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Pacific Gas and Electric Company Comments on the CED 2015 Revised Forecast

Additional submitted attachment is included below.

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**VIA E-MAIL DOCKET@ENERGY.
CA.GOV**California Energy Commission
Dockets Office, MS-4
Docket No. 15-IEPR-03
1516 Ninth Street
Sacramento, CA 95814-5512Re: Docket 15-IEPR-03: Pacific Gas and Electric Company Comments on the California Energy Demand 2016-2026 Revised Forecast**I. Introduction**

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to comment on the California Energy Demand 2016-2026 Revised Forecast (CED 2015 Revised or Revised Forecast) that was presented at the California Energy Commission (CEC) Workshop held on December 17, 2015.

PG&E and the CEC have collaborated closely in recent years to develop a consistent and increasingly robust forecasting methodology, and the CED 2015 Revised Forecast reflects stakeholder input gathered through the Demand Analysis Working Group (DAWG) during the current forecasting cycle. PG&E's comments on the Revised Forecast focus on the following key points:

- PG&E commends the CEC for adjusting the solar photovoltaic (PV) self-generation forecast, which aligns with the PG&E forecast through 2015. However, post-2015 growth rates may be overly conservative in light of recent policy developments.
- PG&E would like to work with CEC staff to improve the accuracy and comparability of zonal/local area forecasts in anticipation of future energy forecasts.

II. Improved Solar PV Growth Rates May Still Be Overly Conservative

PG&E commends the CEC for adjusting the PV self-generation forecast developed for the 2015 Integrated Energy Policy Report (2015 IEPR) which was revised in response to a dynamic market and policy landscape. The CEC's CED 2015 Revised PV forecast incorporates a number of changes in modeling assumptions and methods that PG&E believes represents a more accurate estimate of PV growth and system impacts compared to the PV self-generation forecast included in the 2013 Integrated Energy Policy Report (2013IEPR).

The 2013 IEPR forecast significantly underestimated PV growth. For example, over 1,800 megawatts (MW) of retail (self-generation/customer side of the meter) PV was installed in PG&E's service territory as of November 2015. At a capacity factor of 18 to 20 percent, this amount of retail PV would result in generation of

approximately 2,800- 3,100 gigawatt hours (GWh) per year. The 2013 IEPR forecast did not reach an equivalent level of deployment until nearly 2020.¹

In contrast, the PV component of the Revised Forecast is in line with PG&E adoption estimates through 2015. However, PG&E is concerned that PV growth rates post-2015 may still be overly conservative, especially in light of the recent extension of the Investment Tax Credit (ITC) for retail solar through the Federal Omnibus Appropriations Act, and a California Public Utilities Commission (CPUC) Proposed Decision for a Net Energy Metering (NEM) successor tariff that would continue to significantly incentivize retail solar adoption. PG&E's expected base case estimate for PV adoption, submitted to the CEC in Form 3.3 in April 2015, is nearly 25 percent higher by 2025 than the CEC's mid-case forecast. While all long term forecasts are subject to uncertainty, PG&E believes the CEC should develop a more robust self-generation forecasting approach in order to facilitate more efficient and cost-effective statewide procurement, and transmission and distribution planning.

As described in PG&E's comments on the California Energy Demand 2016-2026 Preliminary Electricity Forecast dated July 21, 2015, and as communicated to the CEC and stakeholders in the DAWG, PG&E recommends that the CEC review the modeling approach used to estimate PV adoption and update that approach using best available current information and methods. Where key information is lacking, PG&E encourages the CEC to develop research that would improve understanding of PV technology diffusion patterns. Research being undertaken through the Department of Energy's Solar Energy Evolution and Diffusion Studies may help address gaps in current understanding. The development of the Public Tool as part of the NEM successor tariff proceeding also provides insights that could be incorporated into the CEC's modeling approach.

III. PG&E Will Work with the CEC to Improve and Streamline Granular Forecasting

PG&E appreciates the continuing effort of the CEC to increase the granularity of California's energy demand forecasts. Increasing the granularity of CEC forecasts helps to highlight variations in regional energy demand growth in California and inform both infrastructure planning and policy development at regional levels, which may provide benefits for California energy consumers.

During the CEC's December 17 workshop, PG&E was asked to evaluate the zonal load growth and peak demand forecasts for PG&E's service territory. PG&E cannot immediately respond to the question of what confidence interval the range between high and low zonal scenario forecasts may represent for each of the climate zones because PG&E does not produce local area forecasts for directly comparable geographic areas. Based on PG&E's general experience with local area forecasting, variance of plus or minus five to ten percent over a ten year forecast horizon (consistent with what can be extrapolated from CEC data) represents a relatively small portion of the potential uncertainty in local area forecasts.²

PG&E would like to work with the CEC and other stakeholders in anticipation of the 2017 IEPR to develop a methodology for generating local area load growth scenarios that represents a more realistic range of

¹ California Energy Demand 2014-2024 Final Forecast: [Mid-Case Final Baseline Demand Forecast Forms](#)

² California Energy Commission. [California Energy Demand 2016-2026 Revised Electricity Forecast: Pacific Gas and Electric Planning Area](#). Docket 15-IEPR-03: No. 207040. pp 12-13

uncertainty, and to define the zonal forecast areas in a way that is more accessible and useful for investor-owned utility (IOU) local area forecasting needs.

IV. Conclusion

PG&E thanks the CEC for considering these comments and for the collaboration of Commissioners and staff in working to improve California's energy demand forecast.

Sincerely,

/s/

Nathan Bengtsson