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CLECA's Comments on the CEC Draft Report on Qualifying Capacity of Supply-Side Demand Response

Additional submitted attachment is included below.
February 4, 2022

CEC Docket: 21-IEPR-04


**Summary of Concerns**

The California Public Utilities Commission (CPUC) asked the California Energy Commission (CEC) to develop an accurate demand response (DR) counting methodology for the CPUC’s Resource Adequacy (RA) RA program, not a methodology that would result in the California Independent System Operator (CAISO) exempting DR from its Resource Adequacy Availability Incentive Mechanism (RAAIM). We are concerned that the Draft Report focuses too much on a counting methodology that would result in a (CAISO) determination to provide an exemption from its RAAIM. The latter is necessary to facilitate DR being placed on CAISO supply plans.

The CPUC has already decided the following regarding DR programs and RAAIM:

> Therefore, we do not agree with CAISO, as it is clear that DR resources bidding variably according to their availability to reduce load could be penalized through RAAIM for bidding below their QC value depending on applicable conditions on a given day. **We find that such penalties would be unreasonable.**\(^2\)

The Commission finds that the historical record is not consistent with CAISO’s assertion that an ELCC-determined QC is required in order for DR to be treated as a variable resource. CAISO likewise acknowledges in comments that the CAISO tariff does not require using an ELCC methodology.\(^3\)

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\(^1\) CLECA is an organization of large, high load factor industrial customers located throughout the state; the members are in the cement, steel, industrial gas, pipeline, beverage, cold storage, and minerals processing industries, and share the fact that electricity costs comprise a significant portion of their costs of production. Some members are bundled customers, others are Direct Access (DA) customers, and some are served by Community Choice Aggregators (CCAs); a few members have onsite renewable generation. CLECA has been an active participant in Commission regulatory proceedings since the mid-1980s, and all CLECA members engage in Demand Response (DR) programs to both promote grid reliability and help mitigate the impact of the high cost of electricity in California on the competitiveness of manufacturing. CLECA members have participated in the Base Interruptible Program (BIP) and its predecessor interruptible and non-firm programs since the early 1980s. Thus, CLECA is knowledgeable about DR and very committed to it. CLECA strongly supports accurate determination of the capacity value of DR and incenting high levels of DR performance.

\(^2\) CPUC D.21-06-029 at 30-31 (emphasis added).

\(^3\) CPUC D.21-06-029 at 31.
While one methodology may be proven to be more accurate than another in valuing a resource’s contribution to system reliability, that should not preclude recognition that DR is fundamentally a variable resource that should be allowed to bid variably and should be exempt from RAAIM penalties.  

The CPUC determines qualifying capacity for resources, not the CAISO. As the CAISO tariff states: “The CAISO shall use the criteria provided by the CPUC or Local Regulatory Authority to determine and verify, if necessary, the Qualifying Capacity of all Resource Adequacy Resources.” The CAISO tariff unequivocally provides that it “shall use the criteria provided by the CPUC.” Thus, it is not appropriate for the CAISO to use its RAAIM tariff to effectively mandate the QC method to be used by the CPUC for DR in order to grant a RAAIM exemption for DR. CAISO provided a RAAIM exemption for wind and solar resources without requiring any particular QC methodology.

The Draft Report should focus on what method can accurately count DR’s load reduction consistently with the CPUC’S RA program design to meet a monthly 1 in 2 peak, can be readily implemented, is not overly burdensome, and is transparent. Despite spending several weeks developing principles for a DR counting methodology, the Draft Report does not mention the principles that were developed, nor does it include a discussion of the use of the principles in the CEC’s evaluation and recommended methodology.

The Draft Report fails to discuss the merits of the CLECA proposal for load impact protocols (LIP) informed by loss of load expectation (LOLE) (referred to as LIP+LOLE), which is an improvement over the current load impact protocols. Importantly, LIP+LOLE can be implemented in time for the 2023 RA compliance year. Furthermore, LIP+LOLE meets the CAISO’s principles it established for a RAAIM exemption for DR, i.e., capturing the contribution of DR to system reliability and its interaction effects with other resources.

