share of cellulosic biofuel (closer to 98%) participating under the federal Renewable Fuel Standard. Understanding the importance of being able to accurately account for available volumes to be delivered to various markets driven by policies the RNG Coalition advocates for, our developer members regularly provide us with their respective development data, including project location, status, current and projected production volumes, as Confidential Business Information (CBI). The RNG Coalition coordinates and communicates on behalf of industry with the appropriate Federal and or State regulatory agencies as necessary.

RNG developers will develop projects where 1) the market is most certain; and 2) the costs of complying with federal, state or provincial regulations are least prohibitive; and 3) where the value of the environmental credits associated with the generation and end use of their product gas are greatest. If environmental policies or programs designed to increase the development, deployment and utilization of a renewables, including but not limited to RNG, actually deter or otherwise result in no new renewable

projects being developed within the appropriate jurisdiction, then the government program/activities – and likely the regulatory implementation of said program/activities – need to be revisited. If government programs/activities are attracting project investment and development, then the programs/activities should likely continue at least until their initial objectives are achieved.

2. What types of data are needed to monitor and maximize the development and use of biomethane/biogas/renewable gas and optimize government activities to achieve 40 percent reduction of short-lived climate pollutants (SLCP) by 2030?

In order to maximize the development of biogas/biomethane/renewable gas and achieve 40 percent reduction of SLCPs by 2030, California's regulatory agencies need to strongly consider industry evidence and address the conundrum that is, with world-leading environmental policies and programs in place in-State, the majority of existing RNG projects are operating out-of-State, and the majority of new projects under development are continuing to be constructed out-of-State.

PANEL 2: Potential to Develop Biomethane, Biogas and Renewable Gas to Produce Electricity and Transportation Fuels in California

1. How much growth of energy development and use from renewable gas, biogas and biomethane do you expect for each submarket (e.g., dairy and livestock, food waste and organic diversion, waste water

treatment, landfill gas and agricultural/forestry and urban woody biomass residue)?

With increased LCFS related market certainty through 2030, sufficient investment including from but not limited to future Cap and Trade related Greenhouse Gas Reduction Funds, and with reassessment and resolution of currently prohibitive regulations for pipeline injection of the largest stationary sources of RNG (minimum heating value requirements and siloxane standards) we expect industry to produce between 500 million and 2 billion diesel gallon equivalents (DGE) of renewable natural gas by from 200 dairies, 100 wastewater treatment facilities and 50 landfills that are most likely to be developed by 2030. These projections do not include additional renewable gas that may be derived through gasification of forestry and urban woody biomass residue.

2. What key factors (i.e., incentives, technology advances, and business maturity) are required to be in place to achieve 2030 SLCP targets in California?

The 2030 SLCP targets cannot be met without increased development, deployment and utilization of renewable natural gas. The technology to capture methane – a super pollutant 25x more potent than carbon – and convert it to renewable natural gas for a variety of productive and environmentally beneficial end uses already exists. The passage and implementation of SB 32, AB 197 and SB 1383 (Statutes of 2016) are key factors that will attract investment in the development of new RNG

projects in California, at least for end use as an ultra-low carbon transportation fuel for the medium- and heavy-duty vehicle sectors.

3. What are the prospects to use biomethane, biogas and renewable gas for the growth of electricity generation compared to transportation fuel?

The RNG Coalition supports the increased development, deployment and utilization of RNG from eligible renewable waste streams regardless of the end-use application. That being said, we do believe the greatest environmental benefits are realized through end-use of RNG as an ultra-low carbon transportation fuel. When the RNG Coalition was founded in 2011, nearly 100% of all RNG in North America was produced and delivered to end-users for the generation of renewable electricity, in compliance with RPS programs in 36 different states. Today, just six years later, only 24% of all RNG is used to generate renewable electricity. Nearly 76% of all RNG is delivered to the transportation fuel markets associated with the federal Renewable Fuel Standard (RFS) and or California's Low Carbon Fuel Standard (LCFS) programs. Much of this transition has been fueled by the fact that, due to the high cost of developing an RNG project, it is increasingly difficult for RNG to compete with the proliferation of low-cost electricity generated from wind and solar – and the value of the RFS and LCFS environmental credits, generated when RNG is utilized for transportation fuel, have never been higher. On average, RNG projects developed at landfills and wastewater treatment

facilities across America require \$16 million of capital investment. The average is slightly less for RNG projects developed at dairies (between \$10 million - \$14 million per project). The investment is dramatically higher for the two RNG projects developed in California over the past six years. The RNG project developed at the Point Loma Waste Water Treatment Plant cost nearly \$45 million to build. It is delivering RNG for renewable electricity purposes and is generating the highest valued Portfolio Content Category (PCC or Bucket) One Renewable Energy Credits (RECs under California's RPS program. Even so, it would not have been developed without the support of \$30 million in grant funding from the California Energy Commission.

