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**OhmConnect Comments on the Qualifying Capacity of Supply-Side
Demand Response Working Group Final Report**

Additional submitted attachment is included below.

**CALIFORNIA ENERGY COMMISSION SUPPLY SIDE DR QC WORKING GROUP
(21-DR-01)**

**Comments of OhmConnect on the Commission Report - Qualifying Capacity of Supply-Side
Demand Response Working Group Final Report**

December 20, 2022

A. INTRODUCTION

OhmConnect appreciates the time and effort that the California Energy Commission (“CEC”) Staff and other parties have dedicated to this effort over the last year-and-a-half. The Final Commission Report of the Qualifying Capacity of Supply-Side Demand Response Working Group (“Final Report”) is well-reasoned and OhmConnect generally supports the CEC’s recommendation to replace the Load Impact Protocols (“LIPs”) with a more streamlined and straight-forward incentive based approach. That said, with respect to implementation and workability, “the devil’s in the details”. Two areas of concern rise to the top:

1. The “alternate” bid-normalized load impact (“BNLI”) is not reasonable and should not be included in the Final Report prior to its submission into the resource adequacy (“RA”) proceeding. Adopting a floor for which dispatches count toward capacity demonstration could be a sensible alternative to address the concern that DRPs will receive credit for large RA positions solely based on performance in very small events.
2. The proposed proportionality-based penalty structure should be replaced with a \$/MW of shortfall approach. This will simplify implementation and rightly result in the financial penalties scaling with larger volumes of under-delivery. Although OhmConnect provides an example below, the specific structure should be developed in the RA proceeding.

Comments on each recommendation, including a detailed discussion of each of the above areas of concern, are provided below.

B. COMMENTS ON THE CEC’S RECOMMENDATIONS

1. Adopt an incentive-based approach.

OhmConnect generally agrees that moving from a rigorous up-front analytical effort to an incentive-based approach makes sense. Given the extensive up-front cost and effort required to produce the LIP analysis, as well as the fact that the outputs of the resulting report are rarely, if ever, approved by

Energy Division as modeled, the value of this massive up-front analytical effort is limited. We note, however, that the true value of the CEC’s proposed approach is the introduction of a standardized performance evaluation methodology that can be applied across programs. The Final Report should be amended to explicitly state that the proposed qualifying capacity (“QC”) approach would apply to both investor-owned utility (“IOU”) and third-party administered programs.

2. *Adopt the capacity shortfall penalty incentive mechanism with forced outage adder.*

OhmConnect agrees that up-front flexibility must be paired with penalties for under-delivery, and that the penalty should be centrally administered. Moreover, we agree that the penalty should “...increase[] steadily with underperformance...”¹ and “account[] for the fundamental variability of DR and provide[] the same affordances for forced outages and other forms of underperformance granted to all resources under the RAIM...”² The proposed penalty design, however, *requires much further development*.

As a threshold issue, OhmConnect assumes that administration of the penalty structure is not intended to impact the contractual relationship between the demand response provider (“DRP”) and the load serving entity (“LSE”). Simply put, we assume that the CEC is *not* proposing that, in lieu of making payments to their counterparties, LSEs route capacity payments to the CAISO to administer. If this interpretation of CEC’s intent is correct, it should be clearly stated in the Final Report. Any other alternative is not workable and would present significant legal and financial challenges.

At the operational level, OhmConnect sees several issues with the proposed proportionality-based penalty structure. First, the capacity price negotiated between each LSE and DRP is different and is not public information. The CAISO would need a mechanism to compel disclosure of this price. The legality and enforceability of this is unclear. Moreover, because (we assume) performance would be assessed at the program level, at least for System RA contracts, in order to produce the richest and best dataset, the payment/penalty calculation would need to reflect a weighted average of the differing contract prices. Stakeholders will need to consider how to calculate the value of the payment or penalty in situations where a shortfall materializes in just one contract, negotiated at a specific price. Finally, because each MW of capacity is valued differently depending on the counterparties and the negotiated price, the same MW shortfall can have wildly different financial repercussions. In fact, a smaller absolute MW shortfall can have a bigger financial cost than a much bigger absolute MW shortfall, even at the same contract price, depending on the proportion of the total RA position that this shortfall represents. In the example provided in Table 1, below, the DRP that under-delivered by 50 MW is simply foregoing all of its contract revenue, while the DRP that under-delivered by 3.75 MW must *pay* \$50,000. This is counterintuitive

¹ Final Report, at p. 48.

