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**Pacific Gas & Electric Comments on the July 11, 2016 Joint Agency Workshop on Energy Demand Forecast and Doubling of Energy Efficiency “Data and Analytical Needs**

*Additional submitted attachment is included below.*

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California Energy Commission  
Dockets Office, MS-4  
Docket No. 16-IEPR-05  
1516 Ninth Street  
Sacramento, CA 95814-5512

Re: Docket 16-IEPR-05: Pacific Gas and Electric Company Comments on the July 11, 2016 Joint Agency Workshop on Energy Demand Forecast and Doubling of Energy Efficiency – Data and Analytical Needs

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the July 11, 2016 Joint Agency 2016 Integrated Energy Policy Report (IEPR) Update Workshop (Workshop), hosted by the California Energy Commission (CEC), California Air Resources Board (CARB), and the California Independent System Operator (CAISO) to gather initial ideas on how to achieve the ambitious goal of doubling energy savings due through energy efficiency, as enacted by Senate Bill (SB) 350.<sup>1</sup>

As one of California's leading investor-owned utilities (IOUs), PG&E is a strong supporter of this goal and looks forward to working with many of the people in attendance at the Workshop to make these goals a reality. PG&E provides these comments on key topics discussed at the Workshop.

Key points of PG&E's comments include:

- The CPUC and CEC should use the Integrated Resource Planning (IRP) process as the preferred tool for identifying higher levels of energy efficiency and use the existing Integrated Distributed Energy Resources (IDER) cost-effectiveness framework for consistent evaluation across DERs;
- Avoided cost and the Database for Energy Efficient Resources (DEER) data must be updated annually to ensure that energy efficiency measures that make the greatest contribution to peak needs are appropriately credited for these contributions; currently

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<sup>1</sup> This bill requires the CEC to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030. The bill requires the PUC to establish efficiency targets for electrical and gas corporations consistent with this goal. The bill would require local publicly owned electric utilities to establish annual targets for energy efficiency savings and demand reduction consistent with this goal.

2011 data are used, resulting in missed opportunities to deploy cost-effective energy efficiency;

- Clear evaluation protocols are needed to support increased funding for market transformation opportunities;
- Capturing Assembly Bill (AB) 802’s meter-based savings methodology may open up additional savings opportunities;
- Fully accounting for energy efficiency savings activity occurring in the state such as publicly-owned utility (POU), Prop 39 and CARB programs is important and a better estimation of naturally occurring savings is needed; and
- Regular updates of critical studies like end use surveys and saturation surveys are important to find savings opportunities and track progress.

## **II. Specific Comments and Recommendations**

### ***A. Cost Effectiveness Criteria Must Be Consistent Across Planning Processes and Should Leverage Existing Frameworks***

IOUs are already required to meet their unmet resource needs “through all available energy efficiency and demand reduction resources that are cost-effective, reliable, and feasible.”<sup>2</sup> Some workshop speakers suggested that a different cost-effectiveness framework may be needed to “achieve a cumulative doubling of statewide energy efficiency savings... of retail customers by January 1, 2030” as required by SB 350, given the SB 350 requirement that the savings be cost-effective.<sup>3</sup>

SB 350 requires the CEC to base the 2030 energy efficiency target on a doubling of the midcase estimate of additional achievable energy efficiency savings, as contained in the specified forecast and subject to the specified growth rate, “to the extent doing so is cost effective, feasible, and will not adversely impact public health and safety.” Thus, the test of cost effectiveness applies to the new energy efficiency savings target to be met by 2030, as well as to the efficiency savings for an IOU to achieve.<sup>4</sup>

Establishing a separate and different set of cost-effectiveness criteria for the purposes of establishing and/or meeting the SB 350 doubling goal would be problematic and confusing to implement. The IDER cost-effectiveness working group was established last year to create greater alignment across DERs on cost-effectiveness evaluation, with the purpose of ensuring that the sourcing of DERs to address grid needs produces comparable results across DERs. It would be a mistake to undo the progress that has been made on this front. Two additional enhancements to that process could also support SB 350’s energy efficiency doubling goal, including:

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<sup>2</sup> Public Utilities Code (Pub.Util Code) §454.5(b)(9)(C).

<sup>3</sup> SB 350 Section 6, amending Public Resources Code (Pub. Res. Code) §25310(c)(1).

<sup>4</sup> Pub. Res.Code§25310(c)(1) and Pub. Util. Code §454.55(a).

