



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

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Application of Pacific Gas and Electric  
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And Related Matters.

A.17-01-012  
(Filed January 17, 2017)

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**RESPONSE OF OHMCONNECT, INC. TO ADMINISTRATIVE LAW JUDGE'S  
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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March 29, 2019

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Pursuant to the Commission's Rules of Practice and Procedure, OhmConnect, Inc. (OhmConnect) respectfully submits this timely response to Administrative Law Judge (ALJ) Hymes's *Administrative Law Judge's 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* ("Ruling"), mailed February 28, 2019 in the above-captioned proceeding.

**I. INTRODUCTION**

OhmConnect appreciates the opportunity to respond to the questions posed in the Ruling regarding the future design of the Demand Response Auction Mechanism (DRAM). The first four DRAM auctions procured a combined 715 MW of third-party Demand Response (DR)<sup>1</sup> and the DRAM is a critical tool for meeting the Commission principle that DR "shall be market-driven leading to a competitive, technology-neutral, open-market in California with a preference for services provided by third-parties through performance-based contracts at competitively

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<sup>1</sup> See January 4, 2019 "Energy Division's Evaluation of Demand Response Auction Mechanism Final Report" ("DRAM Final Report"), at p. 20.

determined prices.”<sup>2</sup> Therefore, it is critical that the Commission, with the assistance of the parties to this proceeding, help advance this principle by considering how to improve the mechanism while maintaining market certainty and continuity. While we address each question in depth, below, our comments broadly support the following key points:

1. The Commission should adopt the two-step approach described in Question 1, below, thereby ensuring the continuity of the DRAM marketplace while giving stakeholders additional time to vet the more complex recommendations and proposals put forward by parties following the publication of the Energy Division’s Final DRAM Evaluation.
2. The proposed July 11, 2019 Decision should target a set of improvements to the DRAM design that do not require the Investor-Owned Utilities (IOUs) to file Advice Letters seeking Commission approval of changes to the contract language.
3. The July 11 Decision should consider adopting: (i) a refined methodology for calculating monthly Demonstrated Capacity in the case of CAISO test or dispatch; (ii) a payment structure in cases where Supply Plan Capacity differs from Contract Capacity and/or Demonstrated Capacity differs from Supply Plan Capacity; and (iii) a Service Level Agreement (SLA) to ensure reliable and consistent data.
4. The July 11 Decision should outline an expedited solicitation schedule that would enable procurement for a full year of 2020 delivery.
5. The Commission should adopt a process to implement annual incremental improvements to the DRAM.

## II. RESPONSE 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.*

OhmConnect supports the two-step approach proposed by the Commission. Step 1 facilitates a 2019 “bridge” auction for DRAM deliveries beginning in January 2020—thus

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<sup>2</sup> See September 29, 2016 Decision (D.) 16-09-056 “Decision Adopting Guidance for Future Demand Response Portfolios and Modifying Decision 14-12-024,” Ordering Paragraphs (OPs) 7-8, at pp. 97-98.

providing a degree of market continuity and clarity—by limiting the set of changes to those that can feasibly be implemented in the intervening period of time. Given the short amount of time between the proposed date of adoption of a final decision (July 11, 2019) and the date by which an auction for a full year of 2020 DRAM deliveries would need to be completed (no later than October 31, 2019), we strongly suggest limiting the scope of Step 1 improvements to those that would obviate the need for an Advice Letter process to implement changes (e.g. revised contract language).

Step 2 allows for further modification while giving stakeholders time to work collaboratively to address the more complex policy questions. While OhmConnect agrees that these questions are important, they do not need to be addressed immediately to ensure a successful DRAM auction in 2019 for 2020 delivery.

To align the “continuous and iterative improvements to the mechanism” proposed here with the language in Question 6 below (which solicits proposals for addressing the remaining questions regarding the DRAM in order to ensure a completion of the record by August 30, 2019) we propose that Step 1 comprise two sub-steps:

- Step 1a (*July Decision*): Improvements that are feasible to implement via a Commission Decision. These would facilitate a 2019 DRAM auction (for deliveries beginning in January 2020).
  - Step 1b (*December Decision*): Improvements that require additional time and, potentially, a follow-on Advice Letter process to implement. These improvements would take effect for a 2020 DRAM auction (with deliveries beginning in January 2021).
  - Step 2: An annual process, analogous to the Commission’s process for refining the Resource Adequacy (RA) program, to prioritize issues and implement “continuous and iterative improvements to the mechanism”. This would take effect for deliveries beginning in 2022 and initiate several additional annual Commission Decisions.
- 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.)**

Given the short timeline and the need for market certainty expressed by OhmConnect and other DRAM participants, the set of priority issues to be resolved through the July 2019

Commission Decision should be limited to those that are feasible to implement ahead of a 2019 solicitation for a full year of 2020 deliveries. We believe the following three improvements fit this criterion:

1. Methodology for calculating monthly Demonstrated Capacity in the case of CAISO test or dispatch;
2. Payment structure in cases where: (a) Supply Plan Capacity differs from Contract Capacity; or (b) Demonstrated Capacity differs from Supply Plan Capacity; and
3. Service Level Agreement (SLA) to ensure reliable and consistent data.

We discuss these issues in greater detail in the responses to Questions 15, 13, and 17, respectively.

**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?***

OhmConnect recommends authorizing up to \$40 million for 2020 DRAM deliveries. This relatively modest boost from the current year's authorized budget—calculated using the average year-to-year budget increase during the DRAM I-IV Pilots—would demonstrate a commitment to growing the market for third-party DR and signal to current and potential market participants that it is worthwhile investing in demand response in California.

Consistent with previous DRAM procurements, the budget authorized for the bridge period should be higher than previous auctions. DRAM is still small based on several existing indicators. One such indicator is the one gigawatt ceiling for total DRAM procurement included in D.16-09-056.<sup>3</sup> At approximately 370 MW of annual capacity procured,<sup>4</sup> the current DRAM marketplace is less than 40 percent of this ceiling, indicating both its small size and its room for growth. Furthermore, the DRAM is also just a fraction of the size and budget of the IOUs' Supply Side DR programs. For the 2019 delivery year, the DRAM awarded capacity and authorized budget represent one-quarter of the capacity and 15 percent of the budget of all IOU programs, respectively.<sup>5</sup> Stagnating the program's budget at current levels could run counter to

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<sup>3</sup> See D.16-09-056, OP 12, at pp. 99-100.

<sup>4</sup> See January 4, 2019 DRAM Final Report, at p. 20.

<sup>5</sup> See PG&E AL 5109-E, PG&E AL 5284-E, SCE AL 3629-E, SCE AL 3797-E, SDG&E AL 3095-E, SDG&E AL 3218-E for DRAM figures; Decision 17-12-003, at pp. 9, 11-14 and Attachment 3, December 14, 2017 for IOU Supply Side Demand Response Programs.

the Commission’s objective of growing DRAM to “become a primary means of sourcing demand response in the future”.<sup>6</sup>

At the very least, the bridge period budget should be *no lower* than the budget authorized for 2019 deliveries—\$27 million (370 MW) across all three IOUs. Reducing the DRAM budget, even if only for one year, would signal that California is not consistently committed to growing DR. Furthermore, a smaller or non-existent DRAM would risk stranding the tens of thousands of customers who have been engaged through the Auction Mechanism, and possibly turn them away from demand response in general. Finally, a limited procurement would widen the gap between IOU DR programs and third-party DR, as the IOU programs would provide the only alternative option for many customer classes.

- 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.**

OhmConnect continues to believe that it is both preferable and possible to implement an accelerated schedule for a 2019 auction that would allow deliveries during all months of 2020, even with a shorter timeline relative to previous DRAM solicitations.

In OhmConnect’s estimation, a full-year auction is the only scenario where third-party demand response can provide Local RA in 2020. Local RA is a critical and growing product procured in the DRAM, representing 18.5 percent of all capacity procured through the DRAM over the four years of the pilot, and approximately one-third of total procurement over the last two auctions (deliveries in 2018 and 2019).<sup>7</sup> Moreover, the October 27, 2017 Commission Decision requiring a DRAM auction in 2018 ordered the IOUs to “appropriately prioritize bids for local resource adequacy”,<sup>8</sup> based on findings from a Lawrence Berkeley National Laboratory

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<sup>6</sup> See D.16-09-056, at p. 61.

<sup>7</sup> See January 4, 2019 DRAM Final Report, at p. 22.

<sup>8</sup> See October 26, 2017 D.17-10-017 “Decision Adopting Steps for Implementing the Competitive Neutrality Cost Causation Principle, Requiring an Auction in 2018 for the Demand Response Auction Mechanism, and Establishing a Working Group for the Creation of New Models of Demand Response,” OP 10, at p. 90.

study that identified “a higher future value for traditional load shed demand response as local capacity rather than as system capacity”.<sup>9</sup>

Each load serving entity (LSE) must demonstrate that it has procured 100 percent of its Local RA needs in its year-ahead filings. These year-ahead filings are due October 31, and thus a solicitation schedule that pushes contract signing further into the fall would, in all likelihood, render it impossible for a LSE to put Local RA from DRAM resources on its year-ahead supply plan.