The Draft Report’s recommendation to use LIP informed by effective load carrying capability (ELCC) (referred to as LIP+ELCC) raises the following concerns:

- It is complex and data-intensive, and it is not clear it will produce results in time for the 2023 RA Compliance Year
  - The CEC recommendation for parties to select the status quo or LIP+ELCC option by July 1, 2022, would require results to be finalized by June
- The proposal offers no timeline to properly validate the results which is required by CPUC D.21-06-029 at 37.
  - If the outcome improperly underestimates DR’s capacity, this would result in very costly additional procurement at a time when available capacity is limited
- The proposal is incompatible with the CPUC’s reform of the RA program to use the Slice of Day framework starting in 2024

4 CPUC D.21-06-029 at 38.
5 CAISO tariff section 40.4.1.
Furthermore, the Draft Report contains the following incorrect statements:

- Demand response avoids the purchase of capacity, it does not avoid the “purchase of high-priced energy”\(^6\)
- It is the CPUC that performs the crediting of DR against the CPUC jurisdictional load forecast, not the CAISO\(^7\)
- All load serving entities, the CPUC, and DR stakeholders – not just several stakeholders – objected to the CAISO proposed revision request (PRR) 1280 which would have required DR to be on supply plans\(^8\)
- Compensation for energy provided in the CAISO market goes to the scheduling coordinator, and in the case of IOUs the benefits are spread to all customers and not just the DR participants\(^9\)
- Performance incentives exist at the program level for DR performance even if DR is not included on a supply plan

These incorrect statements are expanded upon below in section 9; they should be corrected or stricken from the Draft Report prior to its adoption.

1. Introduction

The working group (WG) process at the CEC was requested by the CPUC to develop a methodology to establish a qualifying capacity (QC) for supply-side demand response (DR) to be used for resource adequacy (RA). Ordering Paragraph 11 of the CPUC’s D. 21-06-029 asked the CEC to facilitate the development of a replacement QC methodology for “the 2023 RA compliance year or thereafter”. The intent of the CPUC was to develop a durable counting method. In addition, CPUC D.21-07-014 adopted the Slice of Day concept for the reform of its RA program. The CEC process, however, has resulted in the development of only two recommended interim QC methodologies for 2023 alone, along with an option to use the current load impact protocol (LIP) methodology for 2023.

2. The ex-post analysis is the best review of demand response performance

The Draft Report discusses the Joint Final Root Cause Analysis for the 2020 Heat Wave regarding DR performance but does not mention of the ex-post performance analysis presented in the LIP reports. The use of bidding data and baseline settlement data is fraught with problems to measure the performance of DR. Because qualifying capacity is established the year prior to the bidding data, it is not

\(^{6}\) Draft Report at 3.
\(^{7}\) Draft Report at 5.
\(^{8}\) Draft Report at 10.
\(^{9}\) Draft Report at 4.
properly aligned with the same customer enrollment. The problems with load baselines not reflecting the actual load that occurred during the extreme weather experienced in 2020 is well documented. The best source of DR performance is in the ex-post analysis included in the reports provided to the Commission in the LIP filings. However, the Draft Report fails to mention the LIP review process.

3. CLECA’s proposal, LIP+LOLE, is an improvement to the load impact protocols and can be implemented for 2023

CLECA presented a proposal for use of the load impact protocol (LIP) results informed by loss of load expectation (LOLE), or LIP+LOLE, at a scheduled meeting of the working group. Essentially, LIP+LOLE uses hourly LOLEs to weight the LIP results, rather than averaging the LIP results over the entire 4-9 pm period. While it was admittedly presented late in the CEC workshop process, CLECA offered to have follow-up discussions with any stakeholder. CLECA reached out to the investor-owned utilities (IOUs) and had follow-up meetings with both the CEC and CAISO on the proposal. It is not clear why the Draft Report failed to include any discussion of the merits of this proposal as a viable counting method in the report.

The demand response providers are already using the LIP to produce qualifying capacity results to be filed on April 1, 2022, for the 2023 compliance year. The LIP have the advantage of already being validated by the Commission. The only outstanding issue for the LIP+LOLE proposal is the source of the hourly LOLE. Both the CEC and CPUC have the capability to perform reliability modeling that can provide the LOLE. The CPUC is scheduled to release its updated LOLE and planning reserve margin study in February 2022. The CEC prepared results for 2023 in its mid-term reliability study, which could be updated. As a fallback there are LOLE results from CAISO’s E3 ELCC study provided in July 2021.

