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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric
Company (U39E) for Approval of Demand
Response Programs, Pilots and Budgets for
Program Years 2018-2022

U 39 E

Application 17-01-012
(Filed January 17, 2017)

And Related Matters

Application 17-01-018
Application 17-01-019

**RESPONSE OF PACIFIC GAS AND ELECTRIC
COMPANY TO ALJ'S FEBRUARY 28, 2019 RULING
DIRECTING RESPONSES TO QUESTIONS RESULTING
FROM THE FEBRUARY 11-12, 2019 DEMAND
RESPONSE AUCTION MECHANISM WORKSHOP AND
COMMENTS ON
PROPOSALS TO IMPROVE THE MECHANISM**

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Dated: March 29, 2019

Attorney for
PACIFIC GAS AND ELECTRIC COMPANY

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Pursuant to ALJ Hymes' February 28, 2019 ruling, Pacific Gas and Electric Company (PG&E) submits this filing with its responses to the questions presented in the ruling. PG&E's responses are contained in the Attachment to this pleading.

Respectfully Submitted,

By: /s/ Shirley A. Woo
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Introduction

PG&E appreciates the Energy Division (ED) Staff's significant efforts in analyzing and providing the January 4, 2019, Evaluation Report of the Demand Response Auction Mechanism (DRAM) Pilot¹ (Evaluation Report) and the opportunity to provide responses to questions in Administrative Law Judge (ALJ) Hymes' February 28, 2019, Ruling (ALJ Ruling).

PG&E agrees with the Evaluation Report's general assessment that the DRAM pilot had mixed results.² While new customers and third-party demand response providers (DRPs) were engaged through the pilot, a number of DRPs³ failed to meet their contractual obligations.⁴ ED also recognized that there need to be higher standards than the "permissive" design allowed for the pilot (i.e., "relaxed" performance requirements and insufficient penalties for non-performance), accountability for results, and transparency since as of November 2018, "the entities jointly responsible for ensuring system reliability (CPUC, CAISO, and IOUs/LSEs) still had no visibility into the actual capacity available for a significant portion of the DRAM portfolio."⁵ Specifically, "In the absence of a CPUC-approved ex-ante basis or standard(s), it is difficult to validate or verify to what extent the Qualifying Capacity entered on the DRPs' Supply Plans accurately reflects the available dispatchable capacity for RA [resource adequacy] purpose. Without verifiable standards, the IOUs question DRPs' ability to 'deliver on their full bids if called upon [by CAISO] to do so.'"⁶ Further, the Evaluation Report states that the CAISO's Resource Adequacy Availability Incentive Mechanism (RAAIM) penalties do not apply to DR resources smaller than 1 MW, which has developed into a glaring loophole on the penalty mechanism that was most relied upon to assure the DRAM resource capacity is delivered reliably.⁷

¹ ALJ Hymes' January 4, 2019 Ruling issuing the Evaluation Report of the Demand Response Auction Mechanism (DRAM) Pilot, Noticing January 16, 2019 Workshop, and Denying Motion to Require Audit Reports in the Evaluation Report.

² Evaluation Report, p. 85.

³ Also referred to as Sellers in the context of an executed DRAM contract, whereas the IOUs are the Buyers.

⁴ *Ibid*

⁵ *Ibid*, p. 108.

⁶ *Ibid*, p. 103. Embedded quote refers to the following footnote: Joint IOU Response to ALJ August 6, 2018 Ruling at 9.

⁷ *Ibid*, p. 109.

These issues rightfully lead to ED's hesitation to move forward with a permanent mechanism, especially given the risks to ratepayers that rely on such capacity for the reliability of the grid and the impacts on affordability.

As a result, PG&E recommends modifications to Commission's path forward for DRAM, including ED's Evaluation Report recommendation to extend the pilot mechanism for another five to six years. Similarly, contrary to a statement in the ALJ Ruling, PG&E does not recommend approval of DRAM on a permanent basis at this time.⁸ Instead, PG&E believes that the DRAM pilot needs to test significant modifications and achieve incremental successes to develop a record demonstrating that DRAM is a prudent use of ratepayer funds before any decision on the future of DRAM is made. Otherwise, the record as it stands does not support an expansion of DRAM, even with significant changes, beyond a limited pilot. In addition, PG&E believes it is imperative to develop clear goals for DRAM that provide value to ratepayers, especially if the Commission decides that DRAM procurement should exceed a specific RA need. While additional information is necessary to determine if DRAM can be improved to provide value to ratepayers, the Commission should only approve DRAM on a permanent basis once (1) it is determined what is reasonable for the IOUs to procure via DRAM consistent with decisions and initiatives in other CPUC proceedings,⁹ (2) the pilot has been proven to effectively deliver on those goals, and (3) an evaluation protocol is developed to continue to assess its value relative to its costs. As a result, PG&E developed a short-term plan and a long-term plan per the Two-Step Approach identified in the ALJ Ruling to identify a path forward to meet these goals and resolve key issues.¹⁰

Short Term: If the Commission believes the future of DRAM should proceed, without the procurement being tied to an explicit RA need, then PG&E recommends the Commission approve a DRAM pilot with a solicitation envisioned for 2019 for deliveries in 2020 that provides stakeholders with transparent information and data, and clear learnings and safeguards to ensure that DRAM resources have the ability and intent to respond to CAISO dispatches at the levels in the Seller's contract(s). This includes:

- Qualifying capacity (QC) based on observable and verifiable event performance data where available.
- Testing of DRAM resources to inform the reliability of the capacity procured through DRAM.
- Appropriate penalties for under performance that address existing loopholes.

⁸ ALJ Ruling, p. 3, incorrectly states, "PG&E clarified that with the Two-Step Approach, the Commission would approve the auction mechanism on a permanent but iterative basis, with improvements implemented on a regular basis."

⁹ This includes, but is not limited to, (1) RA and the discussion around centralized procurement for local RA, (2) the development of a multi-year RA procurement framework, (3) alignment with the Integrated Resource Plan (IRP) proceeding, and (4) the definition of a durable flexible capacity product discussed in R.17-09-020. In addition, continued growth in Community Choice Aggregation reduces PG&E's procurement needs as an LSE.

¹⁰ PG&E Introduction to DRAM Working Group Proposals, served February 6, 2019, in A.17-01-012, et seq.

Long Term: Any long-term DRAM should be conditional on the results of this short-term pilot year in demonstrating the effectiveness and transparency of DRAM providing reliable RA, as well as a mechanism to assess the value of DRAM to ratepayers, relative to the cost.

Responses to Questions

- 1. Explain, in detail, whether the Commission should adopt a two-step approach wherein the auction mechanism is adopted allowing for: Step One - limited critical improvements to the mechanism in the initial decision to provide for a solicitation in 2019 and deliveries in 2020 (considered to be a bridge period) and, Step Two - continuous and iterative improvements to the mechanism in future decision(s) based on additional experience, continuous monitoring, and evaluation data from future solicitations.**

PG&E believes a phased approach is necessary and recommends the Commission adopt Step One and analyze its results before any Step Two. Specifically, if the Commission decides that a 2020 DRAM (RFO in 2019 for deliveries in 2020) is a must, regardless of RA need, the only practical option may be to structure Step One as a short-term, limited pilot focused on testing stronger requirements on performance and reliability of DRAM resources, as a RA-only product.

In parallel to Step One, stakeholders should continue to develop longer-term policy goals for DRAM through a regulatory process that works toward the resolution of the fundamental policy issues raised in the DRAM evaluation report and by stakeholders. This includes, but is not limited to:

1. What products are reasonable for the IOUs to procure through DRAM consistent with decisions and initiatives in other CPUC proceedings?
2. Is it appropriate or reasonable for IOUs to procure beyond an immediate RA need?