In order to maintain delivery of Local RA procured in the DRAM, OhmConnect proposes four scenarios for a bridge period solicitation timeline, in order of preference:

- ***Scenario 1:*** Advice Letter process for CPUC contract approval only
- ***Scenario 2:*** Solicitation without an Advice Letter process for either contract language revision or contract approval
- ***Scenario 3:*** Advice Letter process for contract language revisions only
- ***Scenario 4:*** Advice Letter process for contract language revisions and contract approval by the CPUC

OhmConnect believes that Scenario 4 would only be possible if the July 11, 2019 Decision were to be moved up to an earlier Commission Voting Meeting, such as the meeting scheduled for June 13, 2019. Even then, the Advice Letter protest period would have to be shortened significantly and the solicitation schedule would be substantially compressed.

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<sup>9</sup> See D.17-10-017, at p. 51-52. This cites the Lawrence Berkeley National Laboratory 2025 California Demand Response Potential Study, available at <http://eta-publications.lbl.gov/sites/default/files/lbnl-2001113.pdf>.

**Table 1. Scenarios for a 2019 DRAM Solicitation Schedule (days from previous step)**

	<u>(Scenario 1) AL for contract approval <u>only</u></u>	<u>(Scenario 2) Without AL process</u>	<u>(Scenario 3) AL for contract revisions <u>only</u></u>	<u>(Scenario 4) AL for contract revisions &amp; approval</u>
Final Decision	07/11/2019	07/11/2019	07/11/2019	06/13/2019
IOUs file (Tier 1) AL seeking Commission approval of DRAM contract refinements			07/18/2019 (7)	06/24/2019 (11)
Protests to AL due			08/07/2019 (20)	06/28/2019 (4)*
IOU response to protests due			08/12/2019 (5)	07/05/2019 (7)
ED disposition of AL			08/19/2019 (7)	07/12/2019 (7)
Launch DRAM auction	07/18/2019 (7)	07/25/2019 (14)	08/26/2019 (7)	07/18/2019 (6)
Deadline for bid submissions	07/29/2019 (11)	08/08/2019 (14)	09/05/2019 (10)	07/29/2019 (11)
IOUs notify shortlisted bidders of selection	08/19/2019 (21)	09/02/2019 (32)	09/19/2019 (14)	08/12/2019 (14)
Deadline for signed contracts from selected bidders	08/26/2019 (7)	09/16/2019 (14)	09/24/2019 (5)	08/22/2019 (10)
IOUs file (Tier 1) AL seeking Commission approval of DRAM contracts	09/05/2019 (10)			09/02/2019 (11)
Protests to AL due	09/25/2019 (20)			09/23/2019 (21)
IOU response to protests due	09/30/2019 (5)			09/30/2019 (5)
ED disposition of AL	10/07/2019 (7)			10/07/2019 (7)
Year-ahead RA supply plan	10/31/2019	10/31/2019	10/31/2019	10/31/2019

\*The Advice Letter protest period would have to be shortened in this scenario.

**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.**

OhmConnect supports an expedited schedule for the purpose of facilitating an auction in 2019 for deliveries during all 12 months of 2020, including, if necessary, the waiving of the Advice Letter process to implement changes to the DRAM contract language. However, we recommend retaining the Commission-specific review and approval of executed DRAM contracts to the extent possible.

We also favor adopting a more streamlined process for DRAM procurement going forward. We observe that the IOUs' annual solicitations for generic RA provide one such procurement model. However, maintaining some form of Commission review may be prudent insofar as there are significant year-to-year changes to the auction design and/or contract language.

**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.**

OhmConnect appreciates and supports moving quickly to make the desired improvements to the Auction Mechanism. We believe this can best be accomplished through stakeholder interaction and iteration (e.g. a working group process), bolstered by informal proposal development. The latter would take place between Working Group meetings and the proposal submission deadline. Below, we suggest a timeline to develop a record on a next set of critical issues by August 30, 2019 such that a Final Decision can be adopted by December 19, 2019.

We recognize that significant new issues might arise and that all parties must be committed to an adaptive management program for “continuous and iterative improvements to the mechanism”. Therefore, we approach this question and the subsequent proposed timeline (Table 2) as an effort to resolve a next batch of key issues (Step 1b)—following the adoption of a first set of improvements (Step 1a) through the Final Decision adopted July 11, 2019. We propose a timeline and process to make annual iterative improvements to the DRAM (Step 2) in question 7, below.

**Table 2. Major milestones for additional DRAM Improvements in 2019 (Step 1)**

[Final Decision on Step 1a issues Adopted]	[07/11/2019]
Workshop to Prioritize Step 1b Issues	06/12/2019
Ruling Identifying Issues and Creating WGs	06/20/2019
First Working Group Meeting	06/27/2019
Second Working Group Meeting	07/18/2019
Working Group Proposals Due	08/30/2019
Comments on Working Group Proposals	09/19/2019
Replies to Comments on Working Group Proposals	09/24/2019
Proposed Decision Issued	10/30/2019
Comments on Proposed Decision Due	11/13/2019
Reply Comments Due	11/20/2019
Final Decision Adopted	12/19/2019

**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?**

As detailed above, OhmConnect believes that the most critical and time-sensitive set of improvements to the Auction Mechanism should be adopted in: Step 1*a* for 2020 deliveries, through the Final Decision approved on July 11, 2019; and Step 1*b* for deliveries in 2021, through a Final Decision approved on December 19, 2019.

However, we also anticipate that a handful of new issues, further improvements, and more complex policy questions will not be resolved in Step 1*a* or Step 1*b*. We suggest that these residual issues, improvements, and questions encompass “Step 2” of the proposed two-step approach and be resolved through a third Decision, issued in mid-2020.<sup>10</sup> Specifically, this Decision could:

1. Address all remaining issue areas, proposals and recommendations not prioritized for action in 2019;

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<sup>10</sup> This Decision would only be applicable in the case that the Commission authorizes additional DRAM procurements – for example, an opportunity of 5-6 years, as recommended by the Energy Division.

2. Adopt any fundamental changes to the DRAM, if warranted through stakeholder input (e.g. inclusion of an energy component); and/or
3. Approve a process for future iterative improvements to the Auction Mechanism.

An annual process and timeline for future improvements to the DRAM could draw from aspects of the Commission's annual Resource Adequacy proceeding, where a scoping memo and workshops are used to set priorities, vet proposals, and inform a Proposed Decision. A proposed timeline is included in Table 3. Contingent on the DRAM transitioning to a permanent procurement mechanism, the Commission could adopt a review cadence more similar to the current approval cycle for IOU DR programs and budgets.

**Table 3. Major milestones for continuous improvements to the DRAM (Step 2)**

Milestone	Date
ALJ Scoping Memo	November 2020
Comments on Scoping Memo Due	December 2020
Workshop on Proposed Improvements	December 2020
Reply Comments on Scoping Memo Due	January 2020
Proposed Decision Issued	March 2020
Comments and Replies Due	March 2020
Final Decision Adopted	April 2020
IOUs submit Advice Letters (if needed)	May 2020
Commission Approves AL	June 2020
Launch DRAM auction	June 2020

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.*

OhmConnect appreciates the effort of stakeholders in the February workshop to develop a set of draft goals for the DRAM. Our proposed goal for the DRAM draws on many of the key components reflected in the post-workshop options:

*“To provide a stable and continuous opportunity for the competitive procurement of standardized products and services from reliable demand response resources, consistent with the needs of the grid.”*

Of the options presented in Table 1 of the ALJ Ruling, “a”<sup>11</sup> lacks specificity while “b” and “c”<sup>12</sup> address an energy component, which the Commission has not yet adopted for the DRAM. Options “d” through “f”<sup>13</sup> do begin to get at the goal of the mechanism as it is currently designed. We have taken select language from these options—including references to competitive procurement of reliable DR and consistency with the grid need—and added a mention of market stability to arrive at what we believe to be a more succinct and streamlined version, proposed above.

**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.***

The objectives adopted by the Commission for the DRAM should a) *guide the future* of the procurement mechanism b) be related to the procurement mechanism, not Seller programs, and c) be *directly tied back to the goal*. Many of the objectives outlined in Table 2 of the ALJ Ruling do not meet these criteria.<sup>14</sup>

With respect to the objectives listed for comment, OhmConnect has three points. First, we note that objectives and performance metrics are very different and serve different purposes. Objectives are forward-looking and guide design and implementation of the initiative in question. Performance metrics are often backward looking and measure results. Many of the

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<sup>11</sup> See February 28, 2019 “Administrative Law Judge’s Ruling Directing Responses to Questions Resulting From the February 11-12, 2019 Demand Response Auction Mechanism Workshop and Comments on Proposals to Improve he Mechanism” (“ALJ Ruling”), Table 1, at p. 5: “(a) to grow resources that meet grid needs while ensuring value to the customer.”

<sup>12</sup> See ALJ Ruling, Table 1, at p. 5: “(b) to represent a percentage of resource adequacy procurement to cost-effectively provide for reliable carbon-reduction that also provides market certainty to third-party demand response providers”; and “(c) to cost-effectively (in terms of least-cost, best-fit procurement) displace flexible gas-fired resources by providing flexible resources to meet grid needs through a market-based, fungible, standardized product.”

<sup>13</sup> See ALJ Ruling, Table 1, at p. 5: “(d) to use a cost-competitive mechanism to procure reliable demand response to meet grid needs and grow demand response”; “(e) to drive the growth of third-party standardized, fungible, reliable demand response products that benefit the grid through the wholesale market where the benefits exceed the costs”; and “(f) to enable third-party providers to compete to provide integrated grid services that meet grid needs where benefits are greater than costs.”

