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**PG&E Comments to the QC Proposals to the CEC Supply Side
Demand Response Draft Report**

Additional submitted attachment is included below.



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California Energy Commission
Energy Assessment Division, Energy System Reliability
Docket Number 21-DR-01
517 P Street
Sacramento, CA 95814

Re: Pacific Gas and Electric Company's Comments on the Qualifying Capacity of Supply-Side Demand Response Working Group Final Report (Docket Number 21-DR-01)

Pacific Gas and Electric Company (PG&E) appreciates the California Energy Commission's (CEC) efforts on leading the demand response (DR) working group and the development of the qualifying capacity (QC) of supply-side DR working group draft report (CEC Report).¹

PG&E welcomes the opportunity to provide feedback on the CEC Report and offers the following comments in response to the CEC staff's proposals.

1. CEC Recommendation: Adopt an incentive-based QC approach.

The CEC staff proposes an incentive-based approach that aims to minimize shortfalls in delivered capacity from DR providers. Under the proposed approach, the DR provider defines weather-sensitive capacity resources capability profiles, which describe the relationship between load impact and temperature.² The QC for each month is then determined by the intersection of the capability profile with the planning temperature of the "worst day of the month."³ The CEC staff finds that the status quo approach of using the load impact protocols (LIPs) is unsustainable, considering the LIP filings are expensive for DR providers to produce and for the California Public Utilities Commission (CPUC) staff to review.⁴ Under the current

¹ CEC's Draft Report on the Qualifying Capacity of Supply-Side Demand Response Working Group, <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247917&DocumentContentId=82227>

² CEC Report, p. 15.

³ CEC Report, p. 15.

⁴ CEC Report, p. 48.

approach, CEC staff views that CPUC Energy Division (ED) staff is accountable for the results from DR providers with no recourse for penalizing shortfalls.⁵

PG&E does not support adopting a new approach, such as the incentive-based approach, until it has been analyzed with data. For example, PG&E believes that historical performance of DR resources should be analyzed using the incentive-based approach to show how existing DR resources may perform. The CEC staff recommendation is a fundamental change in the paradigm of DR QC, replacing upfront rigor in the *ex-ante* capacity estimation with an after-the-fact penalty. Absent more analysis, it is unknown whether the proposed penalty is sufficient to ensure delivery.

In fact, results from the Demand Response Auction Mechanism (DRAM) lend little support to an incentive-based approach. The DRAM pilot resembles the CEC's proposed incentive-based approach, wherein DRAM resources are not required to comply with the LIP process to determine the QC and their performance shortfalls are subject to penalty. The latest DRAM evaluation assessed, among other matters, whether DRAM sellers met their contractual obligations. The evaluation concluded that results were mixed as alignment of demonstrated capacity with contracted capacity is declining year-over-year.⁶

Therefore, PG&E disagrees with the CEC's recommendation to adopt an incentive-based approach to DR QC at this time because there is no empirical justification to support such a drastic change. Also, for clarity, PG&E highly recommends that the CEC modify its report to include a hypothetical resource with numeric data to illustrate how the incentive-based approach is implemented from end to end, if adopted.

2. CEC Recommendation: Adopt the capacity shortfall penalty incentive mechanism with forced outage adder.

PG&E does not support adopting the recommendation without validating the forced outage adder with historical DR performance data.

According to the CEC Report, the capacity shortfall penalty is intended to account for DR variability and provide a margin for forced outages and other forms of underperformance, while preserving the incentive for DR providers to accurately forecast their resources.⁷ The CEC staff introduces a 5.8 percent forced outage adder, which is derived from the penalty threshold of the Resource Adequacy Availability Incentive Mechanism (RAAIM).⁸ RAAIM does not penalize the resource as long as it delivers 94.5 percent of its committed capacity.⁹ In the CEC Report, the 94.5 percent penalty threshold is converted to a 5.8% forced outage adder to be applied on

⁵ CEC Report, p. 48.

⁶ CPUC Proposed Decision Approving Demand Response Auction Mechanism Pilot for Pilot Year 2024, issued December 9, 2022, p. 13. (<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M499/K773/499773569.PDF>)

⁷ CEC Report, pp. 48-49.

⁸ CEC Report, pp. 48-49.

⁹ CEC Report, pp. 48-49.

the delivered capacity ($1/0.945 = 1.058$).¹⁰ With a 5.8 percent adder, a DR resource that meets 94.5 percent of the committed capacity will be compensated for 100% of its committed capacity.¹¹

The 5.8 percent adder was derived under a theoretical framework, for which the CEC Report has yet to validate. The adder is only optimal for resources whose performance follows certain statistical distribution, but the CEC Report offers no discussion on how well the statistical distribution tracks historical DR performance. As such, it is unclear whether the penalty mechanism with a 5.8 percent adder is effective to enforce the QC delivery. Therefore, if the capacity shortfall penalty is adopted as the enforcement mechanism, PG&E recommends determining the forced outage adder with historical DR data.