The Commission could only determine at a later stage whether it is prudent to extend DRAM further based on the learnings of the 2018, 2019, and the short-term Step One pilot DRAM deliveries, and in light of additional modifications that may be necessary to address requirements for any long-term goals identified.

- 2. If the Commission authorizes a two-step approach, explain which critical recommendations or party proposals should be required in order to implement a solicitation in 2019 for 2020 deliveries (i.e., a bridge period). Be specific about the details of the recommendations, including timing.**

PG&E lists its critical recommended changes below and provides an Appendix A detailing specifically how these recommendations are reflected in the proposed design of a Step One short-term pilot.

1. Develop greater assurance in DRPs' ability to accurately forecast the QC that they can reliably deliver by:
 - Introducing new milestones to improve visibility on the ability to perform at contracted capacity level.¹¹
 - Defining criteria, based on existing DR standards and historical customer data, to assess the reasonableness of DRP's QC for a DR resource at customer and resource levels for the delivery month.
 - Requiring that the QC used for month-ahead supply plan be based exclusively on active and registered customers rather than on enrollment projections or other factors that may inflate the resource's capabilities.
 - Creating the new role of an Independent Monitor (IM) jointly contracted by the IOUs to evaluate this pilot for transparency and verification of the reasonableness of the DRP's QC determination processes and values.¹²
2. Develop greater assurance in DRPs' ability to be dispatched reliably by the CAISO through increased testing and better measurement of the demonstrated capacity (DC) by:
 - Creating a track record, from the dispatch and test results, of reliable capacity, which MOO bidding only cannot provide.
 - Allowing for an apples-to-apples comparison across the measurement of QC and DC and enabling a feedback loop between DC performance and the subsequent forecasts of QC.
 - Verifying the DC through transparent and consistent mechanisms, including the IM's assessment of how well the QC forecast aligned with DC results, mitigation of the risk of customer movements between resources resulting in double counting of capacity, quick evaluation of pilot results, etc.
3. Strengthen penalties to incentivize performance and reduce the impact on ratepayers for underperformance.
 - PG&E recommends stricter penalties for capacity shortfalls where Sellers should be incentivized to notify Buyers earlier about issues so that Buyers can replace shortfalls in capacity if necessary.
 - Buyers should also be permitted to pass through all costs associated to a DRAM Seller's capacity shortfall.
 - PG&E recommends the CAISO coordinate with the CPUC in developing reliability performance requirements, due to RAAIM only applying to resources larger than 1 MW today.¹³
4. DRPs should develop an intimate familiarity with the obligations associated to meeting their RA obligations.

¹¹ See also PG&E's response to question 18 and Appendix A.

¹² See also PG&E's response to question 11 and Appendix A.

¹³ CAISO tariff, section 40.9.2 states, "Resource with a PMax less than 1.0 MW" as a category exempt from RAAIM.

5. Finally, the Commission must adopt a timing that allows the learnings from the bridge pilot to be incorporated into any decision for a subsequent iteration of DRAM, if any, as a Step Two.

3. If the Commission authorizes a two-step approach, what budget amount should the Commission authorize for the bridge period solicitation and related deliveries and why?

PG&E recommends that if the Commission orders the IOUs to conduct a 2020 DRAM pilot, it should only do so in conjunction with authorizing the modifications outlined in Appendix A and associated contract changes to address identified issues with the current DRAM, and the budget should not exceed \$6 million.

This budget should also cover necessary funding for contract administration, audits of DRAM Sellers, independent evaluator costs for the RFO, independent monitor costs for the contract period, and costs to administer prohibited resources provisions for affected DRAM participants.¹⁴ PG&E would need new authorization for new cost recovery, as there are no current authorizations or mechanisms available to recover this budget.

It is also absolutely necessary to partner any budget discussion with a discussion of cost competitiveness of offers and the value of capacity procured through DRAM. The Commission should provide clear, appropriate, and meaningful guidance to limit the impact to ratepayers of DRAM offers that are not cost competitive with the market, while performance is being tested. In addition, it is worth noting that the timing of an auction in 2019 will not accommodate counting of the capacity in the year-ahead RA showing for 2020, which is expected to be due at the end of October 2019, which may impact the benefit of procuring such capacity.

4. If the Commission authorizes a two-step approach, describe the solicitation schedule the Commission should approve for the bridge period (a 2019 auction for 2020 deliveries). Include in your response a proposed schedule in which a final decision is issued by July 11, 2019 and the proceeding remains open to address the second step improvements. Include details on the timing for the deliveries.

A potential accelerated schedule may be feasible to allow for a 2019 DRAM RFO for 2020 deliveries. This schedule is highly dependent on streamlined regulatory processes for which there is no prior experience with the DRAM RFO process. It also requires that the final decision itself adopts, with a high level of detail, modifications to the solicitation and pro forma contract described within PG&E's comments and in Appendix A.

¹⁴ Resolution E-4906, p. 32.

	Accelerated Process
Final Decision ¹⁵	7/11/2019
IOUs Submit Tier 1 Advice Letter with Contract and Solicitation Modifications ¹⁶	8/12/2019
CPUC Approval of Tier 1 Advice Letter ¹⁷	10/11/2019
IOUs Launch RFO ¹⁸	12/10/2019
IOUs Complete RFO and Submit Tier 1 Advice Letter with Executed Contract ¹⁹	4/8/2020
DRPs Submit First Monthly Supply Plans ²⁰	6/2/2020
Contract Term Begins (First Deliveries)	8/1/2020

5. In the Pilot Evaluation, Staff recommended an expedited schedule in both the bridge period and future solicitations. If the Commission authorizes a two-step process, explain whether the Commission should waive Commission-specific review and approval of contracts for the Auction Mechanism.

If the Commission's goal is to issue an RFO in 2019 for deliveries in 2020 (2020 DRAM pilot), it is necessary to expedite Commission review significantly. That requires the Commission to:

- Adopt a final decision approving the 2020 DRAM pilot (estimated for June or July 2019) with a high level of detail, including modifications to the solicitation and pro forma contract, and
- Review the advice letter seeking approval of the solicitation process and the pro-forma contract modifications (estimated for August 2019).

¹⁵ Estimated date, dependent on when the proposed decision is issued. If an earlier decision date is feasible, then it could accelerate the remaining schedule.

¹⁶ While IOUs can work ahead of the final decision on changes, it would only save time if the final decision does not approve extensive changes to the contract and solicitation beyond what the IOUs proposed. A minimum of 30 days should be allocated for this step, but to the extent earlier submission is feasible, the IOUs would strive to submit earlier.

¹⁷ This estimate assumes a highly accelerated process, and the ability to utilize a Tier 1 or Tier 2 advice letter process, and assumes no protests. Speedier CPUC approval may allow this schedule to be further accelerated.

¹⁸ Dependent on CPUC approval of advice letter, and assumes minimal changes from what the IOUs submitted in the advice letter with contract and solicitation modifications to be able to implement on this timeline.

¹⁹ Reflects the minimum amount of time for an RFO of this nature to be run. In particular, it allows time for bidders to ask questions about the RFO and contract, which supports new entrants. Also assumes that CPUC approval of the advice letter is eliminated, allowing the contracts to be effective upon signing, and the advice letter is a Tier 1 with no protests.

