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Additional submitted attachment is included below.

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California Energy Commission
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Re: Docket 17-IEPR-10: Pacific Gas and Electric Company Comments on the June 27, 2017
Integrated Energy Policy Report Joint-Agency Workshop on Renewable Gas

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the June 27, 2017 Integrated Energy Policy Report (IEPR) Joint-Agency Workshop on Renewable Gas hosted by the California Energy Commission (CEC), California Air Resources Board (ARB), California Public Utilities Commission (CPUC), California Department of Food and Agriculture (CDFA), and Governor's Office.

California's natural gas system plays – and will continue to play -- an important role in achieving the state's near-term greenhouse gas targets. It also has a critical role to play in achieving California's longer-term climate goals, as we take steps to decarbonize the gas stream through renewable and low-carbon gas alternatives.

PG&E's key points in response to the day's discussion, as well as the staff white paper shared before the workshop, are:

- Safety is the most important consideration as the gas system evolves;
- The Low Carbon Fuel Standard is essential to advancing the viability of biomethane and an affordable, low-carbon future; and
- Additional effective policies should be developed to move the market forward.

PG&E appreciated the opportunity to participate in this workshop and looks forward to working with staff on this important effort until the adoption of 2017 IEPR.

I. Safety is the Most Important Consideration as the Gas System Evolves

As PG&E stated at the workshop, safety is our utmost priority in our efforts to deliver clean, reliable energy to customers while working toward the State's climate goals. Our existing gas infrastructure is a key reason why natural gas and renewable gas are short- and long-term solutions to carbon and greenhouse gas (GHG) reductions and PG&E has worked extensively to ensure that the system is strong and leaks are reduced.

A. Safety Efforts to Date

As indicated at the workshop, PG&E has taken a number of actions to enhance the natural gas system's safety and to reduce methane leakage.

More than 800 miles of PG&E's pipeline system have been pressure tested to validate system integrity. PG&E has installed more than 260 automatic shut-off valves across the system. In 2014, PG&E completed the replacement of all known cast-iron pipes in the system resulting in a stronger, safer, more seismically-resilient gas system.

Furthermore, PG&E was the first utility in the country to deploy highly-sensitive Picarro car-mounted leak detection technology to detect smaller leaks and repair them faster than ever, further reducing methane emissions. Our commitment to timely leak repair has helped us reduce our Grade 2 and 2+ leak backlog by 99% from 2010 to 2015, which in turn helps to minimize fugitive methane emissions from our system.

PG&E has partnered with Lawrence-Berkeley National Laboratories (LBNL) to pilot equipment that will continuously monitor emissions at the McDonald Island Storage Facility which is located within an environmental justice community.

Finally, PG&E has worked with the United States Environmental Protection Agency and other progressive gas utilities, including Southern California Gas (SCG), to develop the Methane Challenge program that focuses on establishing meaningful best practices for methane reduction that other pipeline operators can adopt.

These actions are only some of the measures that have been implemented by PG&E in recent years to increase the safety of the gas system. Efforts to prioritize and improve gas system safety have the added benefit of reducing leaks and advancing climate efforts as well. The interconnected nature of these benefits underscore that a safe, reliable gas system is not only essential to PG&E and our customers, but to California and the future of our climate success.

B. Gas Quality Impacts System Safety

The quality of what goes into the gas pipeline system is also critical to maintaining the safety of the system.

Having consistent gas quality standards is foundational to developing a robust low carbon or renewable natural gas industry in the state. Traditionally, feedstock and other sources that can produce renewable natural gas must first be processed and conditioned to meet gas quality specifications since their composition differs from conventional natural gas. As a result, it is vital to ensure that the composition of gas from these sources is interchangeable with PG&E's natural gas and that the constituents of concern are below established limits.

PG&E continues to be actively engaged in regulatory proceedings at the CPUC on gas quality issues. PG&E is also sharing data with the California Council on Science and Technology (CCST) as it studies and makes recommendations to the CPUC about possible updates to existing gas quality standards. These on-going efforts should guide any possible revisions to gas quality standards. In the end, any changes should not compromise safety and reliability and should minimize any cost impact to commercial and residential customers.

II. PG&E is Committed to the Reduction of Short-Lived Climate Pollutants and Achieving the State's Climate Goals

PG&E supported adoption of Senate Bill (SB) 1383 (Lara, Chapter 395, Statutes of 2016) to reduce short-lived climate pollutant (SLCP) for the state. In addition to PG&E's use of advanced leak reduction technologies, PG&E is also participating in numerous GHG reduction regulatory proceedings before many state agencies, including the ARB's low-carbon fuel standard (LCFS), the CPUC's Leak Abatement OIR, and the ARB's Oil & Gas Rule.