The tables below compare the CEC and CAISO LOLE results. The CEC result has a broader distribution of LOLE, but it is more concentrated in several hours compared to the CAISO results. Using the current CAISO availability assessment hours for RA resources, which are from 4-9 pm, the difference between the two is small. The CAISO E3 study found the hours of 4-9 pm contain 98.6% of the LOLE, while the CEC study results contain 98.2% of the LOLE in those hours. If either of these sets of LOLE figures were used, the biggest difference would be the weight that is applied for a load impact for HE18, as the CEC results would provide a lower weight.

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10 See Draft Report, Appendix B for examples of how the hourly LOLE weights are applied to the hourly load impacts.

11 ALJ Debbie Chiv rulings issued on February 3, 2002 and January 21, 2022, in R.21-10-002.
Finally, while CLECA disagrees with the concept that the CAISO’s proposed principles are required for an appropriate DR counting methodology, the LIP+LOLE meets these CAISO principles:

1. The qualifying capacity valuation methodology for demand response resources must consider variable-output demand response resources’ reliability contribution to system resource adequacy needs across the year;
2. Assess how DR’s reliability contribution saturates as other similarly situated use- and availability-limited resources are added to the system.12

Principle 1 is satisfied because the LOLE study looks at every hour of the year, and as seen in the tables above, loss of load is concentrated in the summer months during the hours HE16-21. The CAISO’s availability assessment hours are also between HE17-21, which is also when demand response must be

12 CAISO (July 6, 2021) Resource Adequacy Availability Incentive Mechanism (RAAIM) Exemption Option For Variable-Output Demand Response Valued Under an Effective Load Carrying Capability (ELCC) or Similar Methodology-Revised Final Proposal at 7.
available to count as capacity under the CPUC’s RA rules.13 The LIP+LOLE proposal would apply the hourly LOLEs as weights for the hourly impacts of DR.

Principle 2 is satisfied by the resource mix used to develop the LOLE results. All resources, including use-limited resources like DR, are included in the calculation of LOLE. To the extent there are surplus resources in a particular hour or month, then the LOLE will be zero or it will have a lower value. If a DR program’s hourly load impacts are during hours with no, or very little, LOLE, then the weight for that hourly impact is zero, or very small. While this should not be a focus of the Draft Report, based upon CAISO’s own principles, the LIP+LOLE should qualify as a proper counting method and its use should allow DR to be exempt from CAISO’s Resource Adequacy Availability Incentive Mechanism (RAAIM).

CLECA’s LIP+LOLE proposal offers transparency of how a DR program’s hourly load impacts are valued, which meets the first principle the CEC established of “[b]e transparent and understandable”.14 If a DR program’s LIP results significantly change after applying the LOLE weights, it is because hourly impacts are not occurring during specific hours when a program is most needed, as shown by the hourly LOLE weights. The use of the LOLE satisfies CEC principle 6, which states “[t]ranslate a DR resource’s load reduction capabilities into its contribution to reliability.”15 In contrast, the LIP+ELCC recommended in the CEC report is not transparent. We are also concerned that it could significantly devalue the capacity value of a DR program with hourly load impacts from 4-9 pm, compared to the current LIP results. The cause of the devaluation will be a mystery to the DR provider and the DR participant because ELCC process provides no clarity on how it occurred. The application of the LOLE weights can be performed easily, which meets the CEC principle “[a]llow DR providers to quickly determine or update QC values”.16

4. The CEC workshop report is overly concerned about supply plans and RAAIM, which are not included in the CPUC request

CAISO’s tariff states, “The CAISO shall use the criteria provided by the CPUC or Local Regulatory Authority to determine and verify, if necessary, the Qualifying Capacity of all Resource Adequacy Resources.”17 The CPUC requested the assistance of the CEC to recommend a counting methodology for demand response. For the purposes of the Draft Report, the focus should be the CPUC’s RA program.18

In the same discussion that established the request for the CEC working group and report is the CPUC’s

13 CPUC D.21-06-029 at 27. Demand response but must be available Monday – Saturday, 4 consecutive hours between 4 PM and 9 PM, and at least 24 hours per month from May – September.
17 CAISO tariff section 40.4.1.
18 CEC draft report at 1 and 7.
own conclusion regarding the appropriateness of CAISO RAAIM for demand response as a variable resource. The CPUC stated:

