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Claire Halbrook Comments: PG&E Comments on Renewable Progress, Challenges and Opportunities Workshop

Additional submitted attachment is included below.

May 26, 2015

VIA E-MAIL: DOCKET@ENERGY.CA.GOV

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 15-IEPR-06
1516 Ninth Street
Sacramento, CA 95814-5512

Re: PG&E's Comments on the IEPR Commissioner Workshop on Renewable Progress, Challenges and Opportunities

Introduction

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) Commissioner Workshop on Renewable Progress, Challenges and Opportunities.

PG&E strongly supports California's clean energy goals, including the Governor's recent Executive Order establishing a 2030 greenhouse gas (GHG) reduction goal of 40% below 1990 levels. PG&E has made significant contributions to the State's progress in reducing GHG emissions and is well on its way to helping California meet its ambitious clean energy goals through procuring renewable generation, funding energy efficiency incentives, supporting distributed resources, investing in key infrastructure projects, and promoting the large-scale deployment of electric vehicle charging infrastructure. PG&E is well-positioned to meet its 2020 Renewables Portfolio Standard (RPS) compliance requirements with 27% of our delivered electricity coming from eligible renewable sources in 2014. Our current portfolio is more than 50% (55%) carbon free and our electricity emissions rate is nearly one-third the national average.

Moving forward, we believe the best path to achieving the State's long-range environmental goals is through an integrated and flexible energy policy that optimizes sustainable and cost-effective GHG reductions. By achieving these goals in a way that manages costs for energy customers, we can ensure that California's economic recovery continues and at the same time create a model program for others to follow.

PG&E provides the following comments in response to the "Questions for Open Stakeholder Discussion on New Issues and Challenges Associated with a 50% Renewable Target" introduced during the recent workshop.

1. What should a 50% renewable policy framework look like? How much should it rely on what is already in place versus a complete redesign of the existing policy structure? Should it replace the current Renewables Portfolio Standard requirement or work in tandem with it?

Following the Governor's Inaugural Address, during which he announced a goal to increase the percentage of the State's electricity derived from renewable resources from one-third to 50% by 2030, the CEC released a Fact Sheet¹ outlining strategies for achieving this goal. PG&E agrees with the framework and concepts detailed in that document, notably the inclusion of rooftop solar in future renewable programs and a procurement strategy that focuses on energy efficiency, demand response, and electric vehicles.

PG&E is also in full agreement with CEC Chairman Weisenmiller, California Public Utilities Commission (CPUC) President Picker, and California Independent System Operator (CAISO) President and CEO Steve Berberich, when they raised some of these challenges associated with increasing renewables, including over-generation and transmission capacity in a recent Special to the Sacramento Bee. In the article they argued that, "overall, we must make sure that our investments focus on reducing greenhouse gas emissions, improve reliability and keep costs competitive," and, "more of the same policies will not do the trick"² as we advance California's clean energy leadership.

PG&E is committed to supporting the State in achieving its 2020 and 2030 GHG emissions reduction goals and believes that we must accelerate the deployment of carbon reduction strategies to do so. Prior to increasing renewable procurement targets however, the State should investigate how a 50% renewable framework fits within its broader GHG goals. California is and can continue to be a leader in renewable energy policy, but should consider its actions carefully to encourage other jurisdictions to follow its lead. Rather than simply increasing the current RPS requirement, the State should consider alternative approaches to achieve a clean energy future. PG&E recommends that these alternatives be developed using a broader GHG-reduction framework founded on four key principles for future policies:

- **Reliability:** Clean energy policies must ensure the continued reliable operation of the grid.
- **Affordability:** Clean energy policies should be cost-effective, should not substantially increase costs to consumers, and should continue to promote the sustainable growth of California's economy.
- **Optionality:** Clean energy policies should be increasingly market-based, should encourage innovation, and should enable entities such as PG&E to dynamically adjust

¹ http://www.energy.ca.gov/commission/fact_sheets/documents/Fact_Sheet_-_50_Percent_Renewables.pdf

² March 14, 2015 <http://www.sacbee.com/opinion/op-ed/soapbox/article13939937.html>

how they comply with environmental goals as customer needs and available technologies evolve.

- **Comprehensive:** To achieve California's long-term GHG reduction goals, every sector of the economy must contribute. Clean energy policies must take a multi-sector approach to address GHG emissions, recognize cross-sector emission shifts, and allocate costs equitably among all market participants.

2. What are the operational challenges of a 50% renewable policy framework?

A 50% renewable policy framework will cause operational challenges that, if not addressed, can cause grid reliability issues. The primary issue is that higher renewables penetration makes it more difficult for the grid operator to balance the supply and demand of electricity. Under a higher renewables scenario, the grid operator will likely need to increase the ramping of conventional generation and manage the excess supply of renewable energy, potentially leading to expensive curtailment events.

