



August 15, 2018
Via email

CPUC Energy Division
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Informal Comments of OhmConnect, Inc. on Energy Division’s Evaluation of the Demand Response Auction Mechanism Interim Report (Released July 24, 2018)

Dear CPUC Energy Division Staff:

OhmConnect, Inc. (“OhmConnect”) respectfully submits these informal comments in response to Energy Division’s Evaluation of Demand Response Auction Mechanism (DRAM) Interim Report (“Interim Report” or “Report”).

While OhmConnect appreciates the opportunity to submit these comments, we are concerned that additional or extensive comment periods will delay the completion of the DRAM evaluation. Back-and-forth discussion between parties on nuances of the evaluation through an informal comment process should be deemed lower priority. We encourage the Commission to focus instead on 1) completing the two outstanding criteria of the evaluation, and 2) designing the large-scale, long-term DRAM (“expanded DRAM”). The expanded DRAM for third-party demand response must balance the requirements of all stakeholders, including the IOUs, third-party DRPs, the Commission, and advocacy groups. OhmConnect applauds the IOUs’ for proactively raising concerns regarding the DRAM pilot performance requirements in the workshop; their recommendations should be considered in the design of the large-scale, long-term program. Therefore, while OhmConnect provides these informal comments, we encourage the Commission to minimize time spent on informal comments and focus on the broader implementation of what a large-scale, long-term DRAM may look like.

The DRAM pilot has already supplied sufficient learnings based on the Settlement Agreement adopted by D.14-12-024 and the evaluation metrics adopted in D.16-09-056. Applying these evaluation metrics to the available data in the Interim Report has demonstrated that DRAM has fulfilled the goals of the pilot - namely to show that Supply Resources could be feasibly procured for Resource Adequacy (RA) via third party direct participation in the CAISO markets.¹ Moreover, given the full evaluation is to be complete by Q4 2018, sufficient time exists for the Commission to complete the full evaluation *and* conduct a DRAM auction for deliveries beginning in 2020. Given the various stakeholder opinions, the design discussion for a large-scale, long-term DRAM should be conducted in parallel with completion of the DRAM evaluation to ensure implementation, if warranted, by 2020. For these reasons, OhmConnect foremost recommends that the Commission concentrate efforts on the two outstanding evaluation criteria and the design of a large-scale, long-term program in 2020.

¹ D.14-12-024.

I. SUMMARY: The DRAM pilot is successful under the metrics originally envisioned for a successful pilot.

The progression of DRAM to date has been exceptional. This procurement mechanism and its participants have overcome numerous barriers, and, in a mere three years, the DRAM has shown to be successful, as measured against the metrics listed in the evaluation criteria. The Interim Report provides deeper and more robust analysis beyond the original evaluation criteria. This collected data, such as data gathered on market concentration, the hypotheses for the success of specific DRP programs versus less successful ones, and additional analysis beyond the original set of metrics has provided insights to the Commission exceeding what was originally planned for under this evaluation.

The DRAM has outgrown the need for a “pilot” designation. In D.12-04-045, the Commission stated “[t]he purpose of a pilot is to test a new concept or program design that is intended to address a specific area of concern or gap in existing DR programs.”² In regards to the DRAM specifically, D.14-12-024 further expanded that “[a] pilot is a cost-effective way of implementing an idea, learning from that idea, and making changes to improve its success.”³ To this end, we would be concerned if expectations of the DRAM went beyond these initial objectives or if the DRAM *pilot* was held to the same standard as existing IOU DR programs that have decades of history and experience.

The results of the Interim Report indicate that DRAM is ready to assume the role of primary procurement mechanism for DR in California. Doing otherwise would be irresponsible. Not proceeding forward with DRAM would counteract one of the Commission’s foundational principles for DR:

“Demand response 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 determined prices, and dispatched pursuant to wholesale or distribution market instructions, superseded only for emergency grid conditions.”⁴

The DRAM is uniquely positioned to fulfill this principle, and the Interim Report further reinforces that it is more than capable of doing so.

II. CRITERIA #1: Multiple new, viable, third-parties were engaged, resulting in success under the original evaluation metrics. The ability to analyze deeper criteria about how to make a perfect program is testament to the wealth of data that this pilot has brought to the Commission.

