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Pacific Gas and Electric Company Comments on the 2018 California Energy Demand Forecast Update

Additional submitted attachment is included below.

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California Energy Commission
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Docket No. 18-IEPR-04
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Docket 18-IEPR-04: Pacific Gas and Electric Company Comments on the 2018
        California Energy Demand Forecast Update

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the California Energy Commission's (CEC) 2018 California Energy Demand (CED) Forecast Update (Forecast Update). The CED Forecast is a critical component of the Integrated Energy Policy Report (IEPR) and an essential tool for planning future energy policies across numerous agencies. Given this importance, PG&E appreciates the continued efforts of CEC Staff to discuss and refine components of the 2018 Forecast Update with stakeholders. However, PG&E continues to have concerns about critical elements of the forecast that have not been prioritized for improvement in 2018.

PG&E recommends that the CEC prioritize the following elements to the 2018 CED:

- **Community Choice Aggregation** (CCA) forecasts must be revised to capture the dynamic and rapidly evolving conditions in the market if they are to be effective long-term planning and policy tools;
- **Rooftop solar** forecast elements should include updated PV generation data and various solar housing programs; and,
- **Growing rideshare markets** should be included as part of the light-duty electric vehicle (EV) analysis.

PG&E looks forward to continuing to work with CEC staff to refine methodologies, inputs and assumptions to improve the CED for long-term planning applications.

I.   CCA Forecast Must Capture the Dynamic Market Conditions

At both the July 10, 2018 workshop, and in its 2017 IEPR comments[1], PG&E suggested that the CEC prioritize the development and adoption of a predictive modeling approach that reflects the dynamic and rapidly growing CCA market beyond 2019. However, the CEC did not highlight

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[1] TN-222421 https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=17-IEPR-03

this as a priority in its July 10, 2018 presentation. A more robust and accurate representation of the uncertainty surrounding the CCA forecast is critical to enable effective long-term planning and to inform related policies. In the absence of forecasts that better account for continued CCA growth, planning decisions based on the CEC's forecasts may result in PG&E procuring more energy resources than necessary for its bundled customers, adversely impacting rates if non-bypassable charges (NBC) are not effective in maintaining indifference. Adoption of a method that appropriately accounts for the uncertainty and growth potential of CCAs can mitigate potential cost shift to bundled Utility customers.

PG&E appreciates the CEC's willingness to collaborate in improving the near-term elements in the development of its *California Energy Demand (CED) 2018-2030 Revised* CCA forecasts[2]. The drive to integrate more recent information from CCA implementation plans into this forecast resulted in strong alignment between PG&E's, CEC's, and the CCAs' year-ahead forecasts for 2019. However, as illustrated in Figure 1 below[3], the CEC's long-term forecast is 40% below PG&E's forecast in 2030.

Figure 1. Comparison of 2030 PG&E System CCA Load Forecast (GWh)
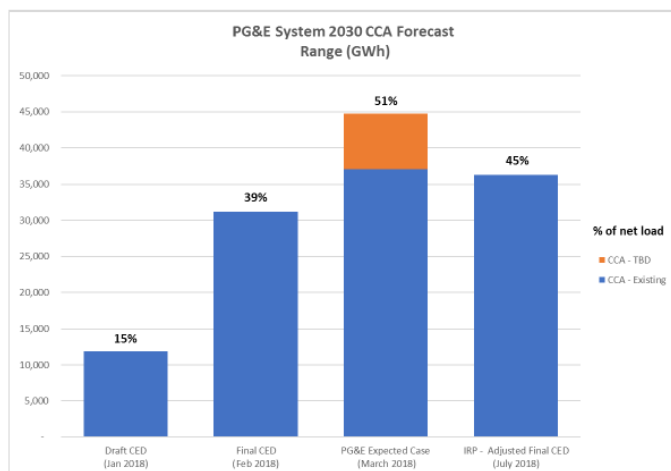
The CCA forecast disconnect results from the CEC's use of an overly conservative forecast methodology, which does not appropriately capture the dynamic CCA marketplace. First, the CEC applies an *ex post* deterministic forecast method that accounts only for currently established CCAs and neglects any potential for future expansion of such CCAs. It also erroneously assumes that new CCAs will not form. The CEC acknowledges in the CED 2018-2030 Revised Forecast that the current forecast method may underestimate growth, stating that "[CCA] growth [after 2019 is] set to the average for the overall planning area. Some CCAs may see significant expansion after 2019, so this is likely a conservative forecast." [4]

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[2] Insert footnote citation for CEC source table

[3] TN-224108 at http://www.energy.ca.gov/2018_energypolicy/documents/2018-07-10_workshop/2018-07-10_presentations.php

[4] CED 2018-2030 Revised Forecast (p. 49)

Table 1 (below) presents the recorded and near-term forecast of load by service provider. The Table shows a rapid acceleration of CCA formation from 2016-2018 and continued expansion through 2019 based on filed implementation plans. The CEC's forecasting methodology needs to exhibit a forward-looking robustness to capture the speed of the changing CCA landscape.