<sup>14</sup> See ALJ Ruling, Table 2, at p. 6.

performance-related “objectives” listed in Table 2 (e.g. “d”, “e”, “g”) are important, but they are performance targets, not true objectives, and should be measured in the process of monitoring and evaluation (discussed in our response to Question 20, below).

Second, DRAM is currently a procurement mechanism, not a program, and DRAM Buyers are purchasing capacity, not customers. As phrased, objectives “b” and “f” refer to customers in DRAM Seller programs, not the procurement mechanism itself.

Third, because the Commission has not adopted energy delivery as a goal for DRAM resources, objective “h” is premature, as emissions reduced is a factor of the *energy* delivered. However, recognizing that DRAM can be an important tool to meet California’s clean energy and climate goals, we do support and propose an environmental objective below for consideration.

Focusing on the three facets described above (forward-looking, mechanism-related, and goal-oriented), OhmConnect proposes the following objectives for the DRAM:

**1. Healthy Marketplace**

- a. *Market size*: DRAM represents at least 50 percent of Commission-jurisdictional DR capacity by 2025
- b. *Market depth/diversity*: The number of Sellers receiving awards doubles by 2025

**2. Level Playing Field**

- a. *Customer access*: IOU and third-party programs have equal and non-preferential access to customers (for example, the actions necessary for customers to enroll in DR are similar for IOUs and third parties)
- b. *Data access*: DRP data access fully meets the metrics outlined in a Service Level Agreement (an example is provided in Appendix D)

**3. Environmental Impact**

- a. *Decarbonization*: Power sector emissions are reduced by X percent annually due to auction mechanism resources by 2025

Finally, OhmConnect supports the principles of DRAM as outlined in the Ruling.

**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.***

OhmConnect supports authorization of the two-step approach because it addresses both the urgency of action to ensure market continuity as well as the need for short- and long-term improvements to boost the performance of DRAM resources and address a number of data and integration problems that have added inefficiency and uncertainty to Seller operations. Declining to continue the DRAM is not supported by the Final DRAM Evaluation and could cause irreparable damage to the fledgling market for third-party demand response in California.

***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.***

OhmConnect supports adopting a supplemental process to verify the Qualifying Capacity of DRAM resources as reported on Sellers' monthly Supply Plans. Specifically, we propose an ex ante "plausibility demonstration" that compares the historical aggregate load of a DRP's customer base against its DRAM Contract Capacity, further detailed in Appendix A. This proposal is the simplest means of cross-checking Supply Plan Capacity in the near term. While we ultimately support allowing DRPs to choose from among several options for substantiating their Supply Plan Capacity (including, perhaps, a simplified implementation of the Load Impact Protocols), we are concerned that developing multiple ex ante options is infeasible ahead of the 2020 delivery year.

***12. Explain whether the Commission should adopt an energy component requirement for 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.***

OhmConnect believes that introducing an energy component as a requirement for resources procured via the DRAM is an important matter to consider. However, this proposal is a complex policy issue that warrants more stakeholder vetting than can realistically be achieved in the comments and replies to this Ruling. On the one hand, such a requirement would better align the Commission's goals for demand response from DRAM resources with those of the IOUs'

tariffed demand response programs, and better position DRAM to meet the State's decarbonization objectives. On the other hand, it would significantly complicate bid valuation and introduce further costs and complexities into Buyer and Seller operations that may not be justified vis-à-vis the benefits to the grid and the environment. We suggest that this not be a priority for resolution ahead of the July 11 or December 19 Decisions. Rather, we propose that it be taken up as part of "Step 2".

- 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.**

OhmConnect supports the adoption of a reasonable payment structure that adjusts a Seller's capacity payment downward to reflect shortfalls in Supply Plan Capacity and Demonstrated Capacity. Currently, the DRAM pro forma contract lacks specificity regarding the consequences to the Seller should its (1) ex ante Supply Plan Capacity fall below its Contract Capacity, or (2) ex post Demonstrated Capacity be less than its Supply Plan Capacity. In particular, it is presently unclear at what point either type of underperformance would constitute an event of contract default.

As part of the February 2019 Working Group process in this proceeding, OhmConnect put forward three proposals to better define the payment structure for DRAM contracts and clearly define the conditions for contract default:

1. Payment adjustment in case of Supply Plan Capacity below Contract Capacity
2. Payment adjustment in case of Demonstrated Capacity below Supply Plan Capacity
  - a. *Version 1*: Payment structure that does not punish modest under-delivery of Supply Plan Capacity
  - b. *Version 2*: Payment structure that rewards modest over-delivery of Supply Plan Capacity

These proposals are described in greater detail in Appendix B.

- 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.**

OhmConnect does not believe that over-performance by a DRAM resource should be *incentivized*, per se. However, over-performance by a DRAM resource should be *compensated* (at least to a degree) if under-performance is also penalized, especially if the resource's performance is inherently probabilistic (e.g. because of weather sensitivity). In Appendix B, we present two alternative payment structures that address the asymmetric treatment of under-versus over-performance in the current DRAM contract.

**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.**

Demonstrated Capacity should reflect, as accurately as possible, the performance of the DRP's portfolio that is supplying DRAM capacity during the delivery month. Presently, the Demonstrated Capacity construct utilizes CAISO Resource-level performance for invoicing purposes. This focus on CAISO Resources, however, creates a mismatch in granularity: DRAM contract capacity changes (at greatest frequency) on a monthly basis, whereas the customer composition of a CAISO Resource may change on as frequent as a daily basis.

The potential for changing CAISO Resource composition within a delivery month has led several parties to express concern that certain customers dispatched or tested as part of a third-party DRP's program could be either double-counted or not counted at all within the end-of-month DRAM invoice.<sup>15</sup> But, just as important, the flexibility of changing the CAISO Resource (up to) daily is *by design*. As OhmConnect stated ahead of the February DRAM workshops,<sup>16</sup> there are many reasons a DRP may need to change the customer composition of its CAISO Resources, including the customer changing LSE, the customer moving or otherwise canceling an existent authorization, the customer disenrolling from the DRP's program, or the customer newly enrolling in the DRP's program. To maintain the necessary flexibility provided by CAISO to promote Resource composition accuracy while ensuring that all customers are counted once and only once, OhmConnect proposes an optional method to calculate Demonstrated Capacity

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<sup>15</sup> See January 11, 2019 party responses to ALJ Hymes's January 4, 2019 "Administrative Law Judge's Ruling Issuing Evaluation Report of the Demand Response Auction Mechanism Pilot, Noticing January 16, 2019 Workshop, and Denying Motion to Require Audit Reports in the Evaluation Report," such as CLECA's Comments, at p. 2, Olivine's Comments, at p. 2, and PG&E's Response, at Attachment A.

<sup>16</sup> See February 6, 2019 "Attachment B - All Proposals for Subtopic 1.4," at p. 8.

based on customers' aggregated *individual* performance during CAISO dispatch or test events. Not only does this approach mimic that of the Base Interruptible Program (BIP) and the Capacity Bidding Program (CBP) (i.e. by calculating performance at the individual customer level rather than the aggregation level<sup>17</sup>), the approach also leverages the stakeholder-vetted and FERC-approved existing CAISO baselines.

Under OhmConnect's proposal, a DRP's monthly Demonstrated Capacity would be calculated according to the following steps:

1. For each hour of the month that some or all of the DRP's CAISO Resources were dispatched/tested, calculate the performance, using one of the ESDER Phase 2 baseline methodologies approved by FERC, of each *individual customer* dispatched/tested as part of the Resource(s).
2. Prorate each instance of individual customer performance in Step 1 proportional to the number of days during the month that the customer had status of "Active" in the CAISO's Demand Response Registration System (DRRS). For example, if a customer was Active in DRRS for only 15 of the 30 days in April (e.g. because she enrolled with the DRP midway through the month), adjust her performance during each event downward by 50%.
3. For each hour of the month that some or all of the DRP's CAISO Resources were dispatched/tested, sum the prorated individual customer performance values in Step 2. Identify the hour with the largest aggregated performance value, and retain the aggregated performance value for this hour.
4. Repeat the aggregation described in Step 3, but exclude those customers whose individual performances were already counted in a prior iteration (to ensure no customer dispatched/tested during the month is counted more than once).
5. Repeat Step 4 until no customers remain (to ensure no customer dispatched/tested during the month goes uncounted). Sum the aggregate performance values retained at each iteration to yield total monthly Demonstrated Capacity.

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<sup>17</sup> For example, if a customer enrolled in BIP fails to meet its Firm Service Level, that individual customer is re-tested, instead of the entire portfolio (see [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_SCHEDULE\\_E-BIP.pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHEDULE_E-BIP.pdf)). Similarly, CBP capacity payments are calculated using "the sum of the baselines for each individual SA in the Capacity Nominations" (see [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_SCHEDULE\\_E-CBP.pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_SCHEDULE_E-CBP.pdf)).

Appendix C presents a simple example of this methodology, as well as the generalized mathematical formulation.

The above method for calculating monthly Demonstrated Capacity is preferable to the status quo because it ensures each customer is counted once and only once, with performance appropriately weighted to reflect the total time the customer was actually Active in CAISO during the month. The method above is also preferable to simultaneous dispatch/testing of CAISO Resources because the latter merely represents a snapshot of performance during a particular hour on a particular date. Simultaneous dispatch/testing may not capture the expected contribution of customers enrolled in a DRP's program over the course of the month—for example, a test at the beginning of the month of a Resource may include customers who leave the program during the month, and exclude customers who join the program later in the month. However, these concerns may not apply to DRPs whose portfolios of customers are more static. Therefore, OhmConnect also believes that a DRP should be allowed to elect for simultaneous testing if that is indeed the preference for its portfolio.