²⁰ This is a highly aggressive timeline that is most suitable for existing DRPs, but the IOUs can suggest that new bidders allow themselves sufficient time before first deliveries.

If the Commission provides sufficient direction and approval at these earlier stages, the IOUs could administer the solicitation following that direction, subject to the assessment of the independent evaluator (IE) and the review of the Procurement Review Group (PRG). PG&E is required to review procurement decisions with the PRG, which includes the Energy Division, but the Commission could waive its review of the Tier 1 advice letter seeking approval for the signed contracts.

- 6. If the Commission authorizes a two-step approach, explain what procedural steps the Commission should use to address the remaining questions regarding the Auction Mechanism: e.g., workshops, working groups, evidentiary hearings, etc. Include, in your response, a recommended timeline through which the record is complete by August 30, 2019 and a decision can be written and adopted by December 19, 2019 to allow for a solicitation in the Spring of 2020, if the Commission authorizes a future mechanism.**

PG&E does not support a decision authorizing a future mechanism be adopted by December 19, 2019. The learnings (and success) from a 2020 DRAM pilot are absolutely necessary to develop a record sufficient to support any decision to adopt any continuation of DRAM. In contrast, a decision written and adopted by December 19, 2019 will not allow time for any learnings to be applied from the short-term Step One or the development of a complete record, which should, at minimum, clearly demonstrate that DRAM Sellers are fulfilling their contract requirements and DRAM resources are reliable when dispatched. Without these learnings, ED's evaluation is the sole record, and it identifies significant concerns to such an extent that PG&E could not support a future mechanism beyond a limited, short-term auction.

The summer of 2021 is the soonest PG&E believes a decision could be adopted. For the Commission's schedule to allow for *any* learnings from the short-term pilot to be considered, at least six months of the pilot deliveries, with some of those months including peak summer DR months (i.e., June through September), should be evaluated. If the short-term pilot allows for significant transparency and an independent monitor, then the evaluation time for a proper assessment of the learnings and ongoing review of the contract deliveries could be accelerated. However, even with the efficiencies of this evaluation, that would mean the soonest a decision on the future of DRAM could be issued, using similar steps to the "accelerated scenario" identified in PG&E's response to question 4, would be the summer of 2021.²¹

- 7. If the Commission authorizes a two-step approach, explain the procedural steps and timeline the Commission should use to address improvements for future years of the Auction Mechanism. How often should the Commission address iterative improvements to the Auction Mechanism?**

²¹ This also presumes the statutory deadline for the proceeding would be extended beyond this date.

As the 2018-2022 DR Application proceeding is set to close, its statutory deadline should be extended to support a decision on the long-term goals of DRAM. Otherwise, any procedural steps to move forward or make changes would need to be done through advice letters, though it is not clear that the advice letter process would be sufficient.

Any continuation of the DRAM pilot should be dependent on an evaluation of its effectiveness. The evaluation should be conducted by an independent monitor, who would be able to perform the analysis with increased transparency into DRAM deliveries and access to this data in a timely manner due to the monthly reporting described in the response to question 19. In addition, requiring that initial invoices are available within 60 days will help accelerate the timing for the evaluation. PG&E urges the Commission to consider data from the remaining months of the 2018 DRAM delivery year, the 2019 DRAM delivery year (both from the 2018-2019 contracts and the 2019 contracts), and at least 6 months of data from the Step 1 pilot, which should include some data from both the summer and winter DR seasons. Stakeholders should have the opportunity to discuss the evaluation report in a workshop and submit formal comments and reply comments to the evaluation report. At that point, the CPUC could issue a decision on a future iteration of DRAM. Any continuation of the DRAM beyond this 2020 DRAM pilot should be based on the ability of DRAM Sellers to reliably fulfill their RA obligations and response to CAISO dispatches, and any other goals that are determined to be reasonable for DRAM. Lastly, any decision on a continuation of DRAM should authorize a funding mechanism and apply learnings from the 2020 DRAM pilot into a future solicitation.

- 8. Building on the small group discussion in the workshop and the developed options for a goal provided above in Table 1, what should be the goal of the Auction Mechanism? Keep in mind that a goal is abstract, not measurable and long term. For example, the adopted goal of demand response is: Commission-regulated demand response programs shall assist the State in meeting its environmental objectives, cost-effectively meet the needs of the grid, and enable customers to meet their energy needs at a reduced cost.**

DRAM procurement should assist the state in meeting its environmental objectives, cost-effectively meet the needs of the grid, and enable customers to meet their energy needs at a reduced cost. To meet these needs and objectives, DRAM resources should be:

- **Reliable.** IOUs, the CAISO, and CPUC need the ability to verify that the resources are reliable, DRPs need to demonstrate they can respond to grid needs and provide RA, and ratepayers should be indifferent should the full contracted capacity not materialize.
- **Competitively Procured.** DRAM should not be a carve-out but rather it should be required to be competitive with other CAISO market-integrated clean resources used to meet grid needs.
- **Fungible with Standardized Contracts.**

9. **Building on the discussion in the workshop and the developed list of objectives and principles provided above in Table 2, what objectives and principles should the Commission adopt? Keep in mind that objectives are specific, measurable, attainable, realistic, and timed. Principles are assumptions, fundamental rules, or guiding doctrines.**

Objectives

DRAM should:

- Provide greater value to the grid and customers than their comprehensive cost, including the Rule 24 systems used to support DRAM deliveries, administration of contracts, and incentive payments.
- Be reliable, meaning they deliver 100% of their contracted capacity.

Principles

DRAM should:

- Be transparent; all contracts should have consistent levels of transparency and oversight.
- Abide by the obligations associated with meeting an RA obligation, consistent with decisions and initiatives in other CPUC proceedings and pursuant to the CAISO tariff.
- Reflect a level playing field. The level playing field should apply between DRPs as well as between DRPs and IOU programs.

10. **If the Commission determines not to authorize a two-step approach, explain whether the Commission should authorize a continuation of the Auction Mechanism. If the Commission should authorize a continuation of the Auction Mechanism, provide justification for the length of time the authorization should cover, the budget the Commission should authorize, and the cost recovery approach the Commission should authorize.**

PG&E urges the Commission not to authorize a continuation of DRAM without the additional learnings that would come from a two-step approach. Currently, the Energy Division's evaluation is the sole record, and it identifies significant concerns to such an extent that PG&E could not support a future mechanism beyond a limited short-term auction with significant improvements to the pilot design and pro-forma contract. Even if the Commission adopts the modifications contained within PG&E's comments, it is not prudent for the Commission to authorize further ratepayer funds until these modifications are tested and determined to be effective at resolving key issues and successful at meeting the goals of DRAM, which should be determined through a thoughtful regulatory process.

11. Describe and explain the standards that the Commission should adopt for estimating the Qualifying Capacity of an Auction Mechanism resource applicable to Supply Plans. Be specific and include comments on the options discussed during the workshop: test, market dispatch, or an ex ante estimation method. Explain the process the Commission should use to implement the standards.

The DRAM pilot has allowed a lenient, permissive design with the use of contract capacity for QC. The current methodology of determining the QC for third-party DRP resources is: (1) inherently flawed for resource planning purposes, (2) intended to be an interim methodology approved through 2019,²² (3) inconsistent with the standards by which the IOUs are being held,²³ and (4) creating an unlevel playing field between IOU DR resources, third-party DRP resources, and other non-DR resources that provide RA. For those reasons, PG&E proposes that, consistent with all other resources, the QC for third-party DRP resources be based on observable and verifiable event performance data.