Criteria #1 asks “[d]id DRAM engage new, viable, third-party providers,” where the “pass threshold” is whether a single new third-party provider bid or won a position via the DRAM.⁵ On

² D.12-04-045, at p. 181.

³ D.14-12-024, at p. 35.

⁴ D.16-09-056, OP #8, at p. 98.

⁵ Interim Report, Table 3, at p. 16.

this metric, the DRAM pilot was unequivocally a success. The Interim Report finds that ten of the fifteen companies that won contracts “**had never participated in any IOU DR program previously.**”⁶ The corollary is clear: in the absence of DRAM, the market would remain concentrated with the same contingent of DRPs that have been active in California prior to DRAM. Or, in other words, DRAM presented an opportunity not previously available to interested DRPs.

However, the conclusion of the report is that results were ultimately “mixed”⁷ because the “viability” varied from participant to participant. In this respect, OhmConnect is concerned that Criteria #1 is being conflated with Criteria #5 which analyzes the performance of these newly-engaged third parties. The report enumerates a list of challenges related to third-party engagement with the auction process, customer enrollment process, and the CAISO market process. OhmConnect attributes the foremost cause of this varied “viability” of participants to a lack of market certainty. These challenges *combined* with a lack of market certainty in DRAM III and DRAM IV inevitably led to fewer bidders participating in these one-time extensions to the pilot. The only companies benefitting from the pilot extensions were companies already in the market or new, innovative companies who were willing to take the substantial risks because there were not opportunities to participate elsewhere. Established, larger companies eager to be involved in the California DR space will not take on substantial risk of engaging with a novel program without market certainty.

In addition, the majority of challenges that third parties initially faced have been resolved – evidence of the ongoing learnings and subsequent improvements that occurred throughout the DRAM pilot period. The customer enrollment challenges, including the paper CISR-DRP form, are minimized through the new click-through process. Meter Data Management issues are partially addressed with the click-through enhancements, and the IOUs continue to make improvements (for example, SCE is presently upgrading its data warehouse). Further Commission direction, including the upcoming Application filings in November by the IOUs to enhance their click-through solutions will continue to address these challenges. Similarly, the CAISO underwent an overhaul of the DRS and DRRS systems under the ESDER initiative that corrected a number of issues DRPs faced in creating resource registrations (i.e. the “registration gap”) and settling with the CAISO.

The Report also highlights concerns of market concentration, noting that: 1) contract reassignment “potentially [signaled] an inadequate market structure for the auction mechanism,” 2) declining contract completion further enabled this market behavior, and 3) “IOU integration challenges [were] a major factor driving [providers that reassigned or terminated contracts] decisions.”⁸ The existence of contract reassignments does not inherently indicate cause for concern. Rather, this behavior highlights a maturing market with entities willing to take on growth opportunities while simultaneously ensuring that RA is still provided. If contract reassignment did not occur, the contracts would have simply disappeared, leaving RA MWs unfulfilled. In the long term, OhmConnect envisions a mechanism to facilitate these secondary transactions via a marketplace.

⁶ Interim Report, at p. 25. Emphasis added.

⁷ Interim Report, Table 1, at p. 10.

⁸ Interim Report, at pp. 33-34.

OhmConnect cautions the Commission not to overlook that Criteria #1’s original metrics are a resounding success and that there has been significant progress made by both IOUs and third parties on nearly all of the concerns raised by market participants. The Commission has direct control over the biggest remaining challenge that third parties face: market certainty. The lack of market certainty is a major contributing factor to all of the specific concerns listed in Criteria #1 and is directly tied to the concerns of market concentration.

III. CRITERIA #2: The explosive growth of users participating in demand response events is a strong signal to remove limitations to third-party participants.

Criteria #2 asks “[d]id DRAM engage new customers,” where the “pass threshold” is whether a single new customer participated in DRAM.⁹ There is no doubt that the DRAM vastly outperformed expectations for this metric, especially in the residential space. As the Interim Report notes, “Customer participation in the DRAM pilots increased over fourfold in just one year.”¹⁰

In fact, the results of Criteria #2 underestimate how many users were engaged despite limitations imposed due to registration limits, technicalities on uploading users into DRRS, and the myriad other challenges listed in Figure 15 (“DRP Responses on Primary Barriers to DRAM Participation”) of the Interim Report.¹¹ OhmConnect finds that the number of users interacting with our third-party program *alone* constitutes:

- greater than 300,000 California customers learning about new DR programs (see green lines in Figure 1);
- greater than 100,000 California customers actively reducing energy usage in at least one event during the 2016-2017 time frame;
- greater than 75,000 California customers submitted to the CAISO DRRS by the end of 2017 (see purple lines in Figure 1);
- greater than 50,000 California customers “active” in CAISO DRRS by the end of 2017, corresponding to the “DRAM Customers” numbers in Criteria #2.