The State's five largest utilities³ (Utilities) retained Energy + Environment Economics (E3) to conduct an independent study on the feasibility and challenges of increasing the RPS mandate. The Utilities also commissioned an independent advisory panel from government, academia, and industry to critique and provide feedback on the study's assumptions, findings and analyses. The panel issued its own report which reflected its consensus view of the study and findings. According to the study, the most significant challenge to increasing RPS beyond 33% by 2020 is over-generation, due to a surplus of renewable energy at times when California demand is lower than the available energy supply. The over-generation will become evident at 33%, and will pose a significant challenge at higher levels of RPS. Under a 50% scenario, the study anticipates excess renewable generation for up to 23% of the hours annually. Mitigating the over-generation observed in their 50% RPS Scenario would require an increase of 15,000 to 25,000 MW of integration solutions.

While these challenges are technically feasible to address, the solutions will come at increased costs to customers and will cause economic challenges for market participants. The intermittency of many renewable resources, as well as their availability relative to peak demand, requires us to manage their operations differently than other "dispatchable" resources. Additional integration solutions posed by E3 include:

- Resources must be diverse both in technology and geographic location and maximized through additional regional coordination across the West to ensure grid reliability.
- The conventional (natural gas fired) fleet will need to be operated differently.

³ Los Angeles Department of Water and Power (LADWP), Pacific Gas and Electric Company (PG&E), Sacramento Municipal Utility District (SMUD), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E)

- Energy storage may eventually provide a solution to the over-generation issue, but is not yet a mature technology. The current exception is pumped hydro, but it can take years to build and can still prove costly.
- Grid operators will need the ability to significantly curtail renewable generation in order to maintain grid reliability.
- Regional coordination

Given the numerous challenges associated with meeting California's low carbon energy needs through policies focused primarily on renewable resources, we believe a more holistic low carbon energy approach is appropriate.

3. Should a 50% renewable policy maintain the current RPS policy of technology neutrality, or should it favor technologies that provide specific benefits to the system?

PG&E strongly believes that maintaining a diverse portfolio of technologies is key to meeting California's clean energy goals in a way that is most cost effective for our customers. We should avoid favoring specific technologies. Technology and size-specific mandated procurement programs limit PG&E's ability to provide a diverse, competitively priced portfolio. In fact, we believe the policy should be broadened beyond what exists today and offer greater flexibility in providing renewable resources for our customers. A move from the existing 33% to a 50% mandate is not a small task as it represents a doubling of current levels of RPS penetration in California. Such a dramatic change will create significant operational challenges as outlined in the cited E3 report. To address these challenges, we need to expand the list of available options, rather than place further constraints on the market with technology specific mandates.

4. Should renewable procurement under a 50% renewable policy framework differ from current procurement practices? If so, how?

As stated in our response to questions 1 and 2, California should expand its policy framework if we are to embrace a 50% renewable target. We must take an integrated approach to reducing GHG emissions that looks across all sectors and opportunities to continue providing a safe and reliable grid and affordable rates. Rather than a number of separate procurement planning activities, we recommend moving towards a more streamlined process that allows for side-by-side comparison of the costs and benefits of GHG reduction strategies.

The current 33% RPS program should also be improved to include a greater focus on managing costs for customers. As a result of ever-evolving market conditions, we believe a structure that recognizes a wider range of zero-GHG technologies will help manage costs. Specifically, the State should support multi-state agreements such as the CAISO's Energy Imbalance Market (EIM) and greater flexibility in renewables banking rules to reduce customer costs. As we pursue policies to promote incremental GHG reductions, we should seize the

opportunity to provide renewable energy from existing facilities and reduce GHG emissions through shorter term transactions.

5. What are the roles of DG, energy efficiency, demand response, storage, microgrids, electric vehicles, and electrification of the building heating sector in achieving a 50% renewable target?

As described in the previously cited CEC Fact Sheet, PG&E strongly believes there is a need for more broad-based policy solutions that can optimize GHG reductions across multiple sectors. Renewable resources are just one of several ways to achieve GHG emission reductions. Energy efficiency (EE), demand response (DR), transportation electrification, and the Cap-and-Trade program can all help the State meet its GHG reduction goals. We also understand that the benefits of a RPS program extend beyond GHG emission reductions in the area of job growth with a focus on the local economy, local air quality benefits and other factors. DG, EE, DR, storage, and electrification of the transportation sector should all be considered as policymakers develop the framework for achieving a 50% renewable target. The RPS debate has long been centered on electricity delivered by the State's load serving entities. If California is to continue to lead, we must recognize that customers want choice in the sources of power they ultimately consume. Shifting our focus to *what* is consumed as opposed to what is delivered will move the State forward and allow for California to continue to lead the way on clean energy policies.

Conclusion

Climate change is a global problem that needs a global solution. California can and should provide leadership to create a GHG focused policy for the rest of the world to replicate. Thank you for considering PG&E's feedback on the Renewable Progress, Challenges and Opportunities workshop.

Sincerely,

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