PG&E proposes a stepped approach that defines criteria by which to assess the reasonableness of DRPs' QC forecast, after pre-QC milestones are achieved. The goal is to gain greater assurance of the validity of the DRP's QC for RA planning purposes.

Step 1: DRP estimates the load reduction potential of each enrolled customer, which reasonableness is then assessed by the Independent Monitor (IM) using appropriate criteria, including, but not limited to, those listed below:

- DRP shall determine individual customers' max²⁴ and average monthly demand from the previous rolling 12 months during CAISO Availability Assessment Hours (AAH) and develop a realistic DR load drop profile.
- If applicable, DRP shall use results from DR events' or tests' performance from prior rolling two years for individual customers, with seasonal adjustments, to reflect customers' capability for load reduction during DR events.

Step 2: DRP estimates the load reduction potential at the resource level, which the DRP enters as the QC in the Monthly Supply Plan. The reasonableness of the QC

²² It was believed that penalties under the CAISO tariff (including the "RAAIM") and contract provisions were adequate incentives for DRPs to correctly state the QC of their resources, which the Energy Division's Evaluation Report contradicts. This methodology was approved in Decision 16-06-045, pp. 41-42, which states that the exemption should be reviewed based on the findings of the Energy Division's final evaluation report, which was later issued on January 4, 2019 in A.17-01-012 et seq. Specifically, the report states on p. 109: "During the DRAM pilot, CAISO RAAIM penalties and replacement capacity requirements under the CPUC's RA program have not effectively incentivized performance."

²³ The QC for IOU DR programs is based on Commission-approved load impact evaluation protocols that require the use of observed and verified past event performance data.

²⁴ The customer's max demand should constitute a not to exceed cap which should be evaluated seasonally at minimum (i.e., summer is May to October and winter is November to April).

forecast is then assessed by the IM using appropriate criteria, including, but not limited to, the ones listed below:

- Once the composition of the resource is done, it is the DRP's responsibility to estimate the resource's QC, considering the assessment of customers' load reduction potential from Step 1. The DRP may also elect to test its resources in advance of this QC determination, and use the resulting performance as an input to its QC forecast.
- For each resource, the sum of customers' max demand constitutes a not to exceed cap when determining the resource's potential load reduction capabilities.
- The information from steps 1 and 2 shall be provided to the IM as input to its assessment of reasonableness of the load reduction potential forecast at the resource level at least 75 days before the delivery month.

Step 3: Independent Monitor rates the reasonableness of DRP's QC forecast

- The IM will record all information from Steps 1 and 2, and the rationale provided by DRP for its QC determination and Supply Plan submission.
- The IM will rate, at least 61 days before the delivery month, the reasonableness of the QC for each resource that the DRP includes in its Supply Plan.²⁵ The DRP ultimately determines the QC, but the IM's rating shall be provided to the IOU at the time of the DRP's Supply Plan submission. If the QC value from the DRP deviates from IM's recommendation, the IM will document and track the DRP's decision for the purpose of assessing the DRP's ability to accurately forecast resource QC relative to the DC. This data point would be used as qualitative criterion for any potential future RFO solicitation.

Additional requirements:

- DRPs shall use a consistent baseline methodology between the determination of QC and DC, to allow for the creation of a consistent feedback loop between DC and QC.
- IOU requires DRP to choose a baseline methodology that is approved by both the CPUC and CAISO (i.e., 10-in-10 only today).²⁶

²⁵ PG&E recommends a red, amber, or green rating of the reasonableness of the QC forecast. Red is defined as unreasonable and unsubstantiated, amber defined as reasonable with caveats, and green is defined as reasonable.

²⁶ PG&E notes that there is a separate stakeholder process within A.17-01-012 et seq to discuss baselines. At a workshop on March 22, 2019, ALJ Hymes specified that she would issue a ruling with a set of questions pertaining to baselines, which PG&E plans to respond to with further detail.

12. Explain whether the Commission should adopt an energy component requirement Auction Mechanism resources. If the Commission authorizes optional dispatch hours in solicitations, explain whether and how the values of the bids should be modified to account for this additional requirement. If the Commission adopts a minimum dispatch hour performance requirement, explain the parameters the Commission should adopt.

PG&E does not recommend that there be an energy component or minimum dispatch hour requirement in the bridge period. With limited time to implement changes for a 2020 DRAM pilot, the Commission should exclusively focus on making sure DRAM resources are effective at providing the RA in their DRAM contract.

If a requirement for a number of dispatch hours was considered for a subsequent DRAM solicitation, if any, PG&E cautions the Commission that such a requirement will not, in and of itself, necessarily displace natural gas plants or result in dispatches at times when the grid most needs it.

If the objective is to require a number of dispatch hours of DRAM resources that target times when the grid most needs it (i.e., high priced/high heat rate intervals), the Commission should impose similar least cost dispatch (LCD) principles that are applied to the IOUs' programs,²⁷ given that the intent of LCD is to ensure an opportunity cost is calculated so that the limited number of dispatches are used at times when they would most reduce ratepayers costs.

13. Explain whether the Commission should adopt penalties for shortfalls in both Qualifying Capacity and Demonstrated Capacity. If the Commission adopts penalties, explain at what point in time penalties should be assessed and under what conditions. Explain whether the penalties should be based on costs incurred by a utility for failure to perform or the price of the contract.

PG&E recommends the Commission adopt both a QC and DC penalty structure.

Regarding QC, the Commission should adopt a penalty structure for shortfalls in QC compared to the contracted capacity that reflects the obligations of any RA providers and encourages DRPs to disclose anticipated shortfalls sooner rather than later.

If the IOU depends on the DRAM capacity in its year-ahead showing, and it doesn't show up in the monthly Supply Plan submission process, the IOU must replace that capacity at that time, or face CPUC and CAISO non-compliance penalties. Early notification of expected shortfalls allows for more time to replace the RA that will not be available at an expected lower cost to ratepayers.

²⁷ This is included within the Energy Resource Recovery Account reporting proceeding.

As a result, PG&E recommends the following penalty structure for the short term to reduce risks to ratepayers:²⁸

- For any capacity shortfall between the contracted capacity and the year-ahead supply plan, if applicable:²⁹

- PG&E recommends that DRPs pay a replacement fee defined as:

$$\text{Replacement fee}_{\text{year-ahead supply plan QC shortfall}} = [\text{Contracted Capacity} - \text{QC}_{\text{year-ahead supply plan}}] * \text{Contract Price}$$

- In addition to the replacement fee, PG&E proposes a QC penalty shortfall defined as:

$$\text{Penalty}_{\text{year-ahead supply plan QC shortfall}} = [\text{Contracted Capacity} - \text{QC}_{\text{year-ahead supply plan}}] * \text{Contract Price} * X_1$$

- For capacity shortfalls between the month-ahead supply plan QC and the year-ahead supply plan QC³⁰:

- Similar to the logic above, PG&E recommends that DRPs pay a replacement fee defined as:

$$\text{Replacement fee}_{\text{month-ahead supply plan QC shortfall}} = [\text{QC}_{\text{year-ahead supply plan}} - \text{QC}_{\text{month-ahead supply plan}}]^{31} * \text{Contract Price}$$

- Additionally, PG&E proposes a QC penalty shortfall defined as:

$$\text{Penalty}_{\text{month-ahead QC shortfall}} = [\text{QC}_{\text{year-ahead supply plan}} - \text{QC}_{\text{month-ahead supply plan}}] * \text{Contract Price} * X_2^{32}$$

- For capacity shortfalls after T-30 days of the delivery month, the CAISO may use the CAISO Procurement Mechanism (CPM) as a procurement backstop.³³

²⁸ This penalty structure may not be appropriate for a longer-term DRAM, should one be adopted. PG&E recommends testing this penalty structure in the short term and exploring how in the long-term, DRPs could be submitted to the same requirements as other supply-side resources providing RA for the procurement of RA capacity shortfalls.