	EOY 2016 (Recorded)	EOY 2017 (Recorded)	March 2018 (Recorded)	EOY 2019 (PG&E Forecast)
PGE Bundled	84%	75%	71%	46%
CCA	5%	14%	17%	42%
DA + BART	11%	11%	12%	12%

Table 1. Percent of PG&E System Retail Load by Service Provider[5]

As noted earlier, the CEC's long-term forecast is 40% below PG&E's forecast in 2030. The CED 2018-2030 forecast abruptly terminates CCA growth beyond 2019, despite offering no rationale to support this impactful assumption regarding CCA growth. If the CEC continues to under-forecast CCA growth, it could result in an unfair cost shift to bundled Utility customers. In his remarks at the July 10, 2018 workshop, CEC Chair Weisenmiller acknowledged that the near-term and long-term uncertainty around CCA formation, expansion and commitment to implementation plans creates real challenges for the investor-owned utility (IOU) planning processes. Improved forecasting methods could help to better quantify the range of uncertainty and facilitate better decision-making.

Both SCE and PG&E use probabilistic modeling methods to quantify the uncertainty in the CCA market, including expansions of existing CCAs and formation of new CCAs[6,7]. PG&E's model is integral to its standard load forecasting methodology, which have been filed in numerous CPUC proceedings (e.g., Energy Resource Recovery Account forecast or ERRA) as well as in PG&E's submission to the CEC's 2017 IEPR proceeding in April 2017.

A similarly conservative approach to characterize the future was scrutinized during the 2017 CED Forecast update with respect to another element of the CEC's modeling: Electric Vehicle (EV) adoption. The CEC's preliminary forecasts relied heavily on current customer surveys to understand preferences about the market, while not weighing advancement of vehicle types, infrastructure investments, and statewide policy goals heavily enough. The CEC made significant strides in this area by consulting with other statewide agencies, IOUs and market experts to incorporate the vast growth potential in the market in their Revised 2017 CED

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[5] TN-224108 at http://www.energy.ca.gov/2018_energypolicy/documents/2018-07-10_workshop/2018-07-10_presentations.php

[6] Ibid

[7]TN-224105 at http://www.energy.ca.gov/2018_energypolicy/documents/2018-07-10_workshop/2018-07-10_presentations.php

forecast[8]. PG&E advocates for a similar approach to stakeholder engagement to fully capture the growth potential in the CCA marketplace.

Past collaborations between CEC staff and stakeholders have led to improved forecasts in targeted areas (e.g., electric vehicle and rooftop solar PV forecasting). Similar collaboration on the CCA forecast can help develop a more robust analytic approach to forecasting CCA load that accounts for the uncertainties and growth potential in the dynamic CCA market. PG&E looks forward to continuing work on this important forecast.

II. Rooftop Solar Forecast Elements Should Be Revisited

A. Solar PV Generation Profiles Should be Updated to Reflect More Current Data

PV generation profiles should be updated in the next round of forecast model updates. In the Revised 2018-2030 California Energy Demand Forecast report (pages A-2 and A-7) the CEC cites a 2013 E3 Impact Evaluation as the basis for its solar PV capacity factor[9]. This critical input assumption is likely outdated and should be revisited given the availability of new information and metered rooftop PV systems, which allow calibration of simulated results to actual performance data. Calibration of the CEC's PV generation profiles to PG&E's generation profiles—which were informed by granular meteorological data and meter data from PV systems collected under the California Solar Initiative program—suggests that the CEC's generation profiles/capacity factors may be significantly overestimating PV system production, at least for existing systems. Updating the load profiles can minimize the difference between the CEC and PG&E forecasts.

A cursory comparison of the CEC's and PG&E's calibrated load curves suggests a 15-20% difference between those curves. This is a significant difference that should be evaluated and, where appropriate, result in profile updates.

B. CSI PV Programs Should be Captured in the Forecasts

The CEC should develop a forecast module to capture adoption of PV driven by the California Solar Initiative's programs: Single-family Affordable Solar Homes (SASH), Multifamily Affordable Solar Housing (MASH) and Solar on Multifamily Affordable Housing (SOMAH). These are approved programs with budgets and can be added to forecasts in a relatively straight-forward manner.

III. Electric Vehicle Market Segmentation Should Reflect Ridesharing Expansion

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[8] See discussions from Demand Analysis Working Group Subgroup on Transportation Demand, August 23, 2017.
    http://dawg.energy.ca.gov/meetings/dawg-transportation-demand-subgroup

[9] CED 2018-2030 Revised Forecast p.A-2, Footnote 97 and p. A-7 Footnote 105 state: 97 Energy and Environmental Economics, Inc. November 2013. California Solar Initiative 2012 Impact Evaluation. Report is forthcoming but staff was provided a copy of the draft report and the simulated PV production data.

The CEC should introduce a "rideshare" (e.g., Lyft, Uber) market segment in its EV forecast model. As rideshare markets grow, these rideshare vehicles are expected to exhibit distinct consumption and charging patterns that may differ significantly from conventional use of EVs.

IV.   Conclusion

PG&E appreciates this opportunity to comment and the continued participation in this IEPR process.

Sincerely,

/s/

Wini Chen