The second RNG project - being developed by CR&R in Perris, California - cost \$50 million to develop (\$40 million privately funded, \$10 million grant funding from Energy Commission). CR&R intends to deliver the RNG it produces to the transportation fuel market where it will fuel up to 1,000 trucks and generate federal RFS and California LCFS program credits to amortize the investment capital expended.

The cost to interconnect an RNG project in California alone can be prohibitive. As CR&R testified during the June 27 Workshop, their cost to interconnect with Southern California Gas Company's common carrier pipeline is approximately \$7 million – nearly half the amount of the average investment required to construct an RNG project. Fortunately, CR&R will be the first project developer benefit from the Monetary

Incentive Program created by the PUC two years ago, pursuant to AB 1900 (Statutes 2012). They expect to receive a rebate for up to 50% of their interconnection costs (up to \$3 million). No other developer has applied for these funds, as it makes more sense to develop RNG projects elsewhere across the country where the regulations, the cost of regulatory compliance and interconnections are less burdensome on the developer.

So long as developers are able to realize dramatically higher value from participation in the transportation fuel markets and generate greater revenue by monetizing environmental credits under the RFS and LCFS programs than under California's RPS program, the prospect for development of in-State RNG projects for electricity generation remain very low.

4. Which factors are more subject to volatility or uncertainty and what actions are needed to mitigate vulnerabilities?

Because legislation and regulation are an ever-shifting landscape, the investment community is hesitant to invest capital in nascent industry projects, including but not limited to RNG production facilities, that depend on the value added from environmental credits in order to remain economically viable, for fear that the underwriting environmental policy will change with the next election cycle, introduced bill or proposed regulation.

5. How do you see a market growth sequence or progress of steps evolving for each submarket and what government actions are needed at each step?

Timely implementation of SB 1383 (Lara, 2016) – specifically the language requiring no less than five dairy biomethane pilot projects to interconnect with the common carrier pipelines – is critical. In addition to addressing the fact that nearly 50% of methane emissions in California come from dairies and livestock, an effective pilot project could set an exemplary precedent that leads to utilities rate-basing the interconnection costs for RNG projects across the State regardless of the feedstock. This would enable the RNG industry to capture and convert methane that would otherwise be flared or escape fugitively into the atmosphere, at unprecedented levels. As soon as the problematic pipeline access minimum heating value requirement is resolved, we will see developers take advantage of the PUC’s Monetary Incentive Program and pursue development of RNG production facilities from dairy clusters in-State. Similarly, once the prohibitive siloxane standard is addressed, developers will take advantage of the same Monetary Incentive Program and pursue development of RNG production facilities at waste water treatment facilities. Pursuant to SB 840 (Statutes of 2016), the PUC needs to expedite the execution of a contract with the California Council on Science and Technology (CCST) to conduct a study that reassesses the minimum heating value requirements and siloxane standards for pipeline injection of biomethane. SB 840 was signed into law in September 2016. Ten months later and the PUC is still not able to advise when it expects to enter into a contract with the CCST.

6. How soon would you expect substantial market growth for each submarket?

We expect that RNG projects will begin attracting capital investment immediately upon the resolution of the aforementioned minimum heating value requirement and siloxane standard pipeline access issues. We would expect the same RNG projects to begin producing available RNG volumes 18-24 months following initial project investment.

PANEL 3: Utility Strategies to Reduce Short-Lived Climate Pollutants

1. How does your utility plan to address the need to reduce short-lived climate pollutants?

Not applicable as we are not a utility. We expect that our utility members will file comments separately responding to this question.

2. What actions have you taken or plan to take to reassure that the natural gas system and pipelines are reliable, safe and minimize leakage?

Not applicable as we are not a utility. We expect that our utility members will file comments separately responding to this question.

3. How will the emergence and success in the development and use of biomethane, biogas and renewable gas affect the future direction and operation of your utility?

Not applicable as we are not a utility. We expect that our utility members will file comments separately responding to this question.

- 4. What steps could you take to enhance biomethane pipeline injection through lower costs, expedited construction times or other actions?**

Not applicable as we are not a utility. We expect that our utility members will file comments separately responding to this question.