To be clear, our proposed methodology would be one option available to DRPs. Discussions during the DRAM workshop suggest that there may be at least four different types of DRP customer bases: (1) non-residential; (2) fully-automated residential; (3) residential with automated and behavioral components; and (4) battery storage. We do not believe the Commission should try to find a single methodology for calculating Demonstrated Capacity because it may not be possible to accurately reflect the capability of each kind of customer base with just one methodology.

Finally, the frequency with which Demonstrated Capacity must be based on either CAISO dispatch or testing should strike a reasonable balance between measuring the current capability of the portfolio and minimizing customer attrition. To this end, we concur with the proposal by the Joint DR Parties to retain the current requirement that Demonstrated Capacity be based twice per year on CAISO test or dispatch events.<sup>18</sup>

**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.**

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<sup>18</sup> See February 6, 2019 “Attachment B - All Proposals for Subtopic 1.4,” at p. 6.

The Commission should allow contracts to be partitioned for reassignment because this is likely to grow the overall supply of Demand Response. As OhmConnect noted in its Working Group proposal,<sup>19</sup> presently, a DRP at risk of default must either reassign its entire contract or default on the contract altogether. In either case, whatever portion of the contract capacity the DRP is capable of providing will vanish. Alternately, with partitioning, the DRP could retain that portion of the contract capacity it is able to deliver while transferring the remainder to another DRP (i.e. one with surplus capacity and/or customers).

Parties in the DRAM workshop raised several concerns about partial reassignment. First, parties determined that the partial reassignment must occur prior to the 60-day Supply Plan filing deadline; otherwise the Supply Plan submitted by the partitioning DRP could be invalidated. This is a reasonable consideration and constraint to include on reassigned contracts. Second, the IOUs claimed that partitioning contracts would be administratively burdensome. However, it is not clear the level of burden this process might inflict upon the IOU administrators, and whether that outweighs the benefit of ensuring available capacity is not lost. In addition, combining contracts for the same RA product into a single contract (e.g. with a capacity-weighted monthly price) would help mitigate the overall administrative burden. Third, some parties argued that DRPs at risk of default should simply partner with another DRP. This form of arrangement is also severely limiting—for example, the management of CISR–DRP agreements may create significant overhead for both the DRPs *and* the IOU. Furthermore, the Seller would continue to assume the liability, which may not resolve the underlying issue of vanishing capacity, as the risk of default remains with the original contract holder. Fourth, parties in the workshop stated concerns that partitioning contracts will increase market concentration. This is not an unequivocal fact, and ultimately depends on whether either counterparty holds significant market share.

Concern was also raised that the ability to partition contracts would encourage DRAM participants to bid at levels they are not capable of delivering. However, to partition a contract, the DRP must have a willing counterparty. Thus, the DRP is highly disincentivized to bid unrealistically, because the contract resulting from its bid may not be attractive to other potential DRAM participants. Additionally, the Commission could require certain conditions to be met before partitioning is allowed to further dis-incentivize aggressive but unrealistic bidding

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<sup>19</sup> See February 6, 2019 “Attachment C - All Proposals for Subtopic 2.1,” at pp. 8-12.

behavior. For example, the DRP could be required to demonstrate it is in danger of default (presuming the conditions of default are clearly defined). The DRP could also be required to show a willing counterparty, where that counterparty is already a registered DRP at the CPUC. Finally, in an effort to limit continuous partitions, the Commission could require that contracts be partitioned no more than a certain number of times.

The February workshops also contemplated whether the Commission should set deadlines for invoicing. OhmConnect believes that an invoice deadline is reasonable. However, this deadline to submit invoices should be based on the date by which all RQMD within that month for the customer authorizations has been delivered to the DRP.

**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.**

OhmConnect believes it is imperative that the Commission address the inconsistent delivery of data by the IOUs (acting as the Meter Data Management Agents, or MDMAs) to DRPs participating in the DRAM. Failure to deliver timely and accurate RQMD can result in a host of consequences borne by the DRPs, including the imposition of CAISO penalties, the inability to calculate resource performance (a challenge that is further exacerbated if the data is needed to determine CAISO test performance), and delays to invoicing. The DRAM evaluation correctly notes that the only present remedy is for the affected DRP to file a formal complaint, and that “[t]he time and effort required to file a formal complaint may be prohibitive for many DRPs”.<sup>20</sup> Any resolution process that takes longer than one month could detrimentally impact a DRP’s ability to function; furthermore, using this process for every single data delay is likely to be incredibly administratively burdensome, given the existing number of Rule 24/32 Approved Locations exceeds 100,000 across the three IOUs.<sup>21</sup>

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<sup>20</sup> See January 4, 2019 DRAM Final Report, at p. 119.

<sup>21</sup> As of December 2018, 59,267 Approved Locations in PG&E (available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M274/K173/274173151.PDF>); 32,473 Approved Locations in SCE (available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M274/K178/274178760.PDF>); and 16,027 Approved Locations in SDG&E (available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M277/K012/277012635.PDF>).

OhmConnect believes there should be protections for DRPs participating in DRAM regarding the provision of *all* data supplied under Rule 24/32. In Resolution E-4868, the Commission set the expectation that the existing Rule 24/32 data set (i.e. the “expanded data set”) “provides data to third-party demand response providers that is needed for (1) direct participation integration into the CAISO wholesale market, (2) essential Demand Response Provider business practices, and (3) providing a successful customer experience.”<sup>22</sup> The data needed to meet this expectation stretches beyond just RQMD. For OhmConnect’s customer base, the greatest cause of customer dissatisfaction is when even preliminary performance (based on either RAW data or RQMD) cannot be calculated within the typical 48-hour timeframe. The second greatest cause of dissatisfaction is when the customer is unable to enroll promptly. Enrollment is enabled through the non-interval Rule 24/32 data, and therefore when incorrect data, or no data at all, is received, this causes customer angst and goes against the expectation to provide customers with a “successful customer experience”.

OhmConnect’s proposed solution, first shared in the DRAM Working Group and attached in Appendix D, is to append a Service Level Agreement (SLA) to the existing DRAM contract. A SLA is an industry-standard mechanism that is used to define the commitment on the level of service between a service provider and a client, thereby providing a level of protection to both parties. A SLA typically has three pieces to ensure effectiveness: (1) the *target* (e.g. the desired service level); (2) the *notification* (e.g. the communication plan if service is interrupted); and (3) the *penalty* (e.g. the penalties for failing to meet targets). As we stated in our original proposal, in the case of Rule 24/32 the IOUs provide multiple services related to data, including data transfer, data access, and customer authorization. Therefore, for purposes of the DRAM, the SLA should consider, at a minimum, targets related to data transmission, data availability, authorization availability, and data accuracy.

OhmConnect supports streamlining communication by developing a consistent process, across all three IOUs, whereby IOUs and DRPs can inform each other when data elements are missing. However, OhmConnect does not believe that, in general, the onus must be on the DRP to inform the IOU acting as the MDMA of missing data. The MDMA is responsible for sending the data, and should know if the data has been provided or not.

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<sup>22</sup> See August 25, 2017 Resolution E-4868, Finding of Fact 43, at p. 92.

**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.**

OhmConnect supports the approval of reasonable implementation milestones for DRPs, provided that these remain objective and easily measurable. Most of the milestones proposed by the IOUs in Working Group 2 fit these criteria, specifically the ones related to DRP registration at the CPUC, IOU data system integration and CAISO registration. However, many of the milestones proposed under “RA Commitment” are either not objective or are otherwise problematic. These include:

- Confirmation to Buyer that the Seller obtained at least 50% of customer authorizations required to meet the capacity requirement (*not objective*)
- Confirmation to Buyer that the Seller has registered at least 50% of customers required to meet the capacity requirement (*not objective*)
- Confirmation to Buyer that the Seller obtained 100% of customer authorizations required to meet the capacity requirement (*not objective*)
- Confirmation to Buyer that the Seller has registered 100% of customers required to meet the capacity requirement (*not objective*)
- Resource IDs to be provided in the year-ahead supply plans (*not easily measurable; a DRP cannot register all of its customers a year ahead of time. This issue has been thoroughly described by the Joint DR Parties.<sup>23</sup>*)
- The result of the capacity test, if applicable, should be provided to the Buyer 90 days prior to the first day of the first showing month (*related to the ex ante methodologies and requirements, which have not yet been adopted by the Commission*)

**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.**

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<sup>23</sup> See February 6, 2019 “DRAM Working Group 2 - Working Group Sub-Topic #3 – Implementation Milestones (2.4) and Performance Reports (2.5),” at p. 3.

Theoretically, OhmConnect does not oppose a requirement that each DRP submit regular performance reports. However, it is unclear what such reports would include, what purpose they would serve, and who the recipients would be.

We do not believe that the IOUs' public Monthly IL and DR Programs Report provides a good template for third-party DRPs, largely because a majority of the relevant information is proprietary. Stripped of confidential information, such a report would be of little use.

Ideally, all third-party performance information would be obtained by the Energy Division through the existing CAISO subpoena process. However, if errors are discovered in the data, as was the case for the DRAM Evaluation,<sup>24</sup> we generally support direct data provision by the DRP—at least in the short-term until the CAISO information pathway is improved. Because of this, we do not oppose confidentially sharing select data with Energy Division Staff, who can then anonymize and aggregate it into a public summary report, made available at some regular interval (e.g., annually). This would assist with monitoring and evaluation and help inform incremental improvements to the Auction Mechanism.