However, as noted at the workshop, pipelines are the source of less than 10 percent of the state's overall methane emissions.¹ Above and beyond efforts to reduce emissions from natural gas facilities and infrastructure, development of a robust renewable natural gas (RNG) market can help decarbonize the transportation sector. PG&E encourages the State to support and advance policies that align with multi-sector, state-wide reductions of SLCPs.

III. The Dairy Pilots Will Help Build Knowledge For Long-Term Decarbonization

PG&E is committed to working with the CPUC, CEC, ARB, CDFA, the dairy development community, and other stakeholders to make the SB 1383-mandated dairy pilot projects a success. From the utility perspective, the pilots have broad value in expanding knowledge about the developmental, technical, operational, and economic challenges of the projects and are an opportunity for the entire industry to learn what can and cannot be successful for long-term decarbonization. PG&E commends the agencies for working collaboratively and engaging stakeholders to develop a strong framework. As noted at the workshop, the success of these pilots is dependent upon flexibility in project implementation, the development of a sustainable financing mechanism, and long-term market stability.

¹ Short-Lived Climate Pollutant Reduction Strategy.

https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf

PG&E is technology neutral and remains flexible on the ownership and type of gas conditioning equipment. While initial pilot projects will be dairy projects, likely employing digester technology, the State should consider emerging non-digester technologies that could facilitate the development of landfill and wastewater gas projects as well. Overly-restrictive limits on eligible technologies and fuel sources may limit progress toward meaningful reductions of SLCPs in California.

Furthermore, the State should consider other innovative gas transportation methods. Pipeline alternatives, such as trucking biomethane to insertion points, may eliminate or reduce the need to construct high-cost lateral pipelines. Trucking biomethane from the supply source could allow more remote biomethane producers to have economically-viable interconnections to the gas system.

Alternate proposals made by the developers for owning and operating biogas collection pipelines should also be considered. In some cases, a developer may prefer to own the gathering lines; these pilot projects should provide such flexibility.

IV. Effective Policies Should be Developed to Move the Market

Thoughtful, transformative policies are essential to developing a sustainable market for renewable natural gas.

A. The Low Carbon Fuel Standard is Essential to Renewable Natural Gas Viability

PG&E strongly supports the LCFS as it delivers emissions abatement in the transportation sector needed to meet California's broader climate-change targets. The LCFS also provides a strong incentive for the development of RNG projects; fuel that can play an important role in decarbonizing the transportation sector.

Medium- and heavy-duty vehicles will need to be fueled by low-carbon fuels to meet the ARB's proposed 2030 LCFS target. The deployment of natural gas vehicles fueled by low-carbon or renewable natural gas is currently the only commercially viable and technologically feasible approach to substantially reduce GHG emissions from medium- and heavy-duty vehicles. According to industry groups, compressed natural gas (CNG) vehicle emissions are 15-20 percent lower overall than heavy-duty diesel vehicles on a well-to-wheel basis.^{2 3} For natural gas vehicles that run on biomethane, the GHG emissions reductions approach 90 percent, sometimes becoming carbon neutral or negative depending on the source of the biomethane.⁴

While RNG can play a key role in meeting ambitious post-2020 LCFS goals, the LCFS plays a key role in incentivizing the development of the RNG market. Given the high-cost nature

² Game Changer Technical White Paper, Gladstein, Neandross & Associates. http://www.gladstein.org/gna_whitepapers/game-changer-next-generation-heavy-duty-natural-gas-engines-fueled-by-renewable-natural-gas/

³ California Natural Gas Vehicle Coalition. <http://cngvc.org/why-nvgs/air-climate/>

⁴ California Natural Gas Vehicle Coalition. <http://www.ngvamerica.org/natural-gas/environmental-benefits/>

of RNG projects, and specifically livestock manure management projects, a full array of incentives are needed to ensure that these projects become and remain viable over the long-term. PG&E recommends that LCFS crediting for livestock manure management projects recognize the full emission reduction benefits delivered over the project lifetime, including any avoided methane emissions. Diminishing LCFS credit generation through the exclusion of avoided methane emissions would limit the revenue opportunity and reduce the upfront feasibility of these project types. The removal of avoided methane crediting would also exclude real and additional emission reductions that would otherwise contribute to achieving the 2030 LCFS target.