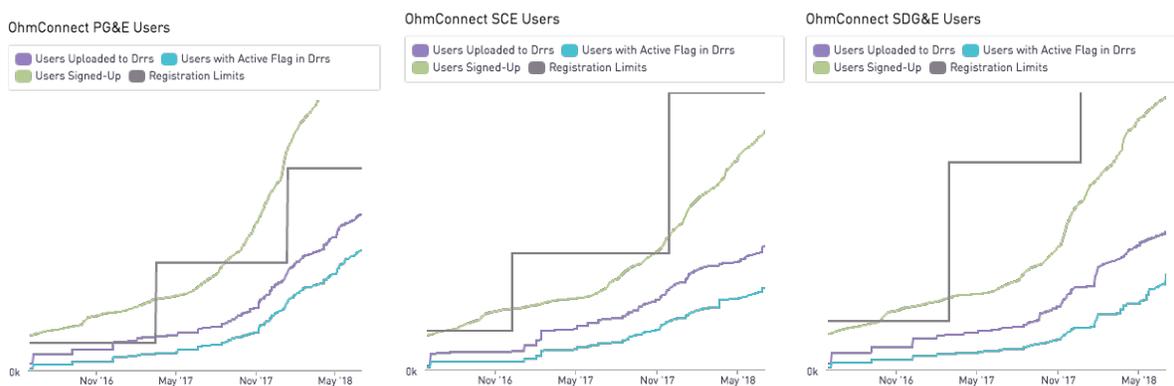


Figure 1: OhmConnect users signed-up, enrolled in DRRS, and active in DRRS across each utility

⁹ Interim Report, Table 3, at p. 16.

¹⁰ Interim Report, at p. 55.

¹¹ Interim Report, Figure 15, at p. 48.

Figure 1 shows the number of users exposed to DR programs (green), *potential* users in DRRS¹² (purple), and the number of active users in DRRS (blue). The Report only analyzes the active users in DRRS (i.e. the latter number in blue), referencing them as “DRAM Customers”. The *potential* users in DRRS were users submitted to DRRS but could not become “Active”. Many were stuck in the “Disputed” state; this conflict generally is resolved within a couple of months.¹³ Challenges related to enrolling a user into the market required third parties to build systems to correctly align data between the IOUs and the CAISO while managing sets of potentially drifting data. As noted above, many of these issues have been corrected between the new click-through process and the ongoing ESDER initiative, though third parties are still exposed to data issues on an ongoing basis.

Figure 1 also shows the registration limit on the total number of customers that were eligible to sign up for DRAM due to limitations of the IOUs’ Rule 24/32 systems (grey). Third parties, such as OhmConnect, navigated between the desire to respect these limits while also trying to grow the market. These limits were intended to be lifted once reached, but this requires more permanent data transfer mechanisms which in turn requires an application and implementation cycle that could last years. A one-year extension of the pilot would likely delay of the application and implementation of these permanent data transfer mechanisms.

As shown in Figure 1 above, the number of users cited in the Interim Report is 150% larger if accounting for the data and enrollment issues related to getting users to an “Active” state in the CAISO market, and could have been 200-400% larger if those data issues did not create a negative user experience for at least tens of thousands of California households. The discrepancy between users signing up and the users able to be marked as Active in the DRRS system is exacerbated by various data challenges that third parties have had with utilities, many of which are mentioned in the Report.¹⁴ Some data challenges were specific to certain utilities, while others, like click-through, were common across all utilities. By way of example, a few of the data challenges OhmConnect has had with an IOU over the past two years include:

- Frequent and consistent data holes for specific users not receiving data, leading to poor customer experiences and customer complaints;
- Manual processes to release data when data has been missing;
- No automated or API pathway to request data for specific users when missing data;
- Frequent holes or missing days of data for all users;
- Delays of the implementation of click-through;
- Downtimes in the IOU website preventing users from signing up;
- Unexplained outages or breaks in the IOU website that did not allow users to sign up;
- Introduction of preventative measures for users to signup with OhmConnect;

¹² A “potential” user is a user that has completed all onboarding process except for approval by the UDC and LSE in the DRRS system.

