Pacific Gas and Electric Company

Matthew Plummer
Representative
State Agency Relations

77 Beale Street, B10C
San Francisco, CA 94105

(415) 973-3477
(415) 973-7226 Fax
matthew.plummer@pge.com

June 13, 2013

VIA E-MAIL DOCKET@ENERGY.CA.GOV

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 13-IEP-1C
1516 Ninth Street
Sacramento, CA 95814-5512

Re: 2013 Integrated Energy Policy Report: Lead Commissioner Workshop on Preliminary Electricity and Natural Gas Demand Forecasts – Comments of Pacific Gas and Electric Company

Pacific Gas and Electric Company ("PG&E") appreciates the opportunity to provide comments on the California Energy Commission's ("CEC" or "Commission") Lead Commissioner Workshop on Preliminary Electricity and Natural Gas Demand Forecasts ("May 30 Workshop"). PG&E has participated actively in the 2013 Integrated Energy Policy Report ("IEPR") proceeding and previously submitted comments related to the Commission's forecasting activities, specifically: on the Lead Commissioner Workshop on Economic, Demographic, and Energy Price Inputs for Electricity, Natural Gas and Transportation Fuel Demand Forecasts;[1] and on the Staff Workshop on Natural Gas Issues and Forecast Scenarios.[2]

These comments are focused on providing initial feedback on the Commission's Electricity and Natural Gas Demand Forecasts. Specifically, PG&E discusses CEC improvements to the forecasts and forecasting process in Section I; Section II discusses the Commission's and PG&E's results for electric and gas forecasts; and finally, Section III outlines PG&E's concerns over the CEC's rate forecast. This review is based on Volumes I and II of the California Energy Demand 2014-2024 Preliminary Forecast ("2013 CED") and the accompanying Demand Forecast Spreadsheets, provided by the CEC. In addition, PG&E's review is greatly augmented by the many staff-level conversations between the Commission and PG&E subject matter experts.

[1] Please see: http://www.energy.ca.gov/2013_energypolicy/documents/2013-02-19_workshop/comments/Pacific_Gas_and_Electric_Company_Comments_on_Workshop_on_Economi_Workshop_2013-03-05_TN-69834.pdf

[2] Please see: http://www.energy.ca.gov/2013_energypolicy/documents/2013-04-24_workshop/comments/PGandE_Comments_2013-05-08_TN-70694.pdf

I. PG&E SUPPORTS THE CEC'S ENHANCEMENTS TO THE FORECAST AND FORECASTING PROCESS

A. Stakeholder Outreach: During the development of this and previous CED forecasts, the Commission has actively engaged a wide range of stakeholders. This extends beyond public agencies, like the California Independent System Operator ("CAISO") and the California Public Utilities Commission ("CPUC"), to expert working groups. Particularly, the CEC's continued support and participation in the Demand Analysis Working Group ("DAWG") has helped improve alignment and consensus around key inputs to the long-term demand forecasting models, including the treatment of expected demand reductions from investor-owned utility ("IOU") energy efficiency programs. PG&E especially appreciates the Commission's initiative in establishing staff level conversations, which greatly improved review and understanding for both sides.

B. Econometric Methodologies: PG&E is pleased to see the CEC continue to expand its use of econometric forecasting tools in its analysis. While PG&E acknowledges the value of the end-use modeling structure to evaluate, in particular, the impact of codes and standards on historic and future energy demand, PG&E encourages Staff to continue to move towards an econometric framework as the core of the forecasting process. As discussed in previous workshops and DAWG meetings, the advantages of an econometric framework are many and include: better transparency to improve stakeholder input, understanding and consensus; quicker turn-around time to make better use of Staff and stakeholder resources; inclusion of more recent economic and demographic projections; and enhanced capability to produce statistically derived uncertainty analysis to support long-term planning assumptions.

Additionally, PG&E notes that in many of the forecasts contained in the 2013 CED, the High, Low and Mid scenarios show little variation. Ideally, while individual years may be above or below the average or Mid scenario trend line, they would hover around the long-term trajectory. High and Low estimates, in this context, assist the end-user in anticipating these fluctuations, and help identify possible errors or biases in the model inputs or assumptions.