² Final Report, at p. 49.

because it is the absolute magnitude of the shortfall that is most important in terms of system reliability. A proportionality-based structure also disincentivizes new market entrants because relatively small absolute shortfalls can have disastrous financial consequences for small providers.

Table 1: Drawbacks of the Proposed Penalty Structure

Contracted	Demonstrated	Shortfall	Contract Price	Net Payment
5 MW	1.25 MW	3.75 MW	\$20/KW	(\$50,000)
100 MW	50 MW	50 MW	\$20/kW	\$0

In order to sidestep these issues, and make the penalty structure easier to administer, OhmConnect proposes a more standardized approach. All DR providers should face the same dollar-value penalty per MW of under-delivery. The penalty should still be large enough to provide a real incentive for accurate capacity valuation and can potentially be dynamic. For example, it can reflect the average cost of RA capacity in each month, or hour/month, as reported to the CPUC. It can also scale with the magnitude of under-delivery. In this way, the suppliers with the largest shortfalls—these presenting the biggest threat to reliability—will face the largest financial penalties. This structure has precedent in the CAISO's Capacity Procurement Mechanism, which has a tariff-specified price that applies to all providers. It also reflects the manner in which capacity shortfall penalties in NYISO are determined—these are based on the ICAP clearing price in the spot auction for that month, which is common to all suppliers in a given capacity zone. Because the specific values (\$/MW penalty and any multipliers) are incredibly consequential and should be open to stakeholder feedback, we do not propose specific values in these comments. The specifics should be discussed in a stakeholder process in the RA proceeding.

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

OhmConnect supports this recommendation as long as the methodology used to calculate ex post values reflects CEC's original BNLI proposal.

4. Require resources to show takeback.

While OhmConnect supports the modeling of takeback in ex post calculations, we do not support its inclusion in QC at this time. OhmConnect worries that inclusion of negative QC values will incentivize DR programs to minimize spillover effects. In practice, this will discourage the type of load shift, such as pre-cooling, that California should be *encouraging*. Moreover, spillover effects are often relatively minor—they do not reflect the near one-to-one relationship of storage charging and discharging—so the benefit of the incremental precision will likely be dwarfed by the cost of the added

complexity. OhmConnect recommends that spillover effects be measured, with their inclusion in QC determined at a later date.

5. *Require DRPs to submit capability profiles and a “slice-of-day” table to summarize QC values.*

OhmConnect supports this recommendation.

6. *Eliminate unnecessary reporting requirements for QC determination.*

OhmConnect strongly supports the recommendation to eliminate unnecessary reporting requirements. However, if the CEC’s proposal is adopted, the reporting requirements should not be adapted from the LIPs. The CEC suggests that, in order to standardize reporting requirements, “CPUC staff can publish one or more companion documents specifying which protocols or components thereof are applicable to third-party and investor-owned utility supply-side and non-event-based DR.”³ In particular, the CEC recommends that “[t]he streamlined LIPs ... should be applied for RA compliance Year 2025 and revisited thereafter.”⁴ OhmConnect does not support using the LIPs, even our own simplified LIP proposal, as the basis for a standardized set of reporting requirements under the CEC approach.

The protocols are very specific to the analysis as it has been performed to date. Taking the LIPs as the starting point and attempting to adapt them to the CEC’s methodology would likely be an exercise in unnecessary mental gymnastics. For example, some existing LIP requirements that our proposal retained, including reporting of uncertainties, do not appear relevant under the CEC proposal. Another such example is the evaluation plan. Because much of the CEC’s methodology is standardized, it is unclear that an evaluation plan would add value. Rather than draw any requirements directly from the LIPs, OhmConnect recommends the CEC create a set of simple outputs that are tailored to its own proposal.

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

OhmConnect strongly supports this recommendation. If the June 1 deadline is not feasible, OhmConnect agrees that it is reasonable to “..allow flexibility if needed to produce values by July 1, particularly during the first few years of transition.”⁵

8. *Adopt streamlined QC approval criteria.*

OhmConnect supports this recommendation.

9. *The CAISO should implement the proposed penalty mechanism and exempt DR from the RAAIM.*

³ Final Report, at p. 37.

⁴ CEC Final Report, at p. 50.

⁵ Final Report, at p. 50.

OhmConnect generally supports this recommendation. As is quoted in the final report, OhmConnect’s primary recommendation is that any penalty structure be centrally administered. This is necessary to remove the burden of a potentially complex exercise from LSEs that may not have the resources to administer it independently.

