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Pacific Gas & Electric Comments on Doubling of Energy Efficiency

Additional submitted attachment is included below.

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Re: Docket 17-IEPR-06: Pacific Gas and Electric Company Comments on the January 23, 2017 Integrated Energy Policy Report Joint-Agency Workshop on 2030 Energy Efficiency Targets

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the January 23, 2017 Integrated Energy Policy Report (IEPR) Joint-Agency Workshop on 2030 Energy Efficiency (EE) Targets hosted by the California Energy Commission (CEC) and California Public Utilities Commission (CPUC). PG&E provides comments including the following key points in response to the *Framework for Establishing the Senate Bill 350 Energy Efficiency Savings Doubling Targets* (Staff Paper):

- Interpretation of cumulative doubling is accurate but further review of underlying data is necessary;
- PG&E supports the proposal to aggregate gas and electric savings on an MMBtu basis, but recommends the electric to MMBtu conversion be done on a source basis using the captured energy method;
- Energy efficiency target setting should be closely aligned with the CPUC's Integrated Resource Plan (IRP) Proceeding;
- Flexibility should be preserved in setting sub-targets;
- Fuel substitution definitions should be expanded to include additional fuels including diesel, gasoline, and propane; and
- Inflation expectations should be used as the basis for the growth rate.

PG&E looks forward to continuing to work with staff on this important effort until the adoption of 2030 energy efficiency targets in November 2017.

I. PG&E Agrees with CEC Staff's Interpretation of Cumulative Doubling; Seeks Opportunity to Further Review Underlying Data

CEC staff note in the Staff Paper that they have interpreted "cumulative" to mean the following:

"'Cumulative' energy efficiency savings realized in 2030 means the total of the first-year energy efficiency savings for measures installed and behavior changes in 2030, plus the savings realized in

2030 from all previous measure installations from 2015 through 2029 (reflecting persistence decay that has occurred since the measures were installed), for all end uses."[1]

CEC staff also note that this definition is consistent with how the CPUC has set program administrator goals in the past, though there were a number of challenges with how cumulative goals were set and awarded. PG&E agrees with this definition and notes that the CPUC's Decision (D.) 16-08-019 suggests that net goals on a cumulative and annual basis should be used beginning in 2018, in coordination with the CEC.[2]

However, stakeholders should be provided an opportunity to review the underlying data behind *Figure 6: Alternative Interpretations of "Cumulative"* in the Staff Paper. PG&E requests that a Demand Analysis Working Group (DAWG) meeting, or other similar staff-level workshop, be scheduled to review this underlying data, with the relevant spreadsheets provided in advance. Stakeholders should be given an opportunity to comment on this issue again, after the workshop has been held, perhaps as part of the anticipated third workshop outlined in the Staff Paper. Staff and the CEC Chair indicated a willingness for this additional engagement with stakeholders regarding the specific data informing the Staff Paper and PG&E looks forward to the opportunity to review this information in more detail.

II. Gas and Electric Savings Should be Aggregated on an MMBtu Basis; Electric Conversion Should be Done on a Source Basis Using the Captured Energy Method

PG&E agrees that Public Resources Code Section 25310(c)(2) allows for the aggregation of gas and electric savings for the purposes of setting Senate Bill (SB) 350 targets and tracking progress against those targets. PG&E supports the use of MMBtus for this aggregation, as it allows for a greater level of flexibility in meeting the SB 350 goals by allowing overachievement in one fuel (gas or electric) to compensate for potential underachievement in the other fuel (gas or electric).

However, PG&E disagrees with the CEC Staff proposal to convert to MMBtus on a site basis because it does not account for generation losses. Rather, the use of the captured energy method to do a source conversion is most representative of actual grid conditions.[3] The issue centers on how to convert electricity to MMBtus. Unlike end-use natural gas, which is combusted on site, electricity is generated using a source fuel (natural gas, renewables, etc.). Natural gas generation results in generation losses that are not accounted for if only the energy used by the end use is considered (site basis). Source energy does account for these generation losses. The captured energy method makes a further adjustment for renewables, weighting them as 100% generation efficiency, and then weights the conversion factor for the portion of the hours in each year associated with the generation source providing marginal energy at those times.

[1] *Framework for Establishing the Senate Bill 350 Energy Efficiency Savings Doubling Targets*, pg. 12
[2] D.16-08-019, Conclusions of Law #10 and #11.
[3] For a detailed background on the captured energy method, see "Accounting Methodology for Source Energy of NonCombustible Renewable Electricity Generation," US DOE, October 2016, available at: https://www.energy.gov/sites/prod/files/2016/10/f33/Source%20Energy%20Report%20-%20Final%20-%2010.21.16.pdf

Using a site basis for the SB 350 target aggregation could have a number of unintended consequences. These include:

- Overweighting the impact of natural gas efficiency savings relative to electric efficiency savings;
- Unintended incentives to pursue fuel substitutions that adversely impact the grid and/or emissions;
- Eliminating the valuation incentive that has been used for years in the state's avoided cost framework, to produce savings at the times of greatest need; and
- Producing a framework that is inconsistent with the greenhouse gas (GHG) accounting method CEC Staff have proposed, which accounts for "typical electricity and natural gas system loss factors expected over time."[4]

Data is available to forecast these conversion factors and was likely used in the construction of *Figure 2: Illustration of Statewide Greenhouse Gas Emission Reductions That Would Result From Achievement of SB 350 Energy Savings Targets*. The IRP will produce a plan with information about the incremental GHG savings of different levels of energy efficiency savings. The final document is expected from the CPUC in August 2017.

