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Re: Dairy and Livestock Greenhouse Gas Reduction Working Group May 23, 2017 Meeting

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the first meeting of the Dairy and Livestock Greenhouse Gas Reduction Working Group (Working Group) on May 23rd, 2017, as called for in Senate Bill (SB) 1383 (Lara), Chapter 395, Statutes of 2016.[1] PG&E thanks the California Air Resources Board (CARB) for organizing and hosting the Working Group in partnership with the California Department of Food and Agriculture (CDFA), California Public Utilities Commission (CPUC), and California Energy Commission (CEC).

I. INTRODUCTION

PG&E strongly supports California's clean energy goals, including the methane emission targets enshrined into law with the passage of SB 1383. PG&E has made significant contributions to the state's progress in reducing GHG emissions, including procuring renewable generation, investing in electric and natural gas energy efficiency, and reducing methane emissions through improvements to PG&E's gas pipeline infrastructure. PG&E is committed to working with California's state agencies and other stakeholders in the Working Group to create recommendations to reduce greenhouse gas emissions from the dairy and livestock industry, including exploration of the potential for this industry to help decarbonize the natural gas system. Working to ensure the success of the dairy biomethane interconnection pilot projects (SB 1383 Dairy Pilots) required by SB 1383 will be a critical component in this endeavor.

PG&E supports the long-term decarbonization of the natural gas system by facilitating the development and deployment of low- and no-carbon fuels, utilizing existing natural gas infrastructure, accessing new markets, and maintaining safe, reliable, clean and affordable service to our customers. In particular, PG&E is interested in opportunities to replace diesel-fueled heavy-duty trucks with near-zero-emission vehicles because of the immediate short-term air quality benefits this would provide in addition to long-term GHG reductions. PG&E acknowledges that many dairies are in or near

[1] Cal. H&S Code § 39730.7(d)(2) ("No later than January 1, 2018, the commission, in consultation with the state board and the department, shall direct gas corporations to implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system. For the purposes of these pilot projects, gas corporations may recover in rates the reasonable cost of pipeline infrastructure developed pursuant to the pilot projects.").

disadvantaged communities and looks forward to partnering with them in the Working Group to find ways to reduce local criteria pollutants.

PG&E supports the inclusion of a broad range of renewable fuels in the state's clean energy mix. Ultimately, we will need multiple new and viable supply sources beyond dairies to help meet the state's decarbonization goals. Other organic methane sources such as landfill and waste-water treatment facilities need development as well as new emerging technologies like methane derived from biomass and hydrogen and methane manufactured using electricity during periods of over generation. For PG&E, the SB 1383 Dairy Pilots are an opportunity to not only build five pilots, but to develop the biomethane market as well as innovative technologies and delivery methods. PG&E sees this pilot program as an opportunity for shared learning to understand how these projects will be developed and grow in size to help support the State's climate goals. Therefore, PG&E believes that it is important that the knowledge gained and lessons learned from the Working Group and the SB 1383 Dairy Pilots, including project selection, economics, and operation, be shared by all.

In the following section, PG&E provides input relevant for Subgroup #2 of the Working Group which focuses on fostering markets for digester projects. Specifically, PG&E offers feedback on the various aspects of the SB 1383 Dairy Pilots that the Subgroup should consider.

II. DAIRY PILOT PROJECTS

The following are examples of approaches that we believe should be considered in designing, selecting, and evaluating projects.

- **Sustainable Dairy Waste-to-Biomethane Business Model:** Deployment of dairy waste to pipeline injection projects has been limited by the lack of a sustainable business model: projects historically do not generate enough revenue through the sale of the commodity to attract the upfront investment needed to build the project and supply ongoing operating expense. Thus, exploration of sustainable business models (including the supply, demand, and investor perspectives) that generate revenue should be considered by the Subgroup.

  To this point, the value of the biomethane increases exponentially if it can be used as transportation fuel, which generates credits from the state Low Carbon Fuel Standard (LCFS) program and through the Federal Renewable Fuel Standard (RFS). The SB 1383 Dairy Pilots should focus on maximizing gas production while also maximizing cost efficiency (e.g., looking at the SB 1383 Dairy Pilots on a dollar per MMBtu basis or a dollar per metric ton carbon removed or both).