²⁹ The timing of the Step 1 pilot is not likely to allow for any DRAM capacity procured to be included in the year-ahead supply plan for 2020 deliveries.

³⁰ If no year-ahead supply plan was provided for a delivery month (due to timeline of RFO), the contracted capacity will be used instead.

³¹ Year-ahead supply plan QC may not exceed the month-ahead supply plan QC since replacement capacity would have already been procured.

³² The multiplier for month-ahead QC shortfall penalty (X_2) is greater than the multiplier for year-ahead QC shortfall penalty (X_1) so that DRPs are incentivized to disclose QC shortfall as early as possible

³³ If Seller fails to deliver any portion of the Contract Quantity of Product and such failure results in CAISO Capacity Procurement Mechanism costs imposed on Buyer due to an insufficient monthly RA plan, Seller agrees to indemnify Buyer from these costs less any damages already assessed.

- An event of default would be triggered if the Seller provides two months of QC below 60% of the contract capacity, on average across all resources.

Regarding DC, the Commission should adopt a penalty structure whereby:

- DRAM Sellers continue to receive RAAIM penalties assessed by the CAISO.
- DC is capped by month-ahead QC quantity.
- The following payment/penalty structure is applied:

Demonstrated Capacity Payment/Penalty Structure

$$\text{Unadjusted Hourly Capacity Payment} = QC_{\text{month-ahead supply plan}} * \text{Contract Price} \div (\text{total \# of hourly dispatched events})$$

Hourly Delivered Capacity Ratio	Adjusted Hourly Capacity Payment/Penalty
≥ 0.75 and < 1.00	Adjusted Hourly Capacity <i>Payment</i> = Unadjusted Hourly Capacity Payment * Hourly Delivered Capacity Ratio
≥ 0.60 and < 0.75	Adjusted Hourly Capacity <i>Payment</i> = Unadjusted Hourly Capacity Payment * (.50)
≥ 0 and < 0.60	Adjusted Hourly Capacity <i>Penalty</i> = Unadjusted Hourly Capacity Payment * (0.60 – Hourly Delivered Capacity Ratio)
< 0	Adjusted Hourly Capacity <i>Penalty</i> = Unadjusted Hourly Capacity Payment * (0.60)

$$\begin{aligned} \text{Total Monthly Capacity Payment/Penalty} = \\ \sum_{\text{for all hours of dispatch}} \text{Adjusted Hourly Capacity Payment} - \\ \sum_{\text{for all hours of dispatch}} \text{Adjusted Hourly Capacity Penalty} \end{aligned}$$

- An event of default would be triggered if the Seller provides two months of DC below 90% of the QC, on average across all resources and dispatch hours.

14. Explain whether over-performance should be incentivized and what the incentive should be. Explain whether there should be a cap and what the cap should be.

As there is no RA value to overperformance for ratepayers, there should not be a value of overperformance in DRAM. PG&E does not recommend compensating for over performance in RA delivery or a cap.³⁴

³⁴ The CAISO RAAIM already has a performance mechanism that may provide an incentive for DRAM resources that overperform, so any additional compensation from the Buyer would not be appropriate.

15. Explain the approach the Commission should adopt regarding Demonstrated Capacity on invoices including Must-Offer Obligation invoices and full or partial dispatch or test requirements. Explain what method demand response providers should use to calculate performance. Explain how the Commission should address the issue of locations moving between resources in a given month.

The DC should be capped by the QC submitted within the monthly supply plan and based on dispatch and testing where required, otherwise MOO can be used. More specifically:

- PG&E recommends an increase in the number of tests or dispatches required, so DRPs can create a data trail of their ability to reliably deliver per their forecasted QC, which MOO bidding only cannot provide. DRPs should use past DC performances as an input to inform their future QC forecast.
- Testing should also be coincident of all resources within the same SubLAP.³⁵
- The DC based on dispatch and testing results should be assessed hourly, rather than the current use of the best performing hour within the delivery month, such that underperformance in one hour is penalized accordingly and not offset by over delivery in another hour, thereby incentivizing a consistent and reliable product for RA purposes.³⁶

16. Explain whether the Commission should allow partitioning of contracts for reassignment and under what conditions. Explain whether and how the Commission can improve the transparency of the reassignment process. Describe the deadlines the Commission should require for invoices and any exceptions that should be made.

PG&E agrees with SCE's working group proposal that, consistent with current practice, partial assignments of contracts by the Seller to another DRP should not be permitted.

Sellers should not be allowed to sign a DRAM contract, and then attempt to reassign a portion of it if they determine later that they cannot deliver. First, a partial reassignment is administratively burdensome, as one DRAM contract becomes at least two contracts, with perhaps multiple partial reassignments throughout the relatively short term of a DRAM contract. Each partial reassignment would require reviews of new sellers, new accounts, new Performance Assurance postings (cash or letter of credit), potential shifting of customers from one DRAM seller to another, potential data management issues, and invoices.

The possibility of partial reassignments also introduces new issues with performance and types of DRAM sellers. Would the CPUC allow the partial assignment to a new entrant? Any partial assignment would presumably need to occur promptly for a new entrant to be

³⁵ Non-coincident tests may be reasonable if the IM can fully verify that there were no customer movements between tests that may lead to double-counting capacity.

³⁶ For simplicity, ignore segments < 1 hour and marginal dispatches during the 2020 DRAM.

evaluated and complete the relevant registration processes, and for customers to be enrolled in time to provide a Supply Plan that the IOU could accept with any certainty that the capacity could be provided. In addition, not being able to partition contracts encourages DRAM sellers to bid levels they can reasonably deliver, creating opportunities for more bidders.

It is also unfair to other bidders, who may have lost out on an opportunity to successfully provide service. For these reasons, PG&E does not think the partitioning of contacts will improve the performance of the DRAM program.

Finally, DRAM sellers already have methods for reassigning contracted capacity they are not capable of providing. DRAM sellers are capable of sub-contracting to other DR aggregators. Additionally, if a DRAM seller has identified a seller that is capable of providing the balance of contracted capacity, it can partner with that seller and continue to operate under its DRAM contract.

17. Explain whether the Commission should adopt a contract remedy for a utility's failure to deliver Revenue Quality Meter Data in time for CAISO settlement and what the remedy should be. Explain what improvements could be made to streamline communication between utilities and third-party demand response providers regarding missing data, data quality concerns, and gaps in data.

PG&E understands the importance of its obligation to deliver revenue quality meter data (RQMD) to DRPs through the rules and systems described in Rule 24,³⁷ and PG&E is supportive of getting a better understanding of data-related challenges which DRPs have faced through the DRAM process. Pursuant to PG&E's Rule 24, PG&E, as the Meter Data Management Agent (MDMA), is mandated to provide timely and accurate RQMD to DRPs. Under this liability, PG&E could be penalized, limited to the monetary fines imposed by the CAISO upon the DRP or its SC, due to non-compliance.³⁸ Given that there already exists a process within Rule 24 which aims to resolve conflicts related to data delivery obligations, PG&E does not support proposals for imposing additional fees or penalties on IOUs within the DRAM contract.