While one methodology may be proven to be more accurate than another in valuing a resource’s contribution to system reliability, that should not preclude recognition that DR is fundamentally a variable resource that should be allowed to bid variably and should be exempt from RAAIM penalties.19

The CPUC determined that the CAISO RAAIM program is fundamentally not suitable for variable resources which include DR. This is because the CAISO RAAIM program requires the resource to bid a fixed amount of capacity shown on a supply plan, and if the value is lower than that amount it is subject to a penalty. The CPUC found such penalties to be unreasonable.20 It is not clear why DR should be treated differently from wind and solar; the CPUC noted that the CAISO had exempted RAAIM for wind and solar prior to the use of ELCC.21 Because the RAAIM is not suitable for DR, the CPUC determined that once the FERC approves an exemption from RAAIM, it will require DR to be included on supply plans.22

The Draft Report’s focus on requiring DR to be on supply plans is misguided, because the CPUC already stated that would occur once the CAISO removes the inappropriate and unreasonable RAAIM requirement for DR. Accordingly, this is not part of the CPUC’s request of the CEC. The focus of the Draft Report should be on a counting methodology that is accurate and suitable for the CPUC RA program.

5. Avoidance of RAAIM may not be in the best interest of customers

CLECA is concerned that the utilities, in supporting LIP + ELCC, are overly worried about the possibility of RAAIM penalties for their DR, which penalties would either flow to shareholders or customers. Assuming the results of the current LIP, or LIP+LOLE, represent accurate and appropriate qualifying capacity values for the CPUC’s RA program, then the question should be what is cheaper: the possibility of a RAAIM penalty, or the cost of replacement power if ELCC incorrectly devalues a DR program. For example, assume the capacity value is inappropriately reduced by 20%. For 100 MW of DR, then 20 MW would have to be replaced for 2023. From the CPUC’s 2021 Avoided Cost Calculator, the cost of capacity in 2023 is $95/kw-year, or $7.92/kw-month. (It is highly unlikely capacity could be purchased at that price, because it does not reflect the recent increase in demand for batteries and current supply chain issues. The cost of replacement capacity is likely much higher.) Using the 2021 Avoided Cost Calculator model as a conservative estimate, the cost of replacement capacity for one month would be $158,333. The RAAIM penalty is 60% of the CAISO’s capacity procurement mechanism soft-offer cap, which would be $3.79/kw-month. Assuming 25% non-performance of the DR program,
the penalty would be $89,444/kw-month. Therefore, it would be in the best interest of customers to accept the RAAIM penalty, rather than replace capacity that is not necessary.

The option of using ELCC to get CAISO’s RAAIM exemption versus being subject to RAAIM is a prisoner’s dilemma. The choice is between the cost of having to replace the capacity due to an unfair capacity reduction, or to be subject to a RAAIM penalty. Either outcome imposes a cost burden on the customer.

6. The load impact protocols informed by loss of load carrying capability (LIP+ELCC) is fraught with problems

The complexity and time required to implement LIP+ELCC are likely being significantly underestimated by the CEC and the supporters of that methodology. In addition, the tight schedule does not afford time to validate the inputs and results. This runs counter to the CPUC’s statement that it “cannot adopt a study or methodology that has not been thoroughly reviewed”. The Draft Report does not mention a deadline for the process, but it recommends a deadline for parties to choose a counting method by July 1, 2022. Therefore between April 1, 2022, when the LIP results are provided, and July 1, 2022, the following will need to occur:

1. Develop a load impact forecast for 8760 hours matched to 20 years of historical weather data for every DR program
2. Validate the load impact forecast for every DR program
3. Run the reliability model for every DR program
4. Validate the ELCC results for every DR program

The first step requires every DR provider to develop a forecast of a DR program’s capability for 8760 hours for 20 years of historical weather patterns for all of its DR programs. This is a task that the DR providers currently do not perform, but would need to develop. The Draft Report does not discuss step 2 (to validate the DR forecasts), but the accuracy of the ELCC results is dependent on a good forecast. Step 3 is the input of the DR forecasts into the reliability model and running results for every DR program. At a January 18, 2022 meeting to discuss LIP+ELCC, the Energy Division was asked “how long this might take?”; the Energy Division staff did not know, because this modeling has not been performed previously. Step 4, which is not discussed in the Draft Report, is how to test and validate whether the ELCC results make sense. With so many complex steps, it is possible to have unknown errors occur that would create invalid results. In terms of timeline, all four steps must be completed between April 1 and mid-June so the DR providers can make their respective methodology selection by