¹³ A user tends to be “disputed” for a variety of reasons, including 1) the user was assigned to an incorrect LSE (for example, if the user was in a CCA despite IOU Rule 24/32 data indicating otherwise), 2) the user was enrolled in a conflicting program with the existing utility, and 3) the user had additional data issues such as being placed in the wrong PNode due to incorrect information provided in the Rule 24/32 data.

¹⁴ Interim Report, at p. 40

- Separate processes to retrieve data from various data release pathways;
- No automated or API process to request data for current status of users in system leading to divergent data streams;
- Breaks in manual process to send user data from the IOU to third parties;
- Downtimes in the processes to submit data to third parties;
- No ability to refresh user data for users who disenroll from conflicting programs; and
- Missing historical data upon signup.

The consistently problematic data issues found in certain IOUs dramatically decreased overall enrollment and, for some third parties, were complete blockers to even entering the DRAM market.¹⁵ Despite these issues, DRAM participants continued to grow at a rapid rate, which is testament to the viability of a long-term, large-scale program.

Most importantly, the DRAM has provided an opportunity for customers to interact with DRPs in novel ways that create deep, lasting experiences. As shown in Figure 2 below, which contains two public comments of OhmConnect users from earlier this week (August 12th, 2018), the level of engagement and willingness to participate in frequent events is high. Users have asked for more frequent events, are excited by the ability to win prizes and get rewarded, and have gone deep in understanding how they use electricity. This high level of engagement has far-reaching effects beyond what the DRAM offers, though currently, the DRAM is the only market mechanism that enables this innovative experience.



Irene M Thank you Ohm! I have been a member for a few months and am using my points to reduce my monthly electric bill. It really and I've become so much more aware of how I'm using electricity. Even my son has joined it! So happy Paypal is back!

Like · Reply · Message · 1w



Audrey B Currently in a Mega ohm hour as I write this. Got nearly everything unplugged. It's 102° outside and we are roasting 😂😂😂 That Target card would sure help since our 2nd kid is moving next month and starting college 🍑

Like · Reply · Message · 1w

Figure 2: Publicly-accessible Facebook posts on the OhmConnect website during the August 12th, 2018 Mega Summer Live webcast

¹⁵ For example, see Interim Report, where a DRP stated ‘we spent a tremendous amount of money and time trying to get things working with the utility. In the end, the risk was not worth the reward nor headache as things stand currently,’ available at p. 41.

IV. CRITERIA #3: DRAM auction bid prices were competitive with historical DR programs. Cost analysis on kW-year comparisons should not include Rule 24/32 costs.

Criteria #3 asks “[w]ere DRAM auction bid prices competitive,” where the “pass threshold” is whether the prices met the definition of competitive¹⁶ (i.e. the bids were not above the long-term avoided cost of generation and were dispersed ‘in a narrow range.’)¹⁷ Although this section is largely redacted, the Interim Report does find that, in general, the competitiveness of the bid prices was “positive to mixed,” primarily in PG&E and SCE.¹⁸

OhmConnect is concerned that cost-based comparisons suggested by the IOUs to the Commission at the Evaluation Workshop include cost mechanisms outside the control of the third parties participating in the marketplace, such as the inclusion of Rule 24/32 implementation costs. The costs associated with Rule 24/32 implementation were not allocated as part of the initial DRAM implementation, and the overall costs the IOUs have incurred to build systems to pass data to third parties have been larger than what third parties like OhmConnect could have envisioned. Third parties cannot control the implementation costs of the Rule 24/32 systems beyond providing industry experience. Moreover, these costs are intended to be one-time costs to enable the implementation of the DRAM and not a variable cost incurred on a kW-year basis.