- **Interconnection Cost Efficiency:** These pilots will require upfront capital expenditures and ongoing maintenance expenditures[2] to safely inject the resulting biomethane into the common carrier

[2] These may include associated costs for infrastructure to gather, produce, and clean biogas to meet the pipeline quality gas specifications.

pipeline that complies with a utility's gas quality tariffs.[3] PG&E is open to exploring new interconnection models that go beyond the traditional point-of-receipt station by looking at either owning and building more infrastructure, or providing enhanced incentives for projects. In addition, PG&E is investigating other types of interconnection such as collecting biomethane with compressed natural gas (CNG) vehicles and delivering the gas for injection into the pipeline system at appropriate locations. PG&E will be thinking through what makes sense operationally, what will support the projects and what other stakeholders think.

- **Managing the Commodity:** While PG&E envisions a model where the developer manages the output, including the environmental credits, we are also open to other approaches where the utility assists in some way. For example, PG&E has twenty-four CNG fueling stations with public access which could be one potential outlet for the biomethane from the SB 1383 Dairy Pilots that is injected into the pipeline system. Additionally, to the extent that there are excess revenues beyond what is necessary for the project, stakeholders should examine having at least a portion of that revenue returned to utility customers to repay them for the investments they will be making.

- **Foster Innovation for Technology:** PG&E recommends that the SB 1383 Dairy Pilots include criteria that are designed to allow for innovative technologies and approaches when considering equipment, facilities, and infrastructure developed to gather, produce, condition, or transport biomethane. For example, as described above, one approach PG&E is reviewing is to transport biomethane to a utility's pipeline system by trucks rather than by pipeline lateral. Allowing for a broad range of approaches to be considered allows innovative strategies, if cost effective, to be implemented and understood. Subgroup #2 can help evaluate some of these alternative approaches and their viability in making its recommendations.

- **Minimizing Cost Risk:** It is critical that biomethane projects, including the SB 1383 Dairy Pilots, are economically sustainable and continue to generate cleaner fuels and reduce emissions well into the future. It must be recognized that there will be failures and we need to make sure we learn from these failures such that they do not unfairly burden customers or the communities that surround them. Sharing the learnings that will benefit the biomethane industry as a whole will help to minimize these risks going forward.

- **Supporting Markets:** A critical aspect of minimizing risk and fostering sustainable business models is having reliable and growing markets for the outputs produced by the SB 1383 Dairy Pilots. PG&E supports Subgroup #2's goal of identifying ways to increase the biomethane industry's access to CNG and Liquefied Natural Gas (LNG) vehicle markets, fleets, networks, and retailers. As noted above, PG&E's CNG fueling stations are one example of the kind of networks that could be tapped to help support the development of a customer base for the use of dairy biomethane.

- **Demonstrate Funding Availability:** Stakeholders should recognize that these pilots will also have significant risks associated with development, construction, start-up, and on-going operations. The SB 1383 Dairy Pilots should give preference to projects demonstrating significant pre-existing

[3] Gas injected into the common carrier pipeline must be compliant with utility quality tariffs and operating guidelines. Utility and stakeholder engagement in the gas quality study described in the provisions of SB 840 will revisit the issues of heating value and siloxane requirements.

public or private investment. The Working Group can help projects by identifying funding sources and gaps where additional funding may be needed.

- **Promote Environmental Benefits:** SB 1383 sets targets for methane reductions and envisions the SB 1383 Dairy Pilots as part of a larger program to reduce methane emissions. Thus, it is important to include an evaluation of the environmental benefits of each project, which aligns with one of the key question areas already identified by Subgroup #2. PG&E recommends that projects that increase throughput of biomethane be given priority. Additionally, PG&E recommends identifying projects within disadvantaged communities to help reduce existing air quality issues.

- **Project Evaluation:** In addition to identifying the factors that should be considered in evaluating the potential for projects to be selected for the SB 1383 Dairy Pilots, the Subgroup can provide recommendations on how the performance of projects should be evaluated after they are in service.

- **Additional Factors:** Subgroup #2 should not be limited to considering only the factors outlined above with respect to the SB 1383 Dairy Pilots. Other factors may be considered such as recommendations around geographical diversity and considering project readiness in the near-term. In the long term, the state will also need to consider ways to improve the demand for biomethane. PG&E suggests Subgroup #2 discuss policy recommendations to grow demand such as incentives for fleet switching from diesel to natural gas engines and research into new engine sizes to serve different market segments.

III. CONCLUSION

PG&E stands ready to work with dairy industry and other stakeholders in the Working Group and appreciates the opportunity to provide comments. We look forward to continuing to participate in the development of a successful biomethane industry.

Sincerely,

/s/

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