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

OhmConnect supports this recommendation.

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

OhmConnect supports this recommendation.

12. Adopt bid normalization for load impacts in ex post capacity valuation.

OhmConnect generally supports the bid-normalization methodology as described in CEC’s proposal and discussed in the working group. We do not support the alternate BNLI methodology proposed in the Final Working Group report. The alternative methodology appears to eliminate the BLMI concept entirely. Instead, the methodology takes as demonstrated capacity the value of the full bid quantity for any partial dispatches where delivery meets or exceeds the scheduled quantity. If the dispatched resources under-perform, even by a small margin, the alternative formula assumes that the non-dispatched resources would have 0 performance. This is extremely problematic. Imagine, for example, a DRP that has one resource per SLAP, each worth 10 MW, for a total capacity of 220 MW. If one SLAP is dispatched and delivers 10.1 MW, the formula assumes that resources in the remaining SLAPs would deliver 100% if dispatched (DC = 220 MW). If the resource in the dispatched SLAP delivers 9.9 MWs, however, the methodology assumes the resources in the remaining SLAPs would deliver nothing (DC = 9.9 MW). The smaller the dispatch, the greater the penalty for under-delivery becomes. See example in Table 2, below.

Table 2. Impact of Under-Delivery under the Alternative BNLI Formula

Bid	Dispatched	Delivered	BNLI	"Short" vv Dispatch	"Short" vv Capacity
220	10	10.1	220	0.1	0
220	10	9.9	9.9	-0.1	210.9
220	1.2	1.3	220	0	0
220	1.2	1.1	1.1	-0.1	218.9

Not only is this overly punitive, it is logically inconsistent. Under-delivery on very small dispatches should, in theory, have less weight than under-delivery in larger events. The logic behind the CEC’s alternate approach appears to be that it is “easier” to meet and/or exceed small scheduled quantities

because a DRP can simply call more customers than it feels is required to meet dispatch instructions. In reality, it is not true that meeting smaller dispatches precisely is “easier” because smaller events have a much wider distribution of potential outcomes. In fact, the alternate methodology would encourage random, and ultimately uneconomic, behavior. A DRP would need to call *substantially* more customers than is required in order to *ensure* over-delivery. Because it is difficult to deliver exactly the expected load drop in every event, especially with a lot of small residential customers, a DRP would aim to over-deliver. Calling “a lot” of additional customers, rather than just marginally more customers, would be necessary because natural variability in DR customer performance could render a small customer buffer insufficient. And because the financial penalties of even a small discrepancy are extremely high, the DRP would need to *plan* to over-deliver, and over-deliver by enough to *ensure* beyond a reasonable doubt that it would not under-perform even marginally. In so doing, the DR provider would essentially be ignoring CAISO dispatch instructions. Moreover, consistently dispatching a larger number of customers than needed would quickly become financially unsustainable.

Finally, and importantly, the proposed alternate approach would completely disincentivize active market participation. If a DRP fears being severely punished for under-delivery in small events, it will likely avoid anything other than full dispatch during emergency conditions. Dispatch avoidance runs counter to the desire of both the CPUC and the CAISO, as stated in multiple forums and regulatory proceedings. Due to the fact that the alternate proposal 1) is illogically punitive, 2) introduces incentives for undesired behavior, and 3) was not discussed during the Working Group meetings, OhmConnect respectfully requests that it be removed from the final report submitted to the CPUC.

That said, OhmConnect is cognizant of the fact that delivery, even over-delivery, on a small dispatch cannot guarantee that the DRP can equally deliver in a much larger call. For example, it is sensible to be skeptical of giving a DRP credit for 100 MW if they were scheduled for and delivered 1 MW. To that end, it may be prudent to adopt a floor for which dispatches qualify to be bid-normalized and count toward demonstrated capacity. Specifically, the CEC can recommend a floor equivalent to 10-20% of the DRP’s bid. For example, if the bid quantity is 100 MW, only dispatches exceeding 10-20 MW would be bid-normalized. While this does not eliminate the concern, it does avoid an outcome whereby a DRP calls only truly tiny events in order to demonstrate a much higher capacity value.

13. Reduce the threshold required for midyear QC update.

OhmConnect supports this recommendation.