In addition, timely and specific issue reporting and communication between DRPs and IOUs is crucial for IOUs to fulfill their obligations to provide timely and accurate RQMD within the timeline prescribed by the CAISO for the delivery of settlement quality meter data (SQMD), which relies upon RQMD. The DRAM contract should include language requiring a DRP to notify the specific IOU within a reasonable period of time that it believes RQMD is missing for particular date or date range for an affected customer or set of customers. This notification to IOUs is critical. Due to the volume of data and

³⁷ The applicable rule for PG&E and SCE is Electric Rule 24 (Rule 24) and for SDG&E it is Electric Rule 32 (Rule 32).

³⁸ See Electric Rule 24 (Rule 24), Section F.2.d.

system detection capability, PG&E faces limitations in identifying and addressing every possible use case for missing interval data. Early notification on the part of the DRP allows the PG&E the opportunity to investigate the issue in a timely manner and troubleshoot where necessary so that a DRP can meet the CAISO SQMD timelines without penalty. In PG&E's experience, most DRPs proactively engage PG&E's Rule 24 team to identify cases of missing data and as a result of that open communication, cases of missing data have been successfully and timely resolved. Also, not all purported claims of missing interval data are due to system issues on the IOU's side, and may result from system issues on the DRP's side. DRPs should also be required to perform certain basic and independent troubleshooting steps to facilitate quicker resolution of issues. Any issues identified should be handled on a case by case basis following the existing process.

Further, PG&E does not support OhmConnect's working group proposal to create a service level agreement (SLA). Specifically, the proposal omits a key aspect typical of SLAs, which require two-way contracts with DRPs committing to strong data management and provision of their own robust systems and business practices. SLAs are also built on an assessment of the metrics contained within the SLA being appropriate, with the ability to figure out the root causes of issues and what systems are involved, and to identify that the root causes are within the IOUs' control. This isn't the case with the metrics OhmConnect proposed, as there are many factors that impact these metrics, some of which are outside of the IOUs' control. For example, there have been cases where large numbers of data delivery API errors are due to systems issues on the third-party side as opposed to systems issues on the IOU side. In addition, the IOUs recently delivered performance metrics on the click-through process and data delivery, so at best, an SLA is premature and the existing metrics should be assessed and utilized first. Further, the CAISO confirmed that penalties for late SQMD have not yet been assessed,³⁹ so it is unclear what are the specific adverse impacts, especially if there are methodologies or waivers that could be employed to alleviate those risks, including the use of statistical sampling.

18. Explain whether the Commission should approve implementation milestones with regard to utility systems, Commission registration, CAISO registration, and customer acquisition and what the milestones should be.

Yes, the Commission should adopt the milestones described below.

For new DRAM Sellers, the milestones below must be cleared before the first delivery month:

- DRP Registration and IOU Data System Integration Milestones within 45 days of first supply plan submission (105 days before first delivery month)
 - Execute the IOU DRP Service Agreement for DRPs enrolling IOUs' bundled customers;

³⁹ January 31, 2019 DRAM Working Group Meeting.

- Complete the CPUC registration process for DRPs enrolling IOUs' bundled customers;
 - Complete specific IOU required onboarding process for Rule 24/32;
 - Complete the registration with specific IOU data sharing platform and complete all connectivity requirements;
 - Successfully obtain a Click-Through authorization and/or submit a pdf/paper CISR-DRP form for processing;
 - Successfully utilize online channels to obtain the full Rule 24/32 data set for a customer authorization.
- CAISO Registration Milestones within 45 days of first supply plan submission (105 days before first delivery month)
- Register with the CAISO as a DRP and obtain a CAISO DRP ID;
 - Become a certified Scheduling Coordinator with the CAISO or contract with an existing certified Scheduling Coordinator (SC);
 - Review the CAISO's Demand Response User Guide.

For all DRAM Sellers, the following RA commitment milestones must be cleared before each delivery month:

- DRP provides its QC forecast to Independent Monitor for reasonableness assessment within 75 days of each delivery month. (See PG&E's response to question 11 and Appendix A.)

19. Explain whether the Commission should require third-party demand response providers participating in the Auction Mechanism to submit performance reports for the purpose of evaluation or providing a feedback loop. If the Commission should require performance reports, explain who should receive these reports and what should be included in the reports.

PG&E supports the following reporting requirements to enable quicker evaluation and feedback loops:

- Monthly report with Supply Plan submissions rating Seller's QC Periodic assessment of how modifications are working during the contract period (QC proposal, testing and dispatch requirements, etc.)
- Monitoring of customer movements and other issues
- Monthly ILP-like public report on performance from dispatches

20. Should the Commission create a process for monitoring and evaluating the Auction Mechanism and what should be the guidelines or principles for that process?

Yes, the IM should develop the following initial reports:

- Monthly report with Supply Plan submissions rating Seller's QC

- Periodic assessment of how modifications are working during the contract period (QC proposal, testing and dispatch requirements, etc.)
- Monitoring of customer movements and other issues
- Monthly ILP-like public report on performance from dispatches within 75 days after the delivery month

These reports should be reviewed for their effectiveness after the 2020 DRAM.

21. Should the Commission set a limit on market share? Explain what the limit should be,

PG&E believes that limiting market share can be quite reasonable to develop a more vibrant and stronger market with more than two or three key players, which promotes competition that is expected to lead to better long-term value to ratepayers. However, experience from prior solicitations suggests that being overly prescriptive with specific targets leads to inefficient outcomes.⁴⁰ Flexibility is needed to maximize the benefits of limits on market share, while understanding that there is uncertainty associated to what bids will be provided by the market. In particular, if the highest value bids do not lend themselves well to specific targets, the IOU is required to select offers at sometimes significantly higher cost to meet the target. Therefore, PG&E does not support setting a specific value to limit market share, but prefers that the IOUs be permitted the discretion to support a more diverse portfolio that maximizes value, which is a more fundamental concern over that of limiting market share, and such discretion is consistent with practices used in other solicitations.

22. Explain whether the Commission should maintain, revise, or eliminate the set aside of 20 percent for each utility of the total megawatts procured under the Auction Mechanism each year for residential aggregation.

PG&E believes that the residential set-aside should be eliminated because it is no longer necessary and results in inefficient bid selection. The Independent Evaluator for the DRAM RFO pilot solicitation was instructed to assess the effectiveness of the set-aside in attracting aggregations of residential customers,⁴¹ and concurs that the residential set-aside requirement may be skewing evaluation results.⁴² Also, as the Independent Evaluator in the 2018-2019 DRAM RFO stated in Advice 5109-E, the DRAM market has already consolidated to two major competitors, and there are fewer residential

⁴⁰ PG&E Advice 5284-E, Appendix D (Public), p. 25.

⁴¹ Resolution E-4728, p. 19.

⁴² PG&E Advice 5284-E, Appendix D (Public), p. 25. “The 20% residential set-aside requirement may also be skewing the evaluation results. First, there are fewer residential offers with each DRAM solicitation and fewer Offerors submitting residential offers. Residential offers are now generally priced higher than the non-residential offers. As a result, the utilities are being required to by-pass lower cost non-residential offers to take residential offers, which is resulting in an overall increase in costs. As we understand, DRAM suppliers from previous DRAM solicitations have had challenges securing an adequate level of residential customers relative to the level in the contracts awarded.”

participants submitting offers.⁴³ Further, the residential markets have been dominated by one DRP, so the set-aside essentially functions as a set-aside for a single DRP, which defeats its initial purpose to support new entrants in the residential sector.⁴⁴

23. Explain whether the Commission should maintain, replace or eliminate the simple average August bid price cap. If the Commission decides to replace the average August bid price cap, should the Commission adopt the Net Market Value cap as the replacement, as proposed by SDG&E,⁴⁵ based on the adjusted Long Run Avoided Cost of Generation described in the Pilot Evaluation?