Instead, the DRAM results clearly signal on a kW-year basis the average cost of what third parties cleared in the auction. OhmConnect strongly encourages use of the kW-year prices that were bid into the DRAM procurement auction by third parties, as these provide the clearest signal of what a long-term, large-scale program would produce in terms of prices. These prices are estimated in Figure 3 below based on budget and August MWs procured, along with the corresponding trendline of prices over time.¹⁹

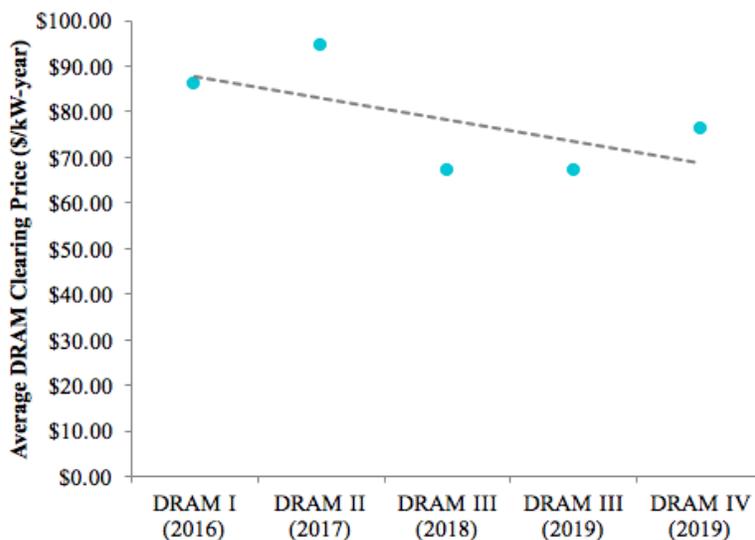


Figure 3: Average DRAM clearing prices over time

¹⁶ Interim Report, Table 3, at p. 16.

¹⁷ Interim Report, at p. 56.

¹⁸ Ibid.

¹⁹ To calculate the average DRAM clearing price, OhmConnect used the DRAM procurement budget and subtracted estimated administrative costs by the IOUs, and further divided this total by the total number of MWs procured. Note that the budget does not include any Rule 24/32 costs or administrative costs by the IOUs.

In the past four years, the costs of third-party participants to deliver 1 kW-year were seemingly competitive with IOU programs for delivering 1 kW-year, despite the IOU programs having over 20 years of existing users and funding. Furthermore, the continual downward price pressure of a competitive marketplace allows all ratepayers to reap the benefit of multi-party, market-based competition. These price pressures are a natural phenomenon of competitive marketplaces, which is the underpinning reason that the original authors of DRAM envisioned this being the “foundation of DR procurement in the future.”²⁰

V. CRITERIA #5: Contract delivery improved over time to reflect progressive learnings by market participants.

Criteria #5 asks “[d]id DRPs aggregate the capacity they contracted in a timely manner,” where the “pass threshold” is based on a semi-continuous threshold.²¹ Overall, the Interim Report concludes that the score for this metric falls between “Acceptable” and “Good”,²² with Supply Plan capacity increasing from 65% of contracted capacity in 2016 to 90% of contracted capacity in 2017.²³

While a number of DRPs failed to aggregate the capacity contracted in a timely manner, those failures, especially during the initial years of a “pilot”, should not be seen as a negative, but instead as a positive. Failure by individual companies allows for learnings, differentiation, and growth. If all companies were successful, then the bar was made too low; if none of the companies was successful, then the bar was made too high. For those that succeeded where others failed, it is shortsighted to believe that there was a single factor that dominated the reason between success and failure, though it is easy to hypothesize and mistake correlation for causation. Long-term, successful consumer-facing companies do not have a single “silver bullet” that differentiates them from all other entities; those “silver bullet” companies are easily replicated and mimicked. Instead, lasting consumer companies have hundreds or thousands of differentiated points of success. For example, Google does not have a “silver bullet” of success of the sorting algorithm known as “page-rank” first. Many companies are capable of replicating this (in fact, the algorithm is taught in many college engineering courses). If the algorithm alone was the driver of their success, Google would be subsumed by the hundreds of other competitors like Bing, Ask Jeeves, and Yahoo. However, its continued success has been built on thousands of improvements to the company based on data it possesses. OhmConnect cautions that one factor of differentiation should not be assumed to be the sole driver of differentiation, especially without context of the myriad of differences between the successful companies and the failing companies. Instead, OhmConnect recommends the Commission enable a long-term, large-scale market which will prove companies’ success over time.

The improvement of contract delivery over time is a testament to third parties better understanding contract requirements as the DRAM pilot progresses. With any pilot that is intended to “test a new concept or program design”, experimentation will lead to better results as

²⁰ See November 5, 2015 CPUC Voting Meeting, Commissioner Florio comments beginning at 2:31:15, available at http://www.adminmonitor.com/ca/cpuc/open_meeting/20151105/.