14. Eliminate the components of the PRM associated with operating reserves and load forecast error.

OhmConnect sees some merit in the CEC’s proposal to convert the forced outage adder into a multiplier applied to the effective capacity formula. However, removing the PRM adjustment from supply

side DR but retaining it for load-modifying programs introduces an asymmetry in capacity valuation. Such an asymmetry already exists on a smaller scale: because load-modifying DR reduces an LSE's demand forecast, and so its RA obligation, it also eliminates the incremental planning reserve margin that must be procured by the LSE. In effect, the value of load-modifying DR programs is scaled by the full PRM. Supply side demand response, on the other hand, currently only receives a portion of the PRM, the 9% representing forced outage and forecast error. The 6% associated with operating reserves and ancillary services was eliminated by CPUC Decision 21-06-029. Eliminating the remaining 9% would further widen this discrepancy. If the PRM is eliminated for supply-side DR, the resulting valuation asymmetry should be adequately explained.

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

OhmConnect has no additional comments on the PRM adder.

16. Maintain the distribution loss factor adder in QC values.

OhmConnect supports this recommendation.

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

OhmConnect supports continuing to include the transmission loss factor in DR value as a credit.

C. CORRECTIONS TO THE DESCRIPTION OF OHMCONNECT'S PROPOSAL

1. OhmConnect's proposal is intended to apply to third-party DRPs undertaking the evaluation for the purposes of RA only.

OhmConnect clarifies that its proposal was intended to create a *separate*, more streamlined guidance document to make the LIPs more understandable and less burdensome for third-party DR providers. The Final Report noted that "SDG&E and PG&E opposed the elimination of protocols pertaining to ex post metrics for non-event-based DR."⁶ We understand that IOU LIP reports are used for purposes *beyond* resource adequacy. As such, eliminating all non-RA requirements from IOU reports is likely not sensible. Similarly, eliminating all non-event based protocols, while reasonable for third-parties, would not work for the IOUs as these do administer non-event based demand response programs. OhmConnect clarifies that the elimination would only be reflected in a simplified set of guidelines aimed at simplifying the LIP exercise for third-parties. Similarly, where "SDG&E objects to eliminating typical and average days because "the [investor-owned utilities] use this information for internal/external data

⁶ Final Report, p. 34.

requests.”⁷ OhmConnect again specifies that the proposal was aimed at simplifying the process for third-party providers that do not use this information in any capacity.

2. *OhmConnect’s proposal to formally permit monthly roll-ups simply addresses the inability of DRPs to insert data for hundreds of events in the current LIP report or ex post table generator without making these files unreadable.*

OhmConnect’s monthly event roll-ups proposal simply formalizes an approach that has already been informally permitted within the current LIP framework for DR programs that call hundreds of events because, at that volume, reporting individual events within the report or the ex post table generator renders these files too heavy and, in the case of the table generators, unreadable. In discussing OhmConnect’s proposal to formally permit monthly event roll-ups to be shown in the report and ex post table generator, the CEC staff agrees with SDG&E that all load impact be reported at the individual event level “and retains the requirement for individual event reporting in its proposal.”⁸ OhmConnect clarifies that its proposal to show monthly roll-ups of events aimed specifically at solving the issue where reporting each event in the body of the report and in the table generators, as is required by the LIPs, is not possible or practical. For this reason, OhmConnect has reported load impacts as “monthly roll-ups” in these two files in every evaluation it has undertaken over the past four years. OhmConnect has made individual event load impacts available in a separate csv file, a practice we support continuing. OhmConnect has proceeded in this manner without issue on an informal basis and our proposal is simply to formalize the practice for DR providers that call hundreds of events during a program year.

Additionally, our proposal to formally permit monthly roll-ups is only relevant within the context of the LIPs. Because the CEC’s proposal requires graphical representation of all load impacts—this, rather than their listing in a table in an already heavy report and excel file—it does not face this issue. As such, OhmConnect’s proposal is not relevant or necessary. [Even within the LIP report, where we can graphically show all events, we do so.] Therefore, OhmConnect agrees that the CEC should require the reporting of individual event level impacts if its proposal is adopted by the Commission.

D. CONCLUSION

OhmConnect has appreciated the commitment stakeholders have made to this Working Group, as well as the CEC’s stewardship of this process. We directionally support the recommendations made in the Final Report and hope that the concerns outlined in these comments can be addressed in the Final Report prior to its submission to the CPUC’s RA proceeding.

⁷ Final Report, at p. 38.

⁸ Final Report, at p. 38.