3. CEC Recommendation: Adopt the ex-ante capability profile and ex-post regression approach proposed by CEC staff.

PG&E supports weather normalization in assessing ex-post performance but is concerned about the lack of rigor in the ex-ante capability profile.

The CEC staff proposal requires DR providers to produce the ex-ante capability profile to show the minimum load impacts a DR provider expects of a resource under varying temperature conditions.¹² However, unlike the Load Impact Protocols (LIP), the CEC proposal requires little to no rigor from the ex-ante capability profile. The capability profile simply relies on the DR provider's forecast, which may or may not be consistent with the resource's historical performance. No specific estimation guidelines are given by the CEC Report. To add to this concern, little justification is required to be disclosed. Neither historical performance nor an enrollment forecast is required by the CEC Report to validate the capability profile. As such, thousands of DR megawatts (MW) at the state level could be approved without demonstrating any upfront validation. PG&E believes that this would pose too much risk to grid reliability. Despite the good intentions of the CEC Report to simplify the QC allocation process, the recommendation may very likely increase the administrative burden for the CPUC staff to verify the profiles. For the concerns above, PG&E recommends retaining the same level of rigor as prescribed by the LIP for the estimation of ex-ante capability profiles, even if a penalty structure is adopted.

Further, PG&E believes that the ex-post regression approach is not statistically sound. PG&E finds two technical problems with the approach:

- i. Data problem: The ex-post performance regression uses bid-normalized load impacts, where bids (rather than actual impacts) will constitute most of the input for the regression, since DR is not frequently dispatched. Bids are forecasts; they may or may not accurately represent the true capability of the resource. Even if

¹⁰ CEC Report, p. 47.

¹¹ CEC Report, Appendix B, p. B-5.

¹² CEC Report, p. 10.

each hourly bid is an unbiased forecast of the resource's capability for the hour, it only reflects the resource's load impact for the hour in a single-hour event. In a multi-hour event, the impacts may decay over time, which the hourly bid may not reflect. As a result, the ex-post performance regression may be predominantly informed by overstated capability.

- ii. Model misspecification: The prescribed specification of the ex-post regression contains temperature as the only explanatory variable. The model may omit some relevant explanatory variables, leading to: a) biased coefficient estimates for temperature, and b) unreliable forecasts. The simplicity of the model specification is at the expense of forecast accuracy.

Therefore, PG&E does not believe DR providers should be limited to use only the regression model the CEC Report prescribes. Instead, DR providers should be given flexibility to select the regression model specification most appropriate for the resource.

4. CEC Recommendation: Require resources to show takeback

PG&E supports this recommendation. The recommendation requires resources to show negative impacts (i.e., snapback) outside a dispatch window.¹³ PG&E finds it reasonable to incorporate the full effects of the event, so that system planning can be made more accurate.

5. CEC Recommendation: Require DR providers to submit capability profiles and “slice-of-day” table to summarize QC values.

PG&E agrees with this recommendation. The recommendation requires more clarity about the resource's sensitivity to temperature.¹⁴ PG&E supports the clarity and finds it reasonable for DR providers to a capability profile that summarizes the ex-ante QC values by hour and month, for which the DR providers are seeking Resource Adequacy (RA) credit.

6. CEC Recommendation: Eliminate unnecessary reporting requirements for QC determination.

PG&E supports clarity of requirements and simplification where appropriate. Today, the DR load impact protocols (LIP) are clear about which protocols are only applicable to non-event-based resources, i.e., protocols 11 through 16 are specific for ex-post impact estimation of non-event-based activities. Since event-based resources are not required to comply with those protocols, there is no need to eliminate them for QC determination. There may be protocols that can be simplified, but the CEC Report seems to be open-ended, without providing a definitive list of simplifications. For the recommendation to be more meaningful and actionable, PG&E recommends the CEC clearly specify the list of unnecessary requirements to eliminate or modify.

¹³ CEC Report, p. 49.

¹⁴ CEC Report, p. 49.

7. CEC Recommendation: Plan to produce final QC numbers by June 1 preceding the RA compliance year.

PG&E believes that having the final QC numbers by June 1 would be ideal, but it may be an aggressive target especially with the implementation of the 24-hour slice-of-day framework. RA determination is a complex process. PG&E encourages the CEC to consult with the Energy Division of the CPUC on the feasibility of this target date.