1. Use the IRP framework to identify higher levels of energy efficiency: The IRP framework, which is also a requirement of the SB 350 legislation, is an appropriate and efficient way to identify higher levels of energy efficiency that are more cost-effective than alternatives in meeting the carbon reduction goals identified in SB 350 (i.e., 40% below 1990 levels by 2030). In this framework, greenhouse gas (GHG) goals are “solved for” by assessing the costs and benefits of various resources, with the most attractive resources being pursued to meet the GHG goals. Higher levels of energy efficiency (EE) would be identified as part of this framework, which may satisfy the SB 350 EE doubling goal, to the extent such higher levels are cost-effective compared to other alternatives to reduce GHG levels. PG&E urges the CPUC and CEC to use the IRP process as the preferred tool for identifying higher levels of energy efficiency. PG&E also recommends coordination between the energy efficiency SB 350 goalsetting process and the IRP process going forward.
2. Use a consistent methodology to estimate incremental measure costs (IMC) in existing energy efficiency programs: Conflicting practices are currently used to quantify IMCs in existing energy efficiency programs. One approach includes the full cost of a measure, regardless of whether the costs of the measure are partly due to non-energy-related attributes. Another approach is to separate out the *energy savings* component of the measure cost and use that as the IMC. Itron followed this approach in its 2014 measure cost study,<sup>5</sup> however, only some of these results were incorporated into the CPUC-maintained DEER, while other programs continue to measure energy savings as a full measure or IMC cost. While the CPUC has included this issue in IDER Cost-Effectiveness Working Group Phase 3, expeditious resolution of this issue is important as we move forward with identifying how to meet the SB 350 goals.

***B. Estimating Current Grid Impacts Requires the Use of Avoided Costs that Reflect Today’s Grid Conditions***

There was discussion at the workshop about whether energy efficiency can be relied upon to address peak demand and thus serve as a grid resource. PG&E notes that regular updating of avoided cost is necessary to provide the correct economic signal for energy efficiency development in response to evolving needs on the grid. The recent IDER decision provides for annual updating of avoided costs, which will help to ensure that energy efficiency measures that make the greatest contribution to peak needs are appropriately credited for these contributions in the cost-effectiveness analysis. Updated DEER and measure work papers are an important part of the process to ensure we employ cost-effective energy efficiency to meet peak energy reduction goals. PG&E urges the CPUC to expedite the update of avoided costs and DEER, given the last avoided cost update relies on 2011 data that do not reflect current grid conditions.

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<sup>5</sup> “2010-2012 WO017 Ex Ante Measure Cost Study Final Report,” Itron, May 27, 2014

### ***C. Market Transformation Requires New Evaluation Approaches***

Market transformation was mentioned a number of times by workshop participants. CPUC defines market transformation as “long-lasting, sustainable changes in the structure or functioning of a market achieved by reducing barriers to the adoption of energy efficiency measures to the point where continuation of the same publicly-funded intervention is no longer appropriate in that specific market. Market transformation includes promoting one set of efficient technologies, processes or building design approaches until they are adopted into codes and standards (or otherwise substantially adopted by the market), while also moving forward to bring the next generation of even more efficient technologies, processes or design solutions to the market.”<sup>6</sup> PG&E is a strong supporter of market-transformation programs and has administered a number of successful programs over the years. New evaluation approaches are necessary to make these programs successful contributors to SB 350 goals. The existing evaluation framework does not fully capture the benefits provided by the market transformation programs and PG&E urges the CPUC to adopt clear evaluation protocols to support the pursuit of market transformation opportunities at increasing levels of commitment and funding.<sup>7</sup>

### ***D. Capturing Meter-Based Savings in the Demand Forecast is Important***

One of the biggest near-term challenges for demand forecasting is accounting for the meter-based savings methodology adopted by AB 802.<sup>8</sup> Including meter-based savings in the demand forecast will lead to a more accurate reduction in the load forecast due to energy efficiency savings. The CPUC has outlined baseline and measurement policies associated with meter-based savings in the Proposed Decision of Administrative Law Judge (ALJ) Julie Fitch, issued July 19, 2016. Additionally, Navigant contributed to this effort with their AB 802 Technical Analysis. PG&E looks forward to participating in continued efforts to capture these savings.

### ***E. Estimating Naturally-Occurring Savings Deserves More Attention***

Substantial resources have been invested to estimate the impact of IOU programs and codes and standards on energy savings. As a result, we have a strong understanding of the contributions these efforts make. However, regulators have paid little time and attention to evaluating and measuring naturally occurring savings, which deserve more attention and resources..

Naturally occurring savings are typically estimated using a price elasticity estimate tied to changes in rates. This methodology does not account for energy efficiency savings that occur regardless of utility programs or codes and standards.<sup>9</sup> This methodology is acceptable if the trend in naturally occurring savings remains fairly constant. It is not acceptable, however, when rate changes cause the

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<sup>6</sup> D.09-09-047 at 89, and the CPUC Energy Efficiency Long Term Strategic Plan.