The average August bid price cap requirement should be eliminated. PG&E believes that it was a complicated requirement to implement, and it distorted the bid selection process and market by incentivizing bidding behaviors that do not align with providing the best value to customers. In fact, the August bid price cap forced PG&E and SCE to skip better priced offers in favor of lower value offers (from a net market value per unit basis). The Independent Evaluator (IE) concurred that this was a negative trend.⁴⁶

PG&E is open to further discussing SDG&E's proposal to revise the net market value calculation to be based on the long run avoided cost of generation, which should generally be used for resources that have long-term value. However, to the extent that DRAM procures capacity in the short-term, bids should continue to be evaluated using short-term RA value until a determination is made by the Commission of DRAM's long-term goals and value, and such a proposal is premature at this time.

⁴³ PG&E AL 5109-E, filed June 30, 2017, Appendix D, page 38.

⁴⁴ Resolution E-4728, p. 19.

⁴⁵ SDG&E Response to August 6, 2018 Ruling, August 17, 2019 at 3.

⁴⁶ PG&E Advice 5284-E, Appendix D, p. 39.

Appendix A: Recapitulation of PG&E's Proposal for a Step One short-term DRAM Pilot

For readability, PG&E summarizes its recommended changes for a Step One short-term DRAM pilot, putting in one appendix and in chronological order various elements of its responses to the ALJ's questions.

If the Commission believes the future of DRAM should proceed, even without regard to procurement being tied to an explicit RA need, then PG&E recommends the Commission approve a DRAM pilot with a solicitation envisioned for 2019 for deliveries in 2020 that provides stakeholders with transparent information and data, and clear learnings and safeguards to ensure that DRAM resources have the ability and intent to respond to CAISO dispatches at the levels in the Seller's contract(s).

I. Recommended Changes at the Solicitation Stage of the Process:

- Procurement of PDR product for system RA¹ only, with offers being valued on RA value.
- Elimination of the August average capacity bid price criteria.
- Elimination of the residential set-aside.
- No prioritization of new entrants.
- Discretion for the IOUs to select a diverse portfolio that maximizes value.

II. By Approximately August 1, in Preparation of the IOUs' Year Ahead RA Showing for the Upcoming compliance year: DRAM resources are not required to be shown as supply side resources.

PG&E supports the Supply Side Working Group recommendation to waive the CPUC and CAISO regulatory requirements that DR resources need to be registered with the CAISO and have a resource ID and NQC at least 60 days prior to October 1 of the previous compliance year. In the year-ahead RA compliance filing, Energy Division would provide DRAM credits to IOUs based on the capacity approved by Energy Division.

III. If Applicable, 15 Calendar Days Before LSE Annual Supply Plan is Due (Typically October 31)²: DRP submits year-ahead supply plans.

- Seller must pay Buyer a replacement fee for any shortfall between the contracted capacity and the year-ahead supply plan (assessed at the time of invoicing) defined as:

$$\text{Replacement fee}_{\text{year-ahead supply plan shortfall}} = [\text{Contracted Capacity} - \text{QC}_{\text{year-ahead supply plan}}] * \text{Contract Price}$$

¹ Learnings and value from Local RA procurement would be limited when the RA year-ahead showing is missed.

² The timing of the pilot is not likely to allow for any DRAM capacity procured to be included in the year-ahead supply plan for 2020 deliveries.

- In addition to the replacement fee, PG&E proposes a QC penalty shortfall defined as:

$$\text{Penalty}_{\text{year-ahead QC shortfall}} = [\text{Contracted Capacity} - \text{QC}_{\text{year-ahead supply plan}}] * \text{Contract Price} * X_1$$

IV. 105 Calendar Days Before the First Delivery Month: New DRAM Sellers Must Clear DRP Registrations and System Integration Milestones (one-time requirement).

- DRP Registration and IOU Data System Integration Milestones
 - Execute the IOU DRP Service Agreement for DRPs enrolling IOUs’ bundled customers;
 - Complete the CPUC registration process for DRPs enrolling IOUs’ bundled customers;
 - Complete specific IOU required onboarding process for Rule 24;³
 - Complete the registration with specific IOU data sharing platform and complete all connectivity requirements;
 - Successfully obtain a Click-Through authorization and/or submit a pdf/paper CISR-DRP form for processing;
 - Successfully utilize online channels to obtain the full Rule 24/32 data set for a customer authorization.
- CAISO Registration Milestones
 - Register with the CAISO as a DRP and obtain a CAISO DRP ID;
 - Become a certified Scheduling Coordinator with the CAISO or contract with an existing certified Scheduling Coordinator (SC);
 - Review the CAISO’s Demand Response User Guide
- PG&E will trigger an event of default if any of these milestones are not met, with the following exceptions/cures:
 - Due to the actions or inactions of the Buyer or the CAISO
 - Under circumstance beyond Seller’s control, a satisfactory letter of explanation, with supporting documents, should be submitted to the Buyer. Both parties should negotiate, and potentially reach an agreement to waive the non-compliance, followed by the cure process.
 - Extensions of time may be permitted, with Buyer approval.

V. T-75 Calendar Days in Advance of the Delivery Month: DRP provides QC forecast to the Independent Monitor (IM) for a reasonableness assessment.

The goal with PG&E’s approach is to gain greater assurance that the QC is realistic and reliable for RA planning purposes.

- **Step 1:** DRP estimates the load reduction potential, based on historical data or testing, of each enrolled customer, which reasonableness is then assessed by the IM using appropriate criteria, including, but not limited to, those listed below:

³ For PG&E and SCE, the applicable rule is Rule 24, for SDG&E, it is Rule 32.

- DRP shall determine individual customers’ max⁴ and average monthly demand from the previous rolling 12 months during CAISO Availability Assessment Hours (AAH) and develop a realistic DR load drop profile.
- If applicable, DRP shall use results from DR events’ or tests’⁵ performance from prior rolling two years for individual customers, with seasonal adjustments, to reflect customers’ capability for load reduction during DR events.
- **Step 2:** DRP estimates the load reduction potential at the resource level, which the DRP enters as the QC in the Monthly Supply Plan. The reasonableness of the QC forecast is then assessed by the IM using appropriate criteria, including, but not limited to, the ones listed below:
 - Once the composition of the resource is done, it is the DRP’s responsibility to estimate the resource’s QC, considering the assessment of customers’ load reduction potential from Step 1. The DRP may also elect to test its resources in advance of this QC determination and use the resulting performance as an input to its QC forecast.
 - For each resource, the sum of customers’ max demand constitutes a not to exceed cap when determining the resource’s potential load reduction capabilities.
 - The information from steps 1 and 2 shall be provided to the IM as input to its assessment of reasonableness of the load reduction potential forecast at the resource level at least 75 days before the delivery month.
- **Additional requirement:** DRPs shall use a consistent baseline methodology between the determination of QC and DC, to allow for the creation of a consistent feedback loop between DC and QC. Buyer requires Seller to choose baseline that is approved by both the CPUC and CAISO (i.e., 10-in-10 only today).

VI. Between T-75 and T-61 in Advance of the Delivery Month: Independent Monitor rates the reasonableness of the DRP’s QC forecast (Step 3).

The IM will record all information from Steps 1 and 2, and the rationale provided by DRP for its QC determination and Supply Plan submission.