PG&E supports the ARB's ongoing efforts to streamline LCFS eligibility for RNG projects. We will continue to strongly support this important program and appreciate Executive Officer Corey's reiteration at the workshop of his view on LCFS's important place in the State's climate efforts.

B. A Renewable Gas Standard May Be Needed to Fully Develop the Market

PG&E is supportive of a renewable natural gas or low-carbon gas standard. Any potential standard should ensure customer affordability through measures such as price caps and cost allocation on a nonbypassable basis. Such a Renewable Gas Standard (RGS) may be necessary to provide the needed market signals and long-term certainty to bring RNG online at levels that can achieve the State's climate goals at prices that are affordable for customers. Successfully designing and implementing a procurement mandate such as an RGS requires careful consideration and thoughtful implementation. The inter-relationship between an RGS and the LCFS will have a significant impact on the economics of RNG and overall use of the natural gas pipeline.

V. Responses to Staff White Paper

The CEC's report *Senate Bill 1383, Renewable Gas Requirements: Challenges, Considerations, and Questions for Stakeholders to Address* (white paper or, report)⁵ contains a number of the questions, some of which are addressed above or in PG&E's oral remarks at the workshop. Additional responses to specific questions from the white paper are below, and may be applicable to more than one question presented in the report, given the overlapping prompts and subject matter

- Which factors are more subject to volatility or uncertainty, and what actions are needed to mitigate vulnerabilities?
 - Volatility and uncertainty in the market can be minimized by controlling two factors: price and pace of implementation. It is necessary to ensure steady revenue

⁵ *Senate Bill 1383, Renewable Gas Requirements: Challenges, Considerations, and Questions for Stakeholders to Address*. California Energy Commission. Publication Number: CEC-600-2017-008.

return from programs such as LCFS and ARB's proposed funding mechanisms to help developers with upfront costs. Further incentives for fleets or vehicles in the transportation sector to convert from conventional fuels to low-carbon fuels will also help develop the market and drive reductions in the transportation sector, the large emitting sector GHG emissions in California. It is important for all stakeholders and agencies to coordinate how these projects are funded to balance the cost burden to customers, provide necessary incentives to offset the high upfront costs for these projects, and incent the transportation sector to continue to invest in cleaner fuel technologies. In addition to incentives for customers, the industry must continue to promote the use of cleaner fuels and energy to promote market adoption and community support.

The pace of project implementation also plays critical role in mitigating volatility or uncertainty. PG&E appreciates efforts to define a clear path toward the development of pilot projects that can help the industry learn more about technologies and what does or does not work before considering broader implementation. PG&E continues to be supportive of identifying and clearing hurdles that stand in the way of pilot project implementation. Without time to carefully consider lessons learned from forthcoming dairy pilot projects, a full-scale implementation places a risk on developers for projects that may not be successful, as well as customers who could bear the financial burden of such developments. Using the framework with SB 1383 will allow both Operators and Developers to gather necessary information on cost, construction, and implementation to help map out how RNG projects become implemented statewide.

- What can be done to assist project developers in their efforts?
 - To facilitate the project development process, PG&E has already taken several steps to reduce its process time and reduce development costs. Response times have been streamlined by establishing a dedicated email address and initial intake team with assigned single points of contact. Station configurations have been standardized to reduce design and build-out time. PG&E also continues to explore innovative transportation methods to offer affordable alternatives to new pipeline construction, including the trucking of biomethane. The State requiring developers to provide proof of biogas feedstock contracts to demonstrate the ability to maintain future injection volumes will further speed the process of determining project readiness.

- What efforts are planned for disadvantaged communities to take advantage of the developments of biogas, biomethane, and renewable gas?
 - As discussed above, PG&E has partnered with LBNL to pilot equipment at our McDonald Island Storage Facility, located within an environmental justice community, which will continuously monitor emissions. The data from this equipment will allow us to identify and accelerate repairs, minimizing our emissions and impacts on the surrounding community. PG&E will continue to work with disadvantaged communities and environmental justice communities to promote the use of cleaner technologies and improve air quality. Additionally, PG&E will continue to support R&D for new technologies that provide additional GHG and air quality benefits, and the use of these technologies within these communities with elevated air quality concerns.

VI. Conclusion

PG&E appreciates this opportunity to comment on the June, 27 2017 IEPR workshop on Renewable Gas and looks forward to continued participation in this process.

Sincerely,

/s/

Wm. Spencer Olinek