- 5. What efforts do you plan so disadvantaged communities can take advantage of the development of biogas, biomethane and renewable gas?**

Not applicable as we are not a utility. We expect that our utility members will file comments separately responding to this question.

PANEL 4: Progress, Success, Lessons Learned from Existing Projects

- 1. How would you characterize the success of your project and key ingredients for success?**

Our developer members have owned, operated and produce more than 90% of all the RNG in North America. The success of a project is based on a formula that requires revenues to exceed expenses, predictably.

- 2. What is the potential to replicate your progress throughout the state?**

Our members projects are operating and or are under development in 27 different states and two different provinces (Canada). The first project, developed in 1982, continues to operate successfully at the Fresh Kills Landfill in New York. Ironically, California- with our leading environmental policies - imports most of the RNG it consumes because there are only two RNG projects in the State, of which only one is currently

interconnected to a natural gas common carrier pipeline. Nonetheless, with resolution of the regulatory hurdles pertaining to cost and pipeline access, we believe 350 RNG projects could be developed in California by 2030. This would multiply the total number of projects in operation today by 6x.

3. What challenges might interrupt continuing successful operation or impede expansion or the development of additional projects for any of the following areas:

1. Technology development

The RNG industry is innovative and resilient. The RNG Coalition and industry welcome increased innovation and advancement in technology development.

2. Project location

Due to the enormously high cost of interconnecting an RNG project with a common carrier pipeline in California (compared to other states) the further a feedstock source is located from the nearest common carrier pipeline, the less likely it will be considered by developers as an RNG project candidate.

3. Pipeline injection

CR&R expects to interconnect their RNG project in Perris, California with the Southern California Gas Company's common carrier pipeline by the end of August 2017. This would be the first RNG project in-state to interconnect with a pipeline since the PUC

adopted prohibitive pipeline injection standards for biomethane in 2014. If the PUC fails to execute a contract with CCST, or if upon execution of a contract and completion of the CCST study the PUC fails to properly reassess the current minimum heating value requirement and siloxane standard, the total number of RNG projects projected for development in California may be drastically reduced from 350 by 2030 to however many dairy cluster projects can be supported by the PUC's Monetary Incentive Program. With a \$37 million maximum balance after CR&R's rebate, the Monetary Incentive Program may support up to seven (7) dairy cluster RNG projects (up to \$5 million per cluster).

4. Business model

If the natural gas pipeline utility companies seek and obtain PUC approval to ratebase investments in RNG projects, including but not limited to project development and or fueling, this could disrupt the business model and ability of our developers and fuel providers to further develop RNG projects and dispense RNG as an ultra-low carbon fuel in California, and across the country.

5. Project financing

Project financing has yet to truly materialize for RNG projects in California. With increased market certainty provided by the extension of the LCFS (SB 32/AB 197), and pending passage of

legislation to increase the State's RPS program, we expect this to change for the better.

6. Institutional/regulatory

Please see answers already provided above.

7. Demand and vehicle availability

The federal Renewable Fuel Standard and California's Low Carbon Fuel Standard are the principal policies that are driving supply of and demand for RNG. Provided that these policies continue with certainty and stability, they will continue to drive demand that will influence production. Additionally, the Short-Lived Climate Pollution Reduction Strategy promulgated by SB 1383 (Lara, 2016) mandates increased capture of methane, including from but not limited to the dairy sector where the majority of the state's methane emissions originate. This policy should attract additional vehicle demand and availability as the best end use of methane (the primary gas constituent in RNG) is as a drop-in replacement transportation fuel for compressed or liquefied natural gas trucks, that can be used to replace dirtier diesel trucks. Already, approximately 61% of all compressed natural gas (CNG) deployed in vehicles in California is actually renewable natural gas (R-CNG). With the Los Angeles Metropolitan Transportation Authority's May 26 decision to procure biomethane to fuel their 2,200 bus fleet, nearly 91% of all CNG in California will be RNG in the near future.

In order to help create vehicle demand, RNG Coalition members and industry stakeholders are developing Low-NOx engines for natural gas trucks, and technology to economically convert engines fueled by diesel to natural gas engines capable of being fueled by RNG.

8. Related infrastructure

Please see answers already provided above.

- 4. How much and what type of government action (regulation, incentives, other actions) is needed to achieve the SB 1383 SLCP goals?**

Please see answers already provided above.

PANEL 5: Emerging Technologies and Market Opportunities

- 1. How would you characterize the promise of your fuel/technology and what steps are required to achieve commercial availability?**

Not applicable. The RNG Coalition offers no comment.