²¹ Interim Report, Table 3, at p. 16.

²² Interim Report, at p. 65.

²³ Interim Report, at p. 67.

all parties learn more about the implementation challenges and data shortfalls. It also highlights the need to move DRAM beyond the pilot designation. A pilot extension would only serve to further concentrate the market to participants already in the market as the lack of market certainty will drive away any new participants from spending time and resources to overcome those implementation challenges.

VI. CONCLUSION: Market certainty and program requirements are intricately linked. DRAM must move simultaneously towards both as we mature from pilot to program.

OhmConnect recommends that the Commission focus on developing the framework needed to implement a long-term, large-scale DRAM by 2020. The results of the Interim Report are positive, and results from the remaining two evaluation metrics should be published by Q4 2018. After Q4 2018, stakeholders will have sufficient time to analyze the results and deploy an expanded DRAM. Regardless of the results of the last two evaluation metrics, a one-year pilot evaluation would be unsatisfactory. Instead, OhmConnect recommends the stakeholders use the next few months productively to provide the Commission input as to what a long-term, large-scale DRAM looks like.

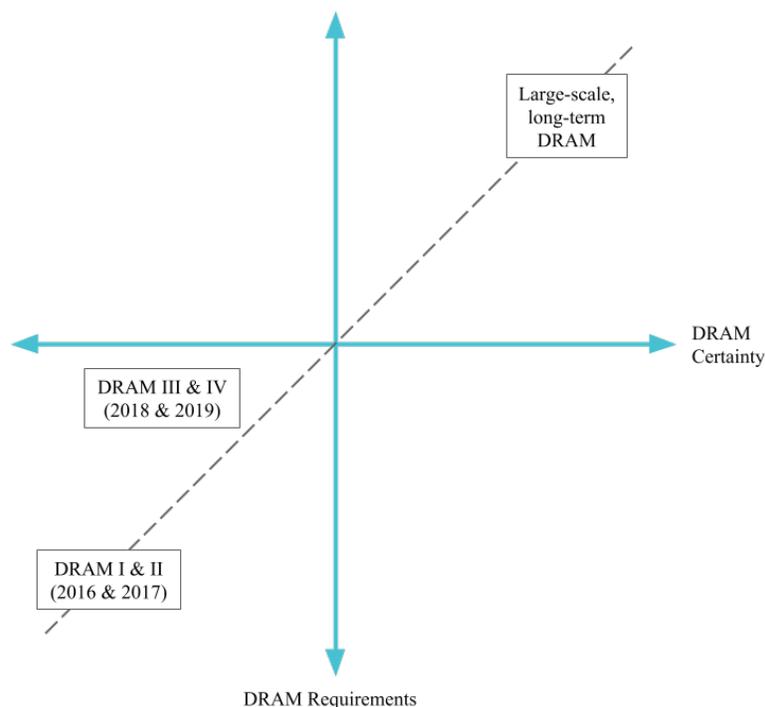


Figure 4: DRAM Certainty vs DRAM Requirements

Illustratively, OhmConnect sees the large-scale, long-term DRAM as an evolution of DRAM in both axes of program certainty and program requirements (see Figure 4). The IOUs have already identified numerous contract changes that will enable stricter program requirements, as discussed in the workshop. OhmConnect applauds the IOUs for proactively providing those requirements as those requests can be considered the basis of a long-term, large-scale program. Regarding market certainty, OhmConnect recommends the Commission consider the procurement targets outlined in D.16-09-056, with the long-term view that eventually all

California DR programs would be housed underneath a single market-based procurement mechanism.

These conflicting and complementary requirements of stricter program requirements and higher market certainty must be tied together. The DRAM pilot does not have the performance requirements necessary to be on par with System RA requirements, though that is what is being requested by the IOUs. The DRAM pilot is not the primary procurement mechanism of DR, though that is what is required for market certainty. Instead, the DRAM pilot was built in a way, if successful, DRAM would become both the “primary tool” for sourcing DR and DRAM would have program requirements on par with System RA. The original architects of DRAM foreshadowed the conflicting interests of building stricter program requirements and the need for a long-term, large-scale program. OhmConnect recommends that stakeholders collectively move towards both those requirements simultaneously and together.

Respectfully submitted,

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