

DOCKETED

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Pacific Gas and Electric Comments on Time Dependent Value of Energy and Life Cycle Cost Methodology

Additional submitted attachment is included below.

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**POSTED ELECTRONICALLY TO
DOCKET 16-BTSD-06**California Energy Commission
Dockets Office, MS-4
Docket No. 16-BTSD-06
1516 Ninth Street
Sacramento, CA 95814-5512Re: Docket 16-BTSD-06: Pacific Gas and Electric Company Comments on the July 15, 2016 Lead
Commissioner Workshop on 2019 Time Dependent Value of Energy and Life Cycle Cost
Methodology**I. Introduction**

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the July 15, 2016 Time Dependent Value (TDV) of Energy and Life Cycle Cost Methodology Workshop (Workshop), hosted by the California Energy Commission (CEC).

The key point of PG&E's comments is that the TDV model must fully capture the impacts of increased renewable penetration.

II. Specific Comments and Recommendations***A. The TDV Model Does Not Fully Capture the Impacts of Increased Renewable Penetration***

This TDV analysis will be used to determine the benefit of building energy efficiency measures and renewable energy installations that will be placed in service in 2020 and for many years thereafter, and it is critical that it accurately reflect the nature of the electric power system in those future years. In particular, the TDV analysis must reflect the effects that high levels of renewable penetration will have on those benefits in future years.

One significant effect of increasing renewable penetration is an increase in occurrences of oversupply during periods of low load and high renewable generation. During such periods, energy prices are very low or negative and the marginal resource is likely a non-emitting RPS-eligible renewable resource. Consequently, in these hours the energy, GHG and RPS benefits of load reduction are significantly reduced relative to other hours.

PG&E's review of the hourly TDV data indicates that The TDV model does not fully capture these effects. In fact, PG&E finds that not a single hour of system-wide oversupply is captured and yet CAISO regularly reports such incidences even at today's renewable penetration levels. For example, on July 10, 2016 system-wide oversupply was reported over several hours resulting in curtailment of over 400 MW of wind and solar resources at one point.¹

Many analyses done by CAISO, E3 and others suggest this effect will increase in future years, and this analysis should reflect that consensus. Doing so would reduce the value of energy and the avoided greenhouse gas (GHG) emissions in the hours of curtailment and make the avoided Renewables Portfolio Standard (RPS) negative during those times. Other models, including the E3 NEM Public Tool, capture some of the curtailment impacts on avoided GHG and RPS.²

Since the TDV methodology is now being used to evaluate the benefit of additional renewable resources, accurately capturing the effects of renewable penetration on avoided costs is especially important.

III. Conclusion

PG&E appreciates this opportunity to comment on the July 15, 2016 Time Dependent Value of Energy and Life Cycle Cost Methodology Workshop and looks forward to continued participation in this effort.

Sincerely,

/s/

Wm. Spencer Olinek

¹ http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportJul10_2016.pdf

² PG&E notes that the Public Tool, while more accurate than the TDV, does not fully capture the impacts of renewable penetration in the future.