- 2. What challenges might interrupt development and commercialization of your fuel/technology for any of the following areas:**

1. Technology development

Please see answers already provided above (Panel 4).

2. Project location

Please see answers already provided above (Panel 4).

3. Pipeline injection

Please see answers already provided above (Panel 4).

4. Business model

Please see answers already provided above (Panel 4).

5. Project financing

Please see answers already provided above (Panel 4).

6. Institutional/regulatory

Please see answers already provide above (Panel 4).

7. Demand and vehicle availability

Please see answers already provided above (Panel 4).

8. Related infrastructure

Please see answers already provided above (Panel 4).

3. What type of government action is required to support development and use of emerging fuels and technologies?

The RNG Coalition supports government action to support development and use of emerging fuels and technologies. However, we strongly believe that the government should maintain technology neutrality so as not to overlook, underfund or otherwise disadvantage low-carbon fuels and existing technologies that are immediately available and deployable, but in need of government support to achieve full market potential.

4. Can cost data be provided to the Energy Commission to support the cost-effectiveness and economic viability of your fuel/technology?

Yes.

PANEL 6: Market Maturity, Business Models and Factors That Attract Private Project Financing

- 1. What is your view of the potential for growth and appetite for private investment in any of these submarket sectors for either power generation or transportation fuels in California?**

Please see related answers already provided above.

- 2. What key ingredients are needed to stimulate and maintain private investment in these types of projects? What can government do to support, complement and accelerate achieving these key ingredients?**

Please see related answers already provided above.

- 3. Is total capital investment needed to achieve the SB 1383 goals in the realm of possibility from private capital sources with government supporting actions?**

Please see related answers already provided above.

PANEL 7: Demand, Vehicle Fleets and Other Factors

- 1. What is needed to increase the number of vehicle product offerings and vehicle volume sales to achieve SB 1383 goals?**

There is a strong bias in the State Legislature and Agencies to electrify the transportation sector. This is evidenced by the unfair calculus used whereby total emissions are measured and compared between electric vehicles and natural gas vehicles, and further evidenced by the inaccurate and misleading labels assigned to each technology. Electric vehicles are inaccurately and inequitably referred to as 'zero-emission vehicles' (ZEV) while natural gas vehicles are referred to as 'near-zero emission vehicles.'

The ZEV label fails to take into consideration analysis of electric vehicle emissions on a life cycle basis, and the 'near-zero' designation fails to take into consideration that the natural gas vehicle may be outfitted with a low-NOx engine fueled by RNG. The RNG Coalition supports a pathway under the RFS and LCFS where renewable electricity produced from RNG and used to charge electric vehicles can generate RINS or Carbon Credits. The RNG Coalition also supports additional investment for research and development of future technologies, but not at the expense of technology that is immediately available and deployable today, or at the expense of the air quality and public health of disadvantaged communities across California.

2. What do fleet owners/managers need to see to make commitments and purchase/lease vehicles that can use biogas, biomethane and renewable gas as a fuel?

Ultimately, fleet owners and managers need to be able to justify the increased cost associated with converting their diesel fleets to natural gas engines fueled by RNG. To this end, the State should invest as much, if not more, in incentives and rebates that reduce costs encourage and owners and managers to replace or convert their diesel fleets to natural gas engines fueled by RNG, as the State has invested in developing other technologies that are not and will not be available to the medium- and heavy-duty truck sectors for decades to come.

- 3. Is there sufficient customer demand in California for electricity and transportation fuel produced from renewable gas, biogas and biomethane?**

Please see related answers already provided above.

- 4. What roles do federal agencies and local governments play in evaluating and supporting the development and use of biogas, biomethane and renewable gas as a source of electricity or transportation fuel?**

Please see related answers already provided above.

- 5. What actions do you recommend the State of California take to achieve the SB 1383 SLCP goals and account for the views of utilities, investors, electricity generators, fuel developers, host site owners, vehicle manufacturers, vehicle fleet owners, environmental justice and public interest organizations, and local governments?**

Please see related answers already provided above.

CONCLUSION

The RNG Coalition looks forward to continue working with Commissioners, Board Members and Staff at the CEC, PUC and ARB throughout subsequent workshops leading up to a 2017 IEPR to the Legislature and through implementation of SB 1383 requirements to identify cost-effective strategies for increased development, deployment and utilization of renewable natural gas in California.

This concludes the comments provided by the Coalition for Renewable Natural Gas.

Respectfully signed and submitted on July 14, 2017.

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