## ***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?***

OhmConnect supports creating a process to monitor and evaluate the Auction Mechanism. As one possible path forward, the Energy Division could issue, via the relevant Service List(s), concise annual summaries that review key DRAM market characteristics and performance metrics. These summaries would use aggregated and anonymized data, utilizing data collected via CAISO, and support monitoring efforts and design improvements for the duration of the Auction Mechanism. An additional formal evaluation could take place at the end of the authorized extension period, with extreme care taken to ensure that the evaluation is completed well in advance of a final decision on the DRAM.

With respect to high-level principles, the monitoring and evaluation process should be:

- Transparent (data collected outside of the formal evaluation process should not be considered or included)
- Fully independent (if performed by a third-party outside of the Energy Division, the entity should be vetted and approved by Parties)

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<sup>24</sup> See January 4, 2019 DRAM Final Report, at pp. 81-82.

- Open to stakeholder input
- Inclusive of metrics directly related to the adopted goal for the DRAM only

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

OhmConnect strongly opposes setting an artificial and arbitrary cap on a DRAM participant's market share.

*First, it would solve a problem that has not been established in the record.* Neither the Commission nor advocates of a market share cap have convincingly articulated whether and why market concentration is a problem. In fact, Energy Division noted in the final DRAM evaluation report: “It is not clear whether, or to what extent, the market concentration itself is a problem.”<sup>25</sup> Concerns related to market concentration must be discussed by stakeholders and established in the record prior to the consideration of a limit on market share.

*Second, it could increase prices.* A market share cap could result in the bypassing of more economic bids in order to limit award size, thereby increasing DRAM procurement costs. Given its access to historical DRAM bid and award data, we suggest the Energy Division test the possible impact of a market share restriction on prices by re-running the DRAM I to IV auctions under the presence of some “X” percentage cap. The results of this exercise, if introduced into the record, would be instructive for all DRAM stakeholders as they debate a market share limit moving forward.

*Third, it could unfairly punish customers of large DRAM Sellers.* Large Sellers achieved their market positions by being comparatively low cost. They have subsequently invested heavily in recruiting customers to fulfill these positions. It is unclear what would happen to these surplus customers if a Seller’s market position was capped arbitrarily. The DRAM evaluation report highlighted new customer engagement as an unequivocal success of the DRAM Pilot.<sup>26</sup> The Commission risks losing those customers from DRAM and demand response entirely if they are required to disenroll from their chosen DRP.

*Finally, if customer choice is the real concern, a DRAM market share cap would not address the problem.* Thus far, market concentration has been discussed in terms of the DRAM only. But DRAM is still very small compared to demand response in California more broadly.

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<sup>25</sup> See January 4, 2019 DRAM Final Report, at p. 90.

<sup>26</sup> See January 4, 2019 DRAM Final Report, at p. 47.

Insofar as the Commission seeks to determine whether its goal of “increasing customer choice”<sup>27</sup> is being hindered, it is arguably more important to look at the entire market for demand response, including DRAM and IOU DR programs. That would provide a more accurate measure of the extent to which market concentration is hindering customer choice.

If the Commission seeks to diversify DRAM participation in order to address “the CPUC’s stated goals of increasing customer choice and creating a competitive market”<sup>28</sup>—both worthwhile objectives—the vastly more efficient and effective way to do this is by providing regulatory certainty and market continuity, lowering barriers to entry (e.g., reducing large collateral requirements) and continuing to resolve the myriad data and integration problems that have dissuaded DRPs from either entering the DRAM market or forced them to prematurely exit the DRAM in the past.

**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.**

OhmConnect favors the establishment of a robust and efficient market for third-party demand response. As such, we recognize and are sympathetic to the rationale behind the recommendation to remove the residential set-aside. However, if the goal of this recommendation is to achieve greater efficiencies and reduce prices, we find it counterproductive to eliminate the residential set-aside while, at the same time, introducing a cap on market share, something that could reduce efficiency and increase prices.

OhmConnect supports the elimination of the 20 percent set-aside as long as it represents a true step toward market efficiency and is not substituted by another market distortion—an artificial cap on market share.

**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, based on the adjusted Long Run Avoided Cost of Generation described in the Pilot Evaluation?**

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<sup>27</sup> See January 4, 2019 DRAM Final Report, at p. 90, citing D. 16-09-056, at pp. 46 and 49.

<sup>28</sup> See January 4, 2019 DRAM Final Report, at p. 90, citing D. 16-09-056, at pp. 46, 49 and 51.

OhmConnect concurs with the widespread Party sentiment at the February workshops that the Commission should eliminate the average August bid price cap. Whether a replacement is needed, and what such a replacement should look like, deserves additional stakeholder review.

We have not received sufficient information in the record to comment on the SDG&E proposal for a Net Market Value cap at this time. OhmConnect and other parties would benefit from a presentation by SDG&E of its proposal and an opportunity to ask questions. We suggest the Commission dedicate time for this discussion ahead of the decision it aims to approve toward the end of this year.

### **III. CONCLUSION**

OhmConnect appreciates the opportunity to contribute to the future design of the DRAM. We reiterate that facilitating market certainty and continuity should remain a top priority of the Commission as it proceeds to adopt improvements to the Auction Mechanism. We support the continuation of the stakeholder process to prioritize, refine, and adopt proposals to strengthen the DRAM and look forward to working with the parties toward resolution of the issue areas identified in the Final DRAM Evaluation and the February Workshops.

Respectfully submitted,

March 29, 2019

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## **APPENDICES**

Appendix A: Proposal for a Plausibility Demonstration of Ex Ante Supply

Appendix B: Proposed Payment Structure for DRAM Contracts

Appendix C: Proposal for Calculating Demonstrated Capacity

Appendix D: Proposed Service Level Agreement (SLA)

## **Appendix A: Proposal for a Plausibility Demonstration of Ex Ante Supply**

OhmConnect proposes that the DRP employ a simple and historically consistent (i.e., based on historic load data) approach to demonstrate that the supply submitted to the IOU 60 days ahead of the showing month is equaled or surpassed by the anticipated load of the DRP's customer base. To be clear: we do *not* suggest that this be a new method for establishing NQC; for the time being, NQC will continue to reflect Contract Capacity. Instead, the proposed methodology would serve as an ex ante "plausibility demonstration" meant to give the IOU added confidence that the DRAM capacity quantities it is including in its RA Plans to the CAISO are indeed reasonable.

### ***Description of Methodology***

For each delivery month, the DRP would calculate the anticipated Sub-LAP level<sup>29</sup> customer load in the following way:

1. *Calculate the per-customer load.*
  - a. Identify the actual metered load of all customers currently registered in the CAISO Demand Response Registration System (DRRS) during each of the Must Offer Obligation (MOO) hours during the same calendar month of each of the two prior years, excluding the hourly intervals during which a user received a CAISO dispatch or test.
  - b. For each MOO hour, non-holiday weekday of the month, and year, sum the observed customer load and divide by the number of customers for which there is usage data during that hourly interval. This will produce approximately 200 observations of per-customer load (5 hours x ~20 non-holiday weekdays x 2 years). Table A-1 demonstrates this visually.
2. *Scale the per-customer load by projected enrollment.*
  - a. Multiply the per-customer load by the total number of customers expected to be active in DRRS during the delivery month.
3. *Add back avoided distribution losses.*
  - a. Scale up the projected per-customer load by the avoided distribution losses. In the case of customers connected to the IOU's distribution system at "Secondary" voltage, this would entail an increase of approximately 5 percent.<sup>30</sup>
4. *Determine the expected aggregate load.*

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<sup>29</sup> The DRP would retain discretion over the assignment of aggregate Sub-LAP supply to individual CAISO Resource IDs, provided that the Resource-level supply remains at or below the Resource's Net Qualifying Capacity (NQC) as set in the CAISO systems.

<sup>30</sup> Distribution Loss Factors (DLFs) are available on each IOU's website. For PG&E, the DLFs are accessible at <http://mads.pge.com/dlf>; for SCE, the 2019 DLFs are accessible at <https://www1.sce.com/NRC/ESP/DLF/Yearly/YTD2019.DLF>; and for SDG&E, the 2019 DLFs are accessible at <http://www2.sdge.com/EIC/dlf/f2019.dlf>.

- a. From the distribution of the 200 observations, identify the median. This value will serve as the anticipated aggregate customer load.

In order to demonstrate plausibility, the anticipated load of a DRP's customer base (from Step 4) would need to match or exceed the capacity submitted to the IOU in the 60-day-ahead Supply Plan.