PG&E encourages and supports the use of statistical analysis to construct scenario upper and lower bounds, given a certain probability of occurrence. These could be used in addition to or in support of the existing scenarios. Staff may also consider utilizing past forecasting errors to either inform the High and Low cases or to develop error bands. As an example, the CEC's recent March 7 Workshop, on its Cost of Generation Model, used Energy Information Administration historic errors to adjust the CEC's natural gas reference case. This methodology should be examined for broader use in the 2013 CED.

C. Climate Change Impacts: PG&E also supports the CEC's continued efforts to incorporate climate change explicitly into the forecasting framework. In particular PG&E is supportive of the Commission's research efforts on the impact of extreme weather events on peak energy demand. As noted at the CEC's June 4 Joint Lead Commissioner Workshop on Climate Change and the Energy Sector, it is expected that a changing climate will be characterized by more frequent, more intense, and longer duration heat storms in California.

II. THE CEC'S SALES FORECAST IS LARGELY COMPARABLE TO PG&E'S, AFTER ACCOUNTING FOR UNCOMMITED ENERGY EFFICIENCY

A. CEC Electric Consumption Forecast: As stated at the May 30 workshop, the rate of growth for PG&E's and the Commission's electric energy demand consumption forecast are closely aligned.[3] Based on PG&E's analysis of the 2013 CED, the difference stems from the exclusion of uncommitted energy efficiency and differences in model drivers. Aside from the exclusion of uncommitted energy efficiency, as discussed below, PG&E believes that the Commission's sales forecast is reasonable. After reintroducing uncommitted energy efficiency impacts, the difference between CEC's and PG&E's average annual rate of growth is only two-tenths of one percent.

Note that comparisons of electric sales forecast for individual sectors have not been made at this point due to the need for PG&E to adjust for incremental uncommitted energy efficiency at the sector level. In general, the growth rates of the two forecasts are very close for the industrial sector, but significant differences exist in the residential and commercial sectors. These differences can be attributed to differences in the models used, choice of drivers, and assumptions for projected growth rates for these drivers. PG&E will continue to work closely with Commission Staff to fully understand the difference.

B. Incremental Uncommitted Energy Efficiency: Beginning with the 2009 IEPR, Commission Staff have worked closely with stakeholders to more accurately incorporate energy efficiency savings into the CED forecasts—a progression that continues with the 2013 CED. However, the exclusion of uncommitted energy efficiency has been a longstanding concern for PG&E. As stated in previous comments, excluding incremental uncommitted energy efficiency makes the forecast difficult to interpret and undermines the information value of the 2013 CED forecasts.

[3] Because the CEC, understandably, includes other utilities in its forecast, like Silicon Valley Power, which are within or adjacent to PG&E's electric service territory, absolute comparisons for the PG&E Planning Area are only meaningful.

In the 2013 CED, the Commission indicates that, based on the CPUC's Efficiency Goals and Targets Study, it will develop incremental uncommitted efficiency savings in the revised 2013 CED forecast. However, the 2013 CED also indicates that the CEC is uncertain whether the revised forecast will incorporate uncommitted energy efficiency impacts or whether these impacts will be provided separately.[4] PG&E encourages the Commission to not only provide an accurate estimate of uncommitted energy efficiency, but to incorporate it into this and all future CEDs.

Additionally, PG&E is pleased that the Commission is open to renaming incremental uncommitted energy efficiency. PG&E recommends the phrase "projected energy efficiency savings" as a potential replacement. The term "uncommitted" implies a lack of resolution. Given the State's impressive track record, California's commitment to continuing and expanding the role of energy efficiency in meeting consumer energy demand should be beyond doubt.

C. **Self-Generation PV:** Overall, PG&E's peak megawatt (MW) forecast for self-generation photovoltaic (PV) is similar to the CEC's forecast. The similarity of PG&E's and the CEC's peak forecasts is primarily because the CEC uses a very high peak capacity factor,[5] ranging from 45 percent to 48 percent during the forecast years. PG&E would instead suggest using 33 percent peak capacity factor for the 2013 CED. PG&E's peak is expected to continue to move later in the day.