The IM will then rate, at least 61 days before the delivery month, the reasonableness of the QC for each resource that the DRP includes in its Supply Plan.⁶ The DRP ultimately determines the QC, but the IM’s rating shall be provided to the IOU at the time of the DRP’s Supply Plan submission.

⁴ The customer’s max demand should constitute a not to exceed cap which should be evaluated seasonally at minimum (i.e., summer is May to October and winter is November to April).

⁵ PG&E recommends an increase in the number of tests / dispatches required, so DRPs can create a data trail of their ability to reliably deliver per their forecasted QC, which MOO bidding only cannot provide.

⁶ PG&E recommends a red, amber, or green rating of the reasonableness of the QC forecast. Red is defined as unreasonable and unsubstantiated, amber defined as reasonable with caveats, and green is defined as reasonable.

If the QC value from the DRP deviates from IM's recommendation, the IM will document and track the DRP's decision for the purpose of assessing the DRP's ability to accurately forecast resource QC relative to the DC. This data point would be used as qualitative criterion for any potential future RFO solicitation.

VII. T-60 in Advance of the Delivery Month: Seller submits its Supply Plan to the Buyer and notifies the Buyer if there is a shortfall between the Year Ahead QC Supply Plan⁷ and the Month Ahead QC Supply Plan.

Seller pays Buyer a replacement fee and penalty for any shortfall (to be assessed at invoicing), defined as:

$$\text{Replacement fee}_{\text{month-ahead supply plan QC shortfall}} = [QC_{\text{year-ahead supply plan}} - QC_{\text{month-ahead supply plan}}]^8 * (\text{Contract Price})$$

$$\text{Penalty}_{\text{month-ahead QC shortfall}} = [QC_{\text{year-ahead supply plan}} - QC_{\text{month-ahead supply plan}}] * \text{Contract Price} * X_2^9$$

- An event of default would be triggered if the Seller provides two months of QC below 60% of the contract capacity, on average across all resources.

VIII. Between T- 30 and T: The CAISO may use the CAISO Procurement Mechanism (CPM) as a procurement backstop.

If the Seller fails to deliver any portion of the Contract Quantity of Product and such failure results in CAISO Capacity Procurement Mechanism costs imposed on the Buyer due to an insufficient monthly Resource Adequacy plan, PG&E proposes the Seller indemnify the Buyer from these costs less any damages already assessed by CAISO.

IX. Delivery Month: DRPs Demonstrate Capacity Using One of Three Methods

Dispatch	Test	MOO Bidding
Dispatch per CAISO instructions May only use results for DC if it is a full dispatch.	Once the DC performance of a prior month is calculated as below 60%, the DRP must re-test, and MOO bidding is not an option to demonstrate capacity.	MOO bidding is only an option in the months when full dispatch/ test is not required.

⁷ If no year-ahead supply plan is provided for a delivery month (due to RFO timeline), the contracted capacity will be used.

⁸ Year-ahead supply plan QC may not exceed the month-ahead supply plan QC due to timing of replacement capacity.

⁹ The multiplier for month-ahead QC shortfall penalty (X_2) is greater than the multiplier for year-ahead QC shortfall penalty (X_1) so that DRPs are incentivized to disclose QC shortfall as early as possible.

Partial dispatch still requires additional test at full QC amount. ¹⁰	<ul style="list-style-type: none"> • Bi-monthly testing / dispatch for DRPs to create a data trail of their ability to reliably deliver per their forecasted QC, which MOO bidding only cannot provide. • SubLAP Testing should be coincident of all resources within the same SubLAP.¹¹ • Hourly Impact: The DC based on dispatch and testing results should be assessed hourly, rather than the current use of the best performing hour, such that underperformance in one hour is penalized accordingly and not offset by over delivery in another hour.¹² • Baseline: Only the 10-in10 baseline should be used as it is the only CPUC and CAISO approved performance methodology. • Cap: DC is capped by month-ahead QC. <p>The DC testing should feedback into the future QC of the resource and supply plans.</p>	
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- PG&E proposes the following structure for DC Payment / Penalty, where:

$$\text{Unadjusted Hourly Capacity Payment} = \text{QC}_{\text{month-ahead supply plan}} * \text{Contract Price} \div (\text{total \# of hourly dispatched events})$$

Hourly Delivered Capacity Ratio	Payment	Penalty
≥ 0.75 and < 1.00	Adjusted Hourly Capacity Payment = Unadjusted Hourly Capacity Payment * Hourly Delivered Capacity Ratio	None
≥ 0.60 and < 0.75	Adjusted Hourly Capacity Payment = Unadjusted Hourly Capacity Payment * (.50)	None

¹⁰ Non-coincident tests may be reasonable if the IM can verify that there were no customer movements resulting in double-counting capacity.

¹¹ Non-coincident tests may be reasonable if the IM can verify that there were no customer movements between tests that may lead to double-counting capacity.

¹² For simplicity, ignore segments < 1 hour and marginal dispatches during the 2020 DRAM.

≥ 0 and < 0.60	None	Adjusted Hourly Capacity Penalty = Unadjusted Hourly Capacity Payment * (0.60 – Hourly Delivered Capacity Ratio)
< 0	None	Adjusted Hourly Capacity Penalty = Unadjusted Hourly Capacity Payment * (0.60)

$$\begin{aligned} \text{Total Monthly Capacity Payment/Penalty} = \\ \sum_{\text{for all hours of dispatch}} \text{Adjusted Hourly Capacity Payment} - \\ \sum_{\text{for all hours of dispatch}} \text{Adjusted Hourly Capacity Penalty} \end{aligned}$$

- DRAM Sellers continue to receive RAIM penalties assessed by the CAISO.
- PG&E will trigger an event of default if there are more than two months of DC testing is less than 90% of the QC, on average across all resources and dispatch hours.

X. 60 Days After the Last Day of the Delivery Month: Initial invoices are due

Revisions to the initial invoices are only permitted for late RQMD-based delays, with a list of affected customer provided to the Rule 24 team with invoice submission.

XI. At the time of Final Invoices: Replacement Fees and Penalties for QC and DC Shortfalls Are Assessed per the descriptions in sections (vii), (viii), and (ix).

XII. 75 Days After Delivery Month: The IM provides the Commission with a public monthly ILP-like public report on performance from DRP dispatches.¹³

XIII. Periodically After 6 Months of Data is Available: The IM reports how modifications are working.

PG&E recommends that there are evaluation reports every 6 months, depending of the length of the 2020 DRAM pilot.

XIV. Summary of all feedback mechanisms included in the steps above:

1. To inform its QC forecast, the DRAM Sellers will provide verifiable data on previous DC performance and other historical data (see Section V).
2. The IM assesses the reasonableness of the DRP's QC forecast. If the DRP's QC submission deviates from the IM's assessment, the DRP's decision will be documented and tracked by the IM for the purpose of assessing the DRP's ability to accurately forecast resource QC relative to the DC. This data point would be used as qualitative criterion for future RFO solicitation (see Section VI).

¹³ In contrast IOU ILP reports are due 21 days after the delivery month. Example of PG&E's ILP Reports: https://www.pge.com/en_US/large-business/save-energy-and-money/energy-management-programs/demand-response-programs/case-studies/case-studies.page

3. The performance of DRAM resources (using an ILP type assessment) is assessed and reported by the IM to the public on a monthly basis (see Section XII).
4. The assessment of how the modifications are working will be reported by the IM periodically after 6 months of data is available (see Section XIII).

XV. Other Provisions

- PG&E is opposed to contract reassignments.
- Clarification in the contract that this is secondary purpose – not a PG&E sponsored program, and that program design is fully in the control of the DRAM Seller