8. CEC Recommendation: Adopt streamlined QC approval criteria.

PG&E supports the recommendation with caveats. When considering streamlining the QC approval process, additional approval criteria should be incorporated—for example, the enrollment of the resource should remain relatively “unchanged” from the prior program year if the QC is to be approved in a streamlined process. Otherwise, the streamlined approval could be subject to gaming when a meaningful portion of the enrollment has been removed from the resource and the DR provider is still forecasting the same ex-ante megawatts (MWs) because the resource performed well the prior year. To close the loophole, PG&E recommends that the CEC include enrollment change in the streamlined approval criteria, such that the enrollment change from the previous year should be no more than 10%.

9. CEC Recommendation: The California ISO should implement the proposed penalty mechanism and exempt DR from the Resource Adequacy Availability Incentive Mechanism (RAAIM).

PG&E supports exempting DR from RAAIM since the CPUC has recognized DR as a variable-output resource. However, capacity penalty assessment should stay within the CPUC’s jurisdiction, should the CPUC adopt CEC’s incentive-based approach.

10. CEC Recommendation: Consider phase-in of incentive-based approach over time.

PG&E believes that if the CPUC adopts the incentive-based approach, it should consider phase-in at least over two years to allow DR providers to overcome the learning curve.

11. CEC Recommendation: Require DR providers to use the same baseline for settlement and ex-post evaluation unless an alternative is more accurate but unable to be used for settlement.

PG&E does not agree with the recommendation because settlement baselines are not accurate enough to estimate the performance. As the CEC staff acknowledges, feasible Independent System Operator (ISO) approved baselines are often insufficient, particularly for weather-sensitive resources.¹⁵ The settlement calculation is designed to be simple and easy for

¹⁵ CEC draft report, p. 50.

customers to understand, but the simplicity is at the cost of accuracy. Even though the CEC recommendation to use the same baseline for settlement and ex-post evaluation is more of a qualitative guideline rather than a prescriptive standard,¹⁶ the recommendation does not seem to have clear benefits for resource planning. Thus, PG&E does not think that DR providers should be required to use settlement baselines for ex-post evaluation, but the option should remain available as it does today under the LIP.

12. CEC Recommendation: Adopt bid normalization for load impacts in ex-post capacity valuation.

PG&E does not support the ex-post capacity valuation for the reasons discussed in section 3 above. In the event the CEC's ex-post capacity valuation approach is adopted, PG&E recommends that the bid normalization be modified so that the load impact of a partial dispatch is not automatically assumed to be equal to the bid amount.

13. CEC Recommendation: Reduce the threshold required for midyear QC update.

PG&E is not opposed to reducing the threshold. That said, reducing the threshold may not be necessary, as DR providers already have the option to submit a mid-year QC update when the threshold is not met.

14. CEC Recommendation: Eliminate the components of the PRM adder associated with operating reserves and load forecast error.

PG&E supports this recommendation.

15. CEC Recommendation: Convert the forced outage adder to a multiplier applied in the effective capacity formula.

PG&E agrees with the recommendation if the capacity shortfall penalty mechanism has been tested with actual data and proves to work as intended.

With the capacity shortfall penalty mechanism, the recommendation converts the forced outage adder to a multiplier in the effective capacity formula when assessing ex post performance, allowing some level of underperformance due to forced outages without imposing penalty. In the year-ahead RA planning, the resource is not grossed up by a forced outage adder from the California ISO perspective, and the ISO would still procure additional resource to satisfy the planning reserve margin. This would be consistent with PG&E's prior comments, which recommends a buffer in resource planning to account for variability of DR impacts.

¹⁶ CEC draft report, p. 51.

To clarify the record, PG&E submitted comments to CEC docket number 21-DR-01 on October 17, 2022, in which PG&E proposed eliminating the forced outage adder for DR.¹⁷ The Working Group (WG) draft report does not include PG&E's position on planning reserve margin (PRM) adders in *Table 2: Stakeholder Positions on PRM Adders*. Neither is PG&E's position referenced in the report's narrative. PG&E requests that the CEC include PG&E's position in Table 2.

16. CEC Recommendation: Maintain the distribution loss factor adder in QC values.

PG&E supports this recommendation.

In the comments submitted to CEC docket number 21-DR-01 on October 17, 2022, PG&E recommended maintaining transmission and distribution loss factor adders for DR. The WG draft report does not include PG&E's position on transmission and distribution loss factors in *Table 3: Stakeholder Positions on Transmission and Distribution Loss Factor Adders*. Neither is PG&E's position referenced in the report's narrative. To clarify the record, PG&E requests that the CEC include PG&E's position in Table 3.

17. CEC Recommendation: Update transmission loss factors and include the adder as a credit.

PG&E supports this recommendation.

PG&E appreciates the opportunity to comment on the CEC Report and looks forward to working with the CEC and other state agencies. Please reach out to me with any questions.

Sincerely,

Licha Lopez

¹⁷ [PG&E Comments on the final Supply Side Demand Response QC Proposals](#)