*Table A-1. Proposed Observations for Ex Ante Plausibility Check for May 2020*

	2018					2019				
	1-May	2-May	3-May	...	x-May	1-May	2-May	3-May	...	x-May
<b>Hour 18</b>	Obs	Obs	Obs	...	Obs	Obs	Obs	Obs	...	Obs
<b>Hour 19</b>	Obs	Obs	Obs	...	Obs	Obs	Obs	Obs	...	Obs
<b>Hour 20</b>	Obs	Obs	Obs	...	Obs	Obs	Obs	Obs	...	Obs
<b>Hour 21</b>	Obs	Obs	Obs	...	Obs	Obs	Obs	Obs	...	Obs
<b>Hour 22</b>	Obs	Obs	Obs	...	Obs	Obs	Obs	Obs	...	Obs

*Obs = Observation; ~200 observations total*

## **Appendix B: Proposed Payment Structure for DRAM Contracts**

### ***Proposed Payment structure in case of Supply Plan Capacity below Contract Capacity***

In cases where the Seller's monthly Supply Plan Capacity is determined to be less than 100 percent of its Contract Capacity (e.g. on account of the plausibility demonstration in Appendix A), we propose that the Seller forfeit the contract revenue associated with the deficient contract quantity. For example, if Contract Capacity is 5 MW for the month of August, but the Seller's Supply Plan Capacity is determined to be only 3 MW (e.g. using the methodology from Appendix A), the IOU is not obligated to pay the Seller for the 2 MW of August capacity for which the Seller is deficient.

Furthermore, in cases where Supply Plan Capacity is less than 50 percent of Contract Capacity *for two consecutive months*, we propose the IOU be permitted (but not obligated) to put the Seller's contract in default – provided the deficiency is not demonstrably the result of the actions or inactions of either the IOU or the CAISO.

### ***Proposed Payment Structure in case of Demonstrated Capacity below Supply Plan Capacity***

We propose two alternative payment structures for monthly Demonstrated Capacity, each of which is intended to address the asymmetric treatment of under- versus over-delivery of Supply Plan Capacity in the current DRAM contract. Each proposal calculates, as a function of Demonstrated Capacity ("DC") and Supply Plan Capacity ("SPC"), an Adjustment Factor ("AF") that is applied to the Seller's monthly capacity payment. Letting "P" denote the monthly contract capacity price, the Seller's adjusted monthly capacity payment for each proposal is equal to AF x P x SPC.

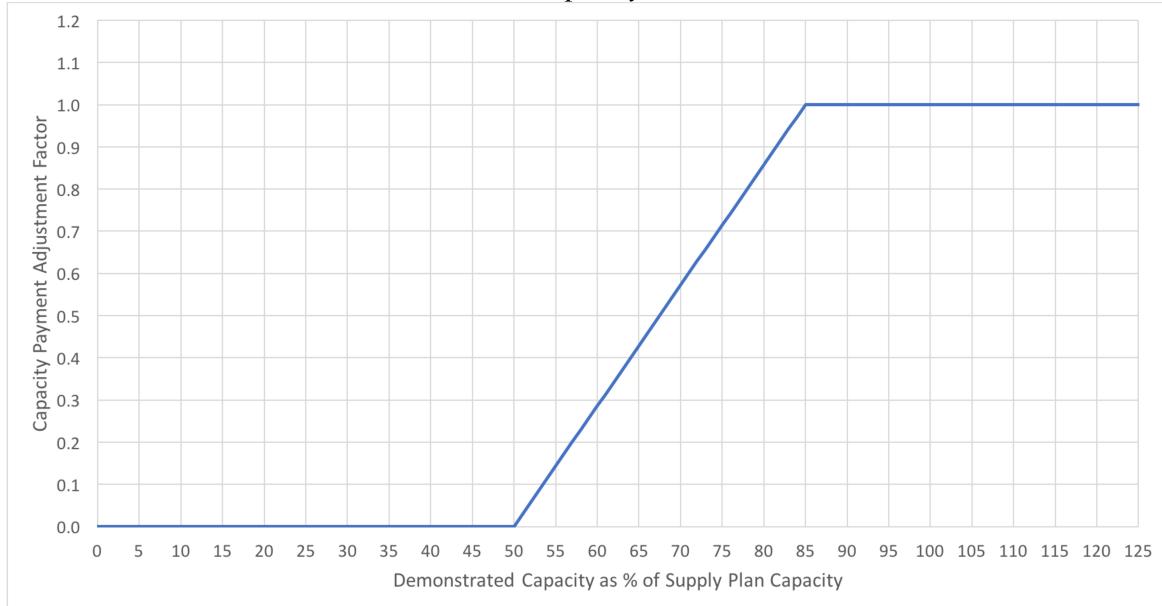
#### **First Proposal**

We propose the contract penalize only Demonstrated Capacity that is *substantially below* Supply Plan Capacity and not Demonstrated Capacity that is modestly below Supply Plan Capacity. The performance of a DR resource is influenced by a number of factors that, taken together, generate a probability distribution, such that it is reasonable not to punish modest under-delivery of a DRAM Seller's monthly Supply Plan Capacity.

An example of what could be a sensible payment structure is presented in Figure B-1. In this example, the Adjustment Factor applied to the Seller's monthly capacity payment is 1.0 as long as Demonstrated Capacity is at least 85 percent of Supply Plan Capacity. If Demonstrated Capacity falls below this threshold, the AF decreases proportionally. Demonstrated Capacity that is less than 50 percent of Supply Plan Capacity results in the Seller forfeiting its monthly payment altogether, and two consecutive months of such underperformance would be grounds for the IOU to terminate the Seller's contract.

Importantly, and regardless of the specific penalty thresholds adopted by the Commission, we suggest the inclusion of some form of weather-related tolerance. For example, if the expected summer conditions (e.g., 1-in-2 weather conditions) do not materialize in a month that a DRP is required to test/dispatch, it could be justifiable to relax the underperformance thresholds.

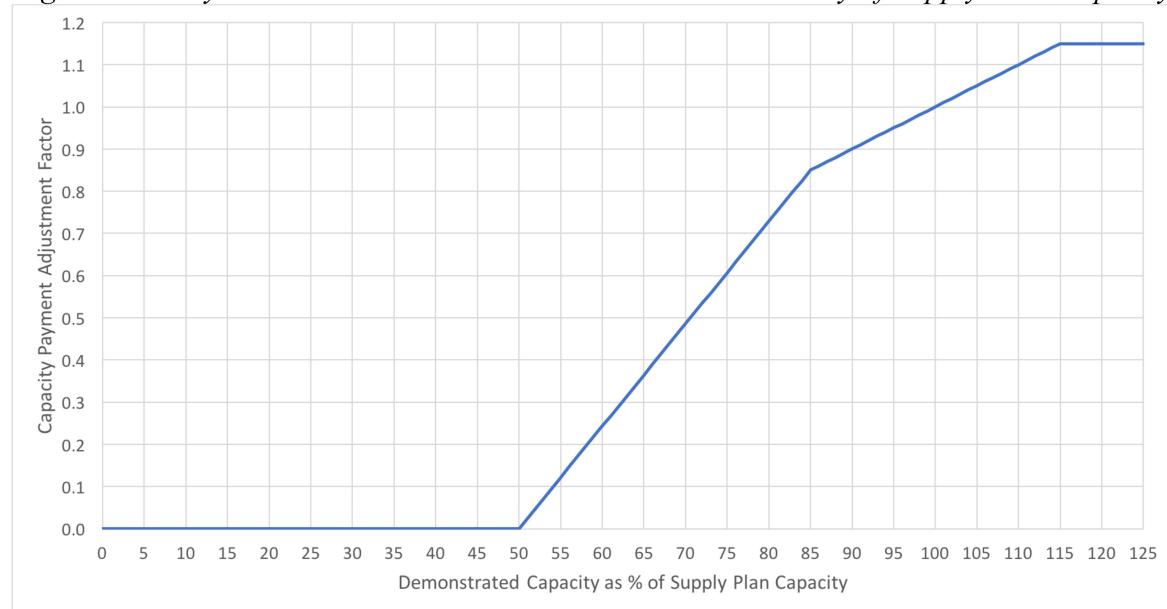
*Figure B-1. Payment structure that does not penalize modest under-delivery of Supply Plan Capacity*



### Second Proposal

The first proposal appropriately does not punish modest under-delivery. However, if the longer-term stakeholder process does not yield an *ex ante* methodology that bases future QC on past performance, there may be a perverse incentive to perform at under 100 percent. To mitigate this incentive, our alternate second proposal rewards Demonstrated Capacity in excess of Supply Plan Capacity (up to some limit), while continuing to penalize any instance of Demonstrated Capacity less than Supply Plan Capacity (as is the current practice). An example of this incentive structure is presented in Figure B-2. In this example, under- and over-performance are penalized and rewarded symmetrically within a 15-percent tolerance band around Supply Plan Capacity. Over-delivery above the tolerance band does not result in increased reward. Meanwhile, under-delivery below the tolerance band results in increased penalty (in the form of capacity payment withheld at an increased rate). Finally, Demonstrated Capacity that is less than 50 percent of Supply Plan Capacity results in the Seller forfeiting its monthly payment altogether, and two consecutive months of such underperformance would be grounds for the IOU to terminate the Seller's contract.

*Figure B-2. Payment structure that rewards modest over-delivery of Supply Plan Capacity*



## **Appendix C: Proposal for Calculating Demonstrated Capacity**

**Goal:** Optional methodology to Demonstrate Capacity while ensuring that customer performance is counted once and only once.

**Summary:** OhmConnect's Demonstrated Capacity proposal calculates total portfolio performance using a series of aggregated (by SLAP) individual customer performance, with prorated adjustments to customer performance based on length of time each customer was enrolled in CAISO during the month.

**Process Steps:** The following steps are done by SLAP. This design is for two reasons, ultimately to maximize simultaneity. First, the DRP determines customer allocation across Resources at the SLAP-level (i.e. a CAISO Resource cannot contain customers situated in different SLAPs). Second, the CAISO market prices that Demand Response Resources face are determined at the SLAP-level.