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23 The RAAIM applies only if availability drops below 94.5%. 25% non-performance * 94.5% availability target * $3.79/kw-mo * 100MW * 1000 = $89,444/kw-month.
24 CPUC D.21-06-029 at 37.
25 The proposal is that the option exists to use LIP or LIP+ELCC, but providers would have to commit to a methodology by July 1, 2022. Draft report at 30.
July 1. CLECA doubts the results could be completed in 2.5 months with sufficient validation for meaningful results.

7. The scope of the CEC working group should not be expanded

The Draft Report recommends expanding the scope of the working group to include crediting, procurement, incentives, and settlements. CLECA disagrees with this recommendation. The CEC working group process has not reviewed a durable DR counting method and has not addressed other items requested by the CPUC, such as adders. The scope of the working group should not be expanded.

8. The Draft Report Contains Various Errors and Omissions

DR Avoids Capacity Costs Not Energy

The Draft Report on page 3, states that DR avoids “the purchase of high-priced energy”. DR is a capacity program which is intended to avoid expensive capacity. If a DR program has a high strike price, then when it is dispatched it will not avoid high energy costs. On page 4 there is lack of clarity on the compensation for energy value when DR is dispatched in the CAISO market. The value of the energy will go to the scheduling coordinator (such as a DR provider), who then allocates the revenues. In the case of the utilities, the value of the energy is shared with all customers and not just the DR participant. It cannot be assumed that all DR participants receive the energy value from CAISO settlement for a DR event.

Parties Objected to CAISO PRR Requirement for DR To Be on Supply Plans

On page 10, the Draft Report suggests only “several stakeholders” objected to the CAISO PRR 1280, which would have removed the ability of the CPUC to issue credits for DR programs. Actually, CAISO’s PRR 1280 was objected to by every load serving entity, every commenting DR provider, the CPUC, and all commenting customer groups.26

There Is No Mention of The DR Counting Principles and How They Were Utilized

The Draft Report mentions several weeks were committed to developing principles for DR counting, but it omitted including them in the draft report. Nor does the Draft Report utilize the principles to evaluate the CEC recommendations for a counting method.

Other Counting Options Were Omitted

The utilities proposed using a ELCC heatmap approach, which was based upon material in CAISO’s DR ELCC presentation. The heatmap approach would have been much simpler to implement than the full ELCC modeling effort. Despite the heatmap approach being developed by CAISO’s consultant, the CAISO stated that it would not be eligible for a RAAIM exemption. However, the Draft Report does not discuss the merits or shortcomings of the heatmap proposal. Josh Bode of Demand Side

26 See party comments on PRR 1280 at:
Analytics presented some alternative counting options, including an approach conceptually similar to CLECA’s LIP+LOLE. Yet the Draft Report is silent on the merits or shortcomings of these other options.

Key Findings in The CPUC Decision Regarding Effective Load Carrying Capability Are Missing

On page 13 of the Draft Report, the CEC mentions several findings the CPUC found in D.21-06-029. However, the following key point is omitted regarding ELCC:

We find that ELCC has not at this point been proven to be superior to LIPs or any other methodology at this time for DR. Further, the Commission cannot adopt a study or methodology that has not been thoroughly reviewed. 27

Incentives Exist for DR Performance, Even If DR Is Not on A Supply Plan

The Draft Report notes that if DR is not on a supply plan, or is not subject to RAAIM, it leaves “demand response capacity with no performance incentive” 28 That statement is incorrect as it ignores incentives for performance that exist at the program level. For example, the Base Interruptible Program, which makes up 54% of supply side DR, has penalties if a customer does not respond during a test or DR event. 29 Since the CPUC has determined that RAAIM is not suitable for DR, there is no reason to utilize the CAISO’s incentive mechanism to encourage performance. If CEC’s concern is about utilities as demand response providers not bidding the resource into the CAISO market when it is available, then the utilities already have an incentive to avoid any penalties from the CPUC. For third party DR providers, the bidding concern can be mitigated by including bidding requirements in the contract.

27 CPUC D.21-06-029 at 37.
29 Draft Report at 5, BIP is 804 MW of ~1500 MW of supply side DR.