III. Efficiency Targets Should be Aligned with the IRP Proceeding

The SB 350 IRP process is an efficient process for developing plans to achieve state policy goals, including GHG reduction goals. Specifically, the IRP process should enable the CEC and the CPUC to establish the cost-effectiveness of different levels of EE savings and develop corresponding EE goals. State agencies should coordinate to produce a more holistic vision for how potential EE savings can be represented and compared with other alternatives available in the IRP process to plan for resources, including higher EE savings, to achieve SB 350 goals.

IV. Flexibility Should be Preserved on Setting Sub-Targets

CEC staff outline a number of sub-targets that align with the list of programs identified in Section 25310(d) of SB 350 (i.e., investor-owned utility (IOU) programs, publicly-owned utility (POU) programs, future codes and standards, future local and regional ordinances, property assessed clean energy (PACE) financing, and new voluntary mechanisms). CEC staff note that "the regulatory body overseeing each program will determine the methods for cost-effectiveness, feasibility and reliability assessment."[5]

PG&E supports this approach for cost-effectiveness, feasibility and reliability determination. However, PG&E recommends that flexibility be preserved in setting sub-targets to allow a netting of savings across programs. For instance, the sub-target framework would ideally provide for flexibility of overachievement in some areas and underachievement in others. A good example of a potential issue to plan for is a tradeoff between energy efficiency programs and codes and standards. Aggressive codes and standards create significant savings, but they also reduce the amount of savings available to energy efficiency programs. Should the state pursue more aggressive codes and

[4] *Framework for Establishing the Senate Bill 350 Energy Efficiency Savings Doubling Targets*, pg. 6
[5] *Ibid*, pg. 16-17

standards than anticipated when setting sub-targets, and therefore produce excess saving over the codes and standards sub target, energy efficiency programs should not be burdened with meeting outdated sub-targets.

V. PG&E recommends broadening the definition of fuel substitution to include other fuels like diesel, gasoline, and propane

The CEC Staff Paper "proposes that the Energy Commission may include fuel substitution measures, but not fuel-switching measures."[6] The paper goes on to explain that "Fuel-switching measures involve shifting from an energy source that is not utility-supplied/interconnected (such as petroleum) to a utility-supplied/interconnected energy source (including rooftop solar) " and "Fuel-substitution measures involve substituting one utility-supplied/interconnected energy source (that is, electricity and natural gas) for another."[7]

The definition of fuel substitution should be broadened to include other fuels like diesel, gasoline, and propane. Measures like electric pumps or electric heat pump space heating or water heating may be now or at some point over the SB 350 2030 horizon be more efficient, on a source MMBtu and GHG basis, than diesel/gasoline pumps or propane space heating or water heating. Limiting the definition to only natural gas or electricity would exclude measures like these, which could be cost-effective methods for achieving SB 350 goals. It is also clear that the language CEC Staff cite for this interpretation, "[p]rograms that save energy in final end uses by using cleaner fuels to reduce greenhouse gas emissions as measured on a lifecycle basis from the provision of energy services" (Section 25310d (10)), allows for some flexibility in the interpretation of what could be included.

VI. "Other Existing Programs" Should be Removed from Baseline Determinations Savings for Current, Enhanced, and Unknown Sources

Figures 3 and 4 of the Staff Paper appear to set a baseline based on Appliance Standards, Building Standards, IOU programs, POU programs, and other existing programs. It is not clear to what "other existing programs" refers, but PG&E believes this is in error. Section 25310(c)(1) identifies the additional achievable energy efficiency savings and the targets adopted by local publicly-owned electric utilities as the basis for setting targets:

> "The commission shall base the targets on a doubling of the midcase estimate of additional achievable energy efficiency savings, as contained in the California Energy Demand Updated Forecast, 2015-2025, adopted by the commission, extended to 2030 using an average annual growth rate, and the targets adopted by local publicly owned electric utilities pursuant to Section 9505 of the Public Utilities Code, extended to 2030 using an average annual growth rate, to the extent doing so is cost effective, feasible, and will not adversely impact public health and safety."[8]

PG&E therefore recommends removing "other existing programs" from baseline determination, including in Figures 3 and 4.

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[6] *Ibid*, pg. 18
[7] *Ibid*

VII. Inflation Expectations Should be the Basis for the Growth Rate

CEC staff propose using a 3% average annual growth rate to extend savings targets from 2026 through 2030.[9] This proposed growth rate is reasonable in magnitude, but it should have a stronger basis. Inflation expectations should be aligned with the Economic and Demographic outlook data featured elsewhere in the Integrated Energy Policy Report (IEPR) forecasts as a basis for this estimate.

VIII. PG&E Requests a Workshop on the Errors Identified in *California Energy Demand Updated Forecast, 2015-2025*

CEC staff note that some errors were uncovered in the 2013 additionally achievable energy efficiency (AAEE) and that corrections for these reduced expected savings by 10%.[10] The Staff Paper does not detail what these errors are located. It is important to stakeholders that the baseline established for the SB 350 EE targets is accurate. Similar to PG&E's request on the doubling interpretation, PG&E requests that a DAWG meeting or other similar staff-level workshop be scheduled to review these errors, with the relevant spreadsheets provided in advance. Stakeholders should be given an opportunity to comment on this issue again, after the workshop has been held, perhaps as part of the anticipated third workshop outlined in the Staff Paper.

IX. Conclusion

PG&E appreciates this opportunity to comment on the January 23, 2017 IEPR workshop for 2030 energy efficiency targets and looks forward to continued participation in this process.

Sincerely,

/s/

Wm. Spencer Olinek

[9] *Ibid, pg. 14*
[10] *Ibid, pg. 13*