For a given month, and by SLAP, DRPs would undergo the following in order to Demonstrate Capacity:

1. The DRP identifies all Resources that were included on the Monthly Supply Plan.
2. The DRP identifies, by Resource, each hourly interval where the Resource was dispatched in the CAISO market (i.e. the “Dispatch Intervals”).
3. The DRP identifies all customers that were enrolled in a CAISO Resource Registration for at least one day.
4. The DRP determines, based on Steps 1, 2, and 3, by customer, the hourly intervals where the customer was registered in a CAISO Resource and that CAISO Resource received a dispatch (i.e. the “Customer Dispatch Interval”).
5. For each hourly Customer Dispatch Interval, the DRP calculates the customer’s individual performance. Performance is calculated by subtracting the actual customer load during that hour from the customer’s baseline. The customer’s baseline is calculated using the existing CAISO methodology as developed in ESDER 2 and approved by FERC (excluding the Control Group methodology, due to the potential inability to pass the required validation checks). Specifically, by customer class, the available baselines would be as follows:
  - a. Residential: 5-in-10; Weather-Matching
  - b. Non-Residential: 10-in-10; Weather-Matching
6. For each customer individual performance calculated in Step 5, the DRP prorates performance commensurate with the percentage of days the customer was enrolled and registered with one of the Resources identified in Step 1. For example, if a customer was calculated to have provided 1 kWh of demand reduction, and was registered in a resource for 15 out of the 30 days in the month, the adjusted customer performance (i.e. “Effective Customer Performance”) for that event would be 0.5 kWh ( $1 \text{ kWh} \times 15/30 \text{ days}$ ).
7. The DRP aggregates by Dispatch Interval each Effective Customer Performance for that interval. The sum for each Dispatch Interval is the “Aggregate Interval Performance”.
8. The DRP identifies the maximum Aggregate Interval Performance, and all customers underlying that interval (i.e. the customers for which that interval was a Customer Dispatch Interval).

9. The DRP records the maximum Aggregate Interval Performance found in Step 8.
10. The DRP repeats Steps 7 through 9 with all residual customers that were not identified in Step 8 (or any previous iterations of Step 8) as underlying the Aggregate Interval Performance. The DRP repeats these steps until there are no residual customers.
11. The DRP aggregates each Aggregate Interval Performance recorded in Step 9 to calculate the Total Performance for the month. This Total Performance is treated as the Demonstrated Capacity for the SLAP.

Once Demonstrated Capacity (from Step 11) is calculated, the DRP invoices the Demonstrated Capacity. If the DRP has submitted a Monthly Supply Plan with multiple Resources belonging to the given SLAP, the DRP should proportionally allocate the Demonstrated Capacity across the Resources based on the System, Local, or Flexible RA assigned to each Resource. This can be done using the following steps:

1. Using the corresponding monthly Supply Plan, the DRP identifies, across all contracts, each Resource and the MW allocation by Resource (i.e. the “Resource Supply Plan Capacity”) that the Resource is to provide for the month for the given SLAP.
2. The DRP sums the total Resource Supply Plan Capacity across all contracts for the month. This is the “Total SLAP Supply Plan Capacity”.
3. For each Resource in the SLAP, the DRP divides the Resource Supply Plan Capacity by the Total SLAP Supply Plan Capacity. This value informs the proportion of Supply Plan Capacity that is provided by that specific Resource, on a SLAP-level.
4. The proportion calculated in Step 3 is multiplied by the Demonstrated Capacity. The product of these two provides the proportional Resource-level performance, which can then be used to Demonstrate Capacity on the monthly invoice.

### ***Mathematical Formulation:***

#### ***Assumptions:***

- Calculation is done monthly at the SLAP-level, for each SLAP for which the Seller included CAISO Resource IDs on its DRAM Supply Plan
- Customer-specific performance during a CAISO dispatch event is calculated using one of the ESDER Phase 2 baseline methodologies approved by FERC
- In the calculation of SLAP-level monthly Demonstrated Capacity, each customer dispatched by the CAISO during the month will be counted once and only once
- Customers Active in CAISO DRRS for less than the entirety of the month will have their DR performance prorated

#### ***Notation:***

- $I_0$  denotes the set of customers who were “Active” in CAISO DRRS for at least one day during the month
- $i \in I_0$  denotes an individual customer
- $t \in \{1, 2, \dots, T\}$  denotes a day within the month, with  $T$  equal to the total number of days in the month (e.g. 30)
- $A(i, t) = 1$  if customer  $i$  was “Active” in CAISO DRRS on day  $t$ ; = 0 otherwise
- $h \in \{1, 2, 3, 4, 5\}$  denotes a CAISO RA Availability Assessment Hour (e.g.  $h = 1$  for HE 17,  $h = 2$  for HE 18, etc.)
- $D(i, t, h) = 1$  if customer  $i$  had a CAISO dispatch on day  $t$  during hour  $h$ ; = 0 otherwise

- $P(i, t, h) \geq 0$  is the kWh DR performance (i.e. baseline minus actual usage) of customer  $i$  on day  $t$  during hour  $h$ 
  - Assume by convention that  $P(i, t, h) = 0$  if  $D(i, t, h) = 0$  (because, technically,  $P(i, t, h)$  is undefined when  $D(i, t, h) = 0$ )
- $w(i) = \frac{1}{T} \sum_{t=1}^T A(i, t)$  is the proration factor applied to customer  $i$ 's DR performance
- $X \setminus Y$  denotes the “difference” between the two sets  $X$  and  $Y$ , such that  $X \setminus Y = \{x : x \in X, x \notin Y\}$

**Process:**

Monthly Demonstrated Capacity is calculated through an iterative process, whereby at each iteration: (1) the day and hour of greatest coincident (i.e. aggregated) customer-specific DR performance are identified; (2) the value of coincident customer-specific DR performance for the day and hour in 1 is retained; and (3) the customers included in the value in 2 are excluded from all subsequent iterations. The process continues until all customers have been counted once and only once, at which point the values of coincident customer-specific DR performance retained at each iteration are summed to produce total monthly Demonstrated Capacity.

1<sup>st</sup> iteration:

- Optimization problem:  $\max_{t,h} \sum_{i \in I_0} w(i) \cdot P(i, t, h)$
- Solution:  $(t_1^*, h_1^*)$
- Set of customers counted in solution:  $I_1 = \{i \in I_0 : D(i, t_1^*, h_1^*) = 1\}$
- Coincident DR performance:  $P_1^* = \sum_{i \in I_1} w(i) \cdot P(i, t_1^*, h_1^*)$

2<sup>nd</sup> iteration:

- Optimization problem:  $\max_{t,h} \sum_{i \in I_0 \setminus I_1} w(i) \cdot P(i, t, h)$
- Solution:  $(t_2^*, h_2^*)$
- Set of customers counted in solution:  $I_2 = \{i \in I_0 \setminus I_1 : D(i, t_2^*, h_2^*) = 1\}$
- Coincident DR performance:  $P_2^* = \sum_{i \in I_2} w(i) \cdot P(i, t_2^*, h_2^*)$

...

N<sup>th</sup> iteration:

- Optimization problem:  $\max_{t,h} \sum_{i \in I_0 \setminus I_1 \setminus \dots \setminus I_{N-1}} w(i) \cdot P(i, t, h)$
- Solution:  $(t_N^*, h_N^*)$
- Set of customers counted in solution:  $I_N = \{i \in I_0 \setminus I_1 \setminus \dots \setminus I_{N-1} : D(i, t_N^*, h_N^*) = 1\}$
- Coincident DR performance:  $P_N^* = \sum_{i \in I_N} w(i) \cdot P(i, t_N^*, h_N^*)$

The N<sup>th</sup> iteration is the final iteration if:  $I_0 \setminus I_1 \setminus \dots \setminus I_N = \emptyset$

(Equivalently, if:  $I_1 \cup I_2 \cup \dots \cup I_N = I_0$ )

Finally, total monthly Demonstrated Capacity is calculated as:  $DC = \sum_{j=1}^N P_j^*$

**Example:**

Using the steps from “Process Steps” above, we illustrate below an example of how to apply this methodology. However, for this example and for simplicity’s sake, we treat each day as having a maximum of one hourly event per day. Consider a set of 8 customers that all belong to given SLAP. Each customer was enrolled for at least one day in a Resource belonging to the given SLAP (i.e. Active in DRRS), denoted in Figures C-1, C-2, C-3, and C-4 by the blue shading. Furthermore, the CAISO Resources were dispatched on Days 5, 14, and 28, denoted by the red box.

Figure C-1 below illustrates Steps 1 through 5. Steps 1 and 2 are the red boxes; Step 3 is the list of customers; Step 4 is the blue box shading; Step 5 is the number within the red box. Note that Customers 1, 2, and 5 are the only customers Active for the entire month – the remaining customers are active for a percentage of days, calculated in the right-most column.

Figure C-1.