While capacity factors used by the CEC and PG&E are comparable—PG&E uses a 19 percent capacity factor and the CEC uses an 18.4 percent capacity factor—PG&E forecasts a higher installed capacity for self-generation PV than the Commission. The difference may be due to the assumptions the CEC used in its residential adoption model. Currently, the CEC caps each PV installation at 4 kilowatts (kW), which is too low. PG&E's average residential installation is 4.88 kW. As a consequence, the CEC may underestimate residential solar installations.

D. **Self-Generation Non-PV:** The CEC forecast for self-generation non-PV is lower than PG&E's. The exact source of the disparity is unclear at this time; however the CEC may not have adequately captured the amount of fuel cells. In PG&E's forecast of Combined Heat and Power (CHP), which is based on historic adoption rates, PG&E discounts the two years when only wind and fuel cells were eligible for the Self Generation Incentive Program (SGIP), which limited CHP adoption.

[4] Please see Page 35 of the 2013 CED.
[5] Note that the "peak capacity factor" is a measure of the generation at the peak hour of the year. By contrast, the "capacity factor" is a measure of the generation over the course of a given year.

Additionally, the CEC forecast is lower because the CEC assumes 80 percent of CHP is available at the peak, whereas PG&E assumes only 60 percent. The exact source of the difference is not clear. However, the CEC sharply reduces non-PV installations at the expiration of the SGIP. This decision disregards any possibility of extension, or any continuing influence from the CHP feed-in-tariff or the growing popularity of fuel cells. Thus, despite the expiration of SGIP, PG&E believes the economics will continue to be favorable for many customers, especially, for CHP and fuel cells.

E. **Gas Consumptions:** Much of the difference between the CEC and PG&E core gas forecasts can be attributed to the effect of the climate change assumptions. The CEC's warming rate is about half as strong over the forecast horizon. In PG&E's forecast, the effect of climate change mitigates any increases in core demand due to population growth. Additionally, almost all of the increase in the CEC's forecast happens between 2012 and 2013. PG&E is interested in reviewing the CEC's gas rate forecast with Staff.

F. **Electric Peak Demand:** The CEC's coincident peak demand forecasted growth rate for the PG&E Planning Area is also similar to PG&E's forecasted growth rate for its Distribution Area. After reintroducing incremental uncommitted energy efficiency, the difference between the CEC's and PG&E's average annual rate of growth for coincident peak demand shrinks to less than one percent.

However, the CEC's forecast of the PG&E Planning Area load factors does not appear to be consistent with historical trends. The load factors imply a stabilization of historical trends at a slightly higher level than what is being projected. Additionally, PG&E notes a large increase in CEC's coincident peak demand for 2014. PG&E will work with Staff to understand these differences better.

III. RATE PROJECTION

PG&E finds that the primary source of difference between PG&E's and the CEC's forecasts is the electric and gas rate projections. As noted by all the IOU representatives at the May 30 Workshop, the 2013 CED shows sustained annual growth in energy rates at roughly twice the rate of projected general inflation over the next 10-years. Even in the Low and Mid case rate escalation scenarios, this is unreasonably high. The history of energy rate escalation over the past two decades has been flat or negative in real terms. While PG&E acknowledges that there are significant pressures on utility rates, PG&E does not believe that the projections used for the preliminary forecast are reasonable given utility management and the regulatory focus on managing rate escalation on behalf of utility customers.

Based on the 2013 CED, PG&E understands that CEC staff relied on the Energy and Environmental Economics (E3) calculator. Without additional information on the assumptions used in the E3 calculator and how the CEC incorporated the results, PG&E cannot provide further comment. However, PG&E was pleased to hear at the May 30 Workshop that the CEC

Staff plan to review the rate escalation projections. PG&E is very interested and supportive of working with Staff to review the assumptions and methodology.

IV. CONCLUSION

PG&E is committed to continuing to work with CEC Staff to understand elements of the demand forecast and is very appreciative of their willingness to share information and build understanding. The improvements captured in this forecasting cycle are positive ones, and we look forward to continued, incremental improvements in the forecasting process.

Sincerely,

/s/

Matthew Plummer

cc: N. Fugate (Nicholas.Fugate@energy.ca.gov)
C. Kavalec (Chris.Kavalec@energy.ca.gov)