<sup>7</sup> For additional details, please see PG&E’s comments on Reply Comments of Pacific Gas and Electric Company (U 39-M) on Statewide and Third Party Energy Efficiency Programs, July 1, 2016

<sup>8</sup> AB 802, Stats. 2015, Ch. 590, amended Pub. Util. Code §381.2(b) to require investor-owned utilities to provide financial incentives to increase the energy efficiency of existing buildings based on consideration of the overall reduction in normalized metered energy consumption as a measure of energy savings.

<sup>9</sup> However, the effect of savings due to any rate increase necessitated by lost sales is not excluded.

forecast to deviate from actuals, leading to over- or under-procurement, or a deviation from planned investment. This as a potential problem, particularly as energy efficiency is increasingly incorporated into products that are not part of the integrated resource planning process.

One example of this is the LED bulb market. PG&E has shifted most of its lighting incentives to LED products. Certain CEC-specified LEDs that have a higher color rendering index (CRI) tend to be more costly (and are often less efficient) than other LED products in the market, even after incentives. The CPUC rules for incentivized LEDs do not account for this more efficient product. As a result, a much smaller portion of the LED market (~20%) is incentivized than was for CFLs (50% of the market or greater). This means that the substantial LED savings are falling outside of the current accounting framework of “naturally occurring savings,” potentially resulting in lower actual energy usage than predicted by the forecast.

#### ***F. A Full Accounting of California Energy Efficiency Savings Activity is Needed***

The legislative direction to count the full extent of energy efficiency activity in the State (e.g., IOU programs, POU programs, codes and standards, AB32 programs, Prop 39 efforts, CVR, etc.) affords an opportunity beyond simply identifying who contributes to reaching the goals and how. It also provides a framework to add up the full extent of energy efficiency activity in the state, which is something that does not exist today. PG&E learned of this shortcoming a year and a half ago when it examined the American Council for an Energy-Efficient Economy (ACEEE) State Scorecard rankings and found that other states were counting more energy savings than us. This was mostly inadvertent, as there was no consolidated accounting of all the energy efficiency activity occurring in the other states. Since then, PG&E has been working with the CEC, CPUC, and other IOUs to correct for this in our submissions to ACEEE. The current goalsetting process presents an opportunity for California to establish consistent accounting processes and provide comparable pictures of the energy efficiency activity in California versus what is occurring across other states.

One means to achieve more inclusive accounting would be for California to consider energy efficiency savings related to SmartMeter<sup>TM</sup> infrastructure. For instance, Home Area Network (HAN) device energy savings – savings from giving customers access to their real-time energy data directly from their meter – have not been eligible for savings claims in the energy efficiency programs administered by the IOUs due to a SmartMeter<sup>TM</sup> decision.<sup>10</sup> While regulatory issues prevent the IOUs from claiming in-home display (IHD) savings for their energy efficiency programs, the reduced electricity consumption resulting from customers’ leveraging of their real-time usage information is proven and is a promising source of new savings, particularly given the advanced analytics demonstrated in the Workshop’s afternoon session. The CPUC and CEC should consider savings from these types of programs in meeting SB 350 goals.

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<sup>10</sup> D.09-03-026.

***G. Regular Updates to Research are Needed to Improve Forecasting and Saturation of Energy Efficiency***

There is a need for studies such as end-use surveys and saturation studies that offer high value so long as they are regularly updated. End-use studies provide real information on how customers are using energy, when they are using energy, and where opportunities exist for program administrators to help customers use energy more efficiently. These studies are also critical for improving forecasting, as end-use usage levels are used for setting an upper limit on savings potential in a particular area. Saturation studies provide additional detail, showing the portion of the market using efficient versus inefficient products, enabling program administrators to identify areas for targeting or technologies that might be reaching saturation levels. For instance, an end-use study will tell you what percentage of residential usage is for lighting, while a saturation survey will tell you what portion of lighting products are incandescent versus CFL versus LED.

The CEC and the CPUC have updated saturation studies have been some regularity, while end-use studies are updated much less frequently. In addition to greater frequency of data updates, a greater level of granularity within the data (e.g., geospatial and building type) will be important as energy efficiency plays an increasingly important role in alleviating local grid impacts. PG&E is happy to see that the CEC recently approved an update of the Commercial End-Use Survey (CEUS). This has been much needed, with the last study being issued in 2005, and we look forward to working with CEC staff on designing and implementing a high-quality product. There has also been progress on this front at the CPUC with a recent Evaluation, Measurement, and Verification (EM&V) ruling outlining a process in which additional funds could be allocated to these studies, with details still to be worked out on who would take the lead on conducting them.

**III. Conclusion**

PG&E appreciates this opportunity to comment on the July 11, 2016 Joint Agency 2016 IEPR Update Workshop and looks forward to continued participation in this effort.

Sincerely,

/s/

Wm. Spencer Olinek