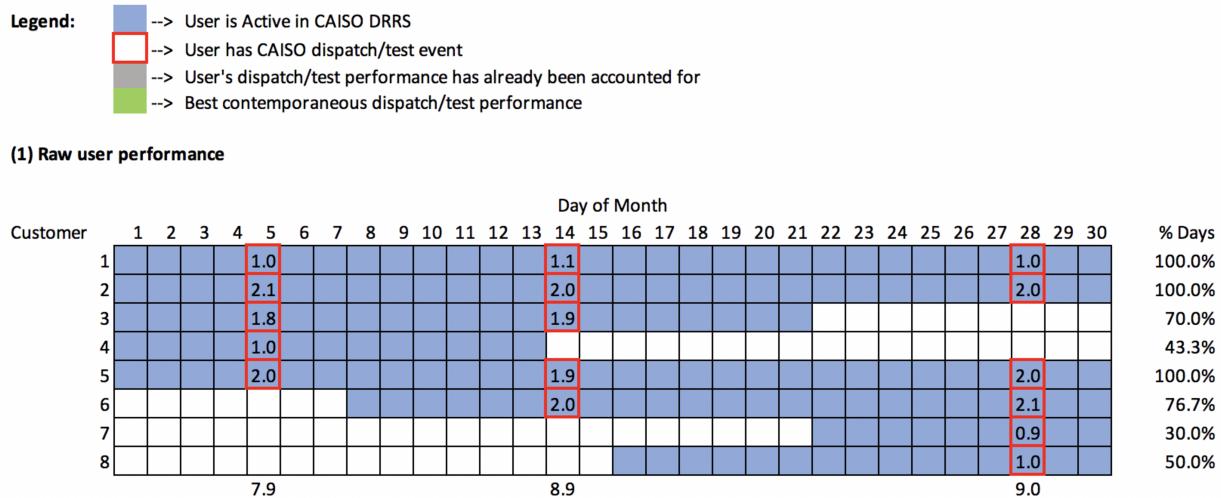


Figure C-2.

**(2) Weighted user performance -- 1st iteration**

Customer	Day of Month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
1				1.0										1.1														1.0				
2					2.1										1.9														2.0			
3					1.3										1.3																	
4					0.4																											
5					2.0										1.9														2.0			
6															1.5															1.6		
7																													0.3			
8																													0.5			

In Figure C-3, illustrating Step 10, the DRP now removes the customers that were already included in the Aggregate Interval Performance from Figure C-2. The residual customers are Customers 4, 7, and 8. The removed customers are denoted with a gray box replacing the blue box. The DRP then repeats the same analysis using Effective Customer Performance to add up Aggregate Interval Performance. In this instance, Day 28 has the higher Aggregate Interval Performance (0.8 kWh), with Customers 7 and 8.

Figure C-3.

**(3) Weighted user performance -- 2nd iteration**

Customer	Day of Month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1																															
2																															
3																															
4					0.4																										
5																															
6																															
7																												0.3			
8																												0.5		0.8	

In Figure C-4, the analysis is repeated one more time, as per Step 10. Here, there is only one residual customer, Customer 4, who provided 0.4 kWh on Day 5.

*Figure C-4.*

#### (4) Weighted user performance -- 3rd iteration

Finally, for Step 11, the DRP adds up all Aggregate Interval Performances, for a total portfolio performance (by SLAP) of 9 kWh (or 8.97 kWh, unrounded). Therefore, the DRP would report a Demonstrated Capacity across the SLAP of 9 kWh.

To apply the Demonstrated Capacity by Resource on the Monthly Invoices, the DRP will determine the RA that was assigned to each Resource within the given SLAP on the Monthly Supply Plan. Suppose for this example the DRP had two Resources, Resource 1 and Resource 2, that each had RA capacity allocated on the Supply Plans. Specifically, Resource 1 was allocated 4 kW of capacity, and Resource 2 was allocated 5 kW of capacity. The Total SLAP Supply Plan Capacity is therefore 9 kW between the two resources.

For Resource 1, the proportion of Supply Plan Capacity is 4/9; for Resource 2, the proportion of Supply Plan Capacity is 5/9. Resource 1 would then claim on the Monthly Invoice 4 kW ( $4/9 * 4$  kWh) and Resource 2 would claim on the Monthly Invoice 5 kW ( $5/9 * 5$  kWh).

## **Appendix D: Proposed Service Level Agreement (SLA)**

This Service Level Agreement (“SLA”) for the Meter Data Management Agent (MDMA) is in addition to Rule 24/32 and related Rulings and Decisions. This SLA applies to the MDMA services for collecting, maintaining and sharing customer smart meter data with Demand Response Providers (DRPs).

### ***Definitions***

- “*Applicable Monthly Period*” means the calendar month in which the Service is measured.
- “*Customer Portal*” means the web interface (including access via a mobile device), provided by MDMA, through which customers may access and manage the Service.
- “*Incident*” means (i) any single event, or (ii) any set of events, that result in Downtime.
- “*Penalty*” means the financial penalty imposed for not meeting Service Level requirements.
- “*Scheduled Downtime*” means periods of Downtime related to network, hardware, or Service maintenance or upgrades. To qualify as scheduled Downtime, MDMA must publish notice or notify DRP at least five (5) days prior to the commencement of such Downtime.
- “*Service Infrastructure*” means the authentication, computing, and storage resources that MDMA provides in connection with the Service.
- “*Service*” means the maintenance, access and processing of customer smart meter data by the MDMA as required by Rule 24/32.
- “*Service Level*” means the performance metric(s) set forth in this SLA that MDMA is required to meet in the delivery of the Service.
- “*Support Window*” refers to the period of time during which a Service feature or compatibility with a separate product or service is supported.

### ***Requirements***

- 1) The MDMA will be required to maintain system availability for consumers to authorize data access for DRPs through the OAuth click-through process.

Downtime: Any period of time when end users (i.e. customers) are unable to log in to their online account with the MDMA. Any period of time when end users are not able to authorize data access.

“Monthly Uptime Percentage” is calculated using the following formula:

$$\frac{\text{Maximum Available Minutes} - \text{Downtime}}{\text{Maximum Available Minutes}} \times 100$$

Service Level Penalties:

Monthly Uptime Percentage	Penalty
< 99.95%	\$
< 99%	\$

- 2) The MDMA will be required to maintain system availability for DRPs to access customer Smart Meter data. Service availability will be measured by total uptime and by the number of successful API requests.

Downtime: Any period of time when DRP is unable to access MDMA systems to update customer data records.

“Monthly Uptime Percentage” is calculated using the following formula:

$$\frac{\text{Maximum Available Minutes} - \text{Downtime}}{\text{Maximum Available Minutes}} \times 100$$

Service Level Penalties:

Monthly Uptime Percentage	Penalty
< 99.95%	\$
< 99%	\$

“Total API Requests” is the total number of requests made by the DRP to the MDMA API Endpoint in a month.

$$\frac{\text{Total API Requests} - \text{Failed API Requests}}{\text{Total API Requests}} \times 100$$

Service Level Penalties:

Data Delivery	Penalty
< 99.95%	\$
< 99%	\$

- 3) The MDMA will be required to deliver customer data files to the DRP within two (2) business days.

“Data Requests” is the total number of customer records requested in a given month.

$$\frac{\text{Total Data Requests} - \text{Failed Data Requests}}{\text{Total Data Requests}} \times 100$$

Service Level Penalties:

Data Delivery	Penalty
< 99.95%	\$
< 99%	\$

The MDMA will be required to provide accurate data to DRPs. The Customer Data record will be comprised of hourly smart meter data for the customer service location.

“Customer Data Records” is the total number of customer hourly data records provided by the MDMA to the DRP in a month.

$$\frac{\text{Total Customer Data Records} - \text{Failed Customer Data Records}}{\text{Total Customer Data Records}} \times 100$$

**Service Level Penalties:**

Data Accuracy	Penalty
< 99.95%	\$
< 99%	\$

If MDMA does not meet the service levels above, it will notify the DRP, the customers affected and the Energy Division with the scope of the Service interruption accompanied by a detailed plan to resolve the Service interruption. Financial penalties will be imposed on a monthly basis.

***Technical Support for MDMA Services***

The MDMA will provide Technical Support Services for DRPs and will respond to DRP requests in a timely fashion based on severity level of the consumer smart meter data issue.

- Level 1 Severity – Affects Must Offer Obligation (MOO) bidding, capacity test planning and execution. Affects market settlement and settlement with consumer. MDMA will respond within one (1) hour.
- Level 2 Severity – Affects DRP ability to provide customers with performance feedback, process customer baselines and respond to customer inquiries related to baselines or performance. MDMA will respond within four (4) hours.
- Level 3 Severity – Affects the customer smart meter data record. MDMA will respond within twenty-four (24) hours.

***Claims***

DRP will submit the claim to Technical Support at MDMA including all information necessary for MDMA to validate the claim, including but not limited to: (i) a detailed description of the Incident; (ii) information regarding the time and duration of the Downtime; (iii) the number and location(s) of affected users (if applicable); and (iv) descriptions of the DRP's attempts to resolve the Incident at the time of occurrence.

The MDMA will evaluate all information reasonably available to MDMA and reply to DRP with disposition within twenty-four (24) hours.

***Penalties***

Penalties will be imposed as follows: TBD

***Limitations***

This SLA and any applicable Service Levels do not apply to any performance or availability issues:

1. Due to factors outside the reasonable control of the MDMA (for example, natural disaster, war, acts of terrorism, riots, government action, or a network or device failure

- external to MDMA data centers, including at or between the DRP and the MDMA data center);
- 2. That result from the use of services, hardware, or software not provided by the MDMA, including, but not limited to, issues resulting from inadequate bandwidth or related to third-party software or services;
  - 3. Caused by DRP use of a Service after MDMA advised DRP to modify use of the Service, if DRP did not modify use as advised;
  - 4. That result from faulty input, instructions, or arguments (for example, requests to access files that do not exist)