

Docket:	<u>R.20-11-003</u>
Exhibit Number	_____
Commissioner	<u>M. Batjer</u>
Admin. Law Judge	<u>B. Stevens, S. Thomas</u>
Witnesses	<u>Lambert</u>
	<u>Castello</u>
	<u>Navis</u>



**PUBLIC ADVOCATES OFFICE**  
**CALIFORNIA PUBLIC UTILITIES COMMISSION**

**PREPARED TESTIMONY**

**Order Instituting Rulemaking  
To Establish Policies, Processes, and Rules  
To Ensure Reliable Electric Service in California  
In the Event of an Extreme Weather Event in 2021**

**R.20-11-003**

San Francisco, California  
September 1, 2021

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### List of Public Advocates Office Witnesses and Respective Chapters

<b>Chapter Number</b>	<b>Description</b>	<b>Witnesses</b>
-	Executive Summary	Christian Lambert
1	Planning Reserve Margin	Christian Lambert
2	Demand Response	Stephen Castello
3	Resource Adequacy Penalties	Kyle Navis
4	D.19-11-016 Procurement Penalties	Christian Lambert



1 The Commission also requests that parties’ testimony take into consideration the  
2 California Energy Commission (CEC) analysis presented in the CEC’s *Draft 2022 Net-*  
3 *short Analysis*.<sup>6</sup> This document presents a stack analysis demonstrating potential  
4 resource needs in summer 2022, given assumptions that characterize an extreme heat  
5 event in combination with worsening drought.<sup>7</sup>

6 This testimony presents Cal Advocates’ analysis and recommendations regarding  
7 actions the Commission should take to support reliability during the net peak period in  
8 summer 2022 and 2023, pursuant to the Amended Scoping Memo, the Guidance Ruling,  
9 the Staff Proposal, and the Draft 2022 Net-short Analysis.

## 10 I. SUMMARY OF RECOMMENDATIONS

11 Cal Advocates offers the following recommendations in response to the Amended  
12 Scoping Memo, the Guidance Ruling, and the Staff Proposal. Each of these  
13 recommendations is discussed in its own subsequent chapter.

14 1. The Commission should adopt a 17.5% Planning Reserve Margin (PRM)  
15 for the gross peak for 2023, and a 15% PRM for the net peak period for 2023;

16 2. The Commission should not authorize a new Demand Response Auction  
17 Mechanism (DRAM) auction for 2022 or increase the demand response budget for 2023;

18 3. The Commission should not increase resource adequacy (RA) penalties;  
19 and

20 4. The Commission should adopt the Staff Proposal’s suggested \$10 per  
21 kilowatt-month capacity-based fee for load-serving entities’ [LSEs] noncompliance with  
22 their procurement obligations under Decision (D.) 19-11-016.

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Commission Developed Staff Concepts Proposal Document and Seeking Comment in Opening  
Testimony Due September 1, 2021, R.20-11-003, August 16, 2021.

<sup>6</sup> E-mail Ruling Providing Informational Notice Regarding the California Energy Commission’s Draft  
Preliminary 2022 Summer Supply Stack Analysis, R.20-11-003, August 12, 2021.

<sup>7</sup> Draft CEC Preliminary 2022 Summer Supply Stack Analysis (Draft 2022 Net-short Analysis), p. 2.  
Available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=239251&DocumentContentId=72701>.

1                                   **CHAPTER 1 : PLANNING RESERVE MARGIN**

2                                   (Witness – Christian Lambert)

3 **I.       INTRODUCTION**

4               This chapter addresses Cal Advocates’ response to Issue 1(f) of the Amended  
5 Scoping Memo, “Planning Reserve Margin [PRM] adjustment for 2022 and/or 2023.”  
6 Cal Advocates recommends the Commission adopt a 17.5% PRM for 2023 for the gross  
7 load peak and a 15% PRM for the net peak period.

8 **II.      DISCUSSION**

9               **A.      Increasing the PRM for 2023 will enhance reliability.**

10             The PRM is a cushion of additional resources that the Commission uses to set  
11 system resource adequacy (RA) requirements. The PRM is currently formulated as 15%  
12 of the average, or 1-in-2, monthly load forecast.<sup>8</sup> This 15% cushion provides the  
13 California Independent System Operator (CAISO) with additional resources to meet  
14 federally required operating reserves, to obtain substitute capacity for forced outages, and  
15 to serve load in excess of the 1-in-2 forecast.

16             In the RA proceeding, Cal Advocates recommended the Commission adopt an  
17 increased PRM, starting with 17.5% for RA compliance year 2023 (for convenience, an  
18 excerpt of Cal Advocates’ RA comments detailing the full PRM proposal is included as  
19 Attachment A).<sup>2</sup> Cal Advocates’ proposal to increase the 2023 PRM will enhance  
20 reliability by ensuring additional resources are available to the CAISO, with no reduction

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<sup>8</sup> Interim Opinion, D.04-01-050, January 22, 2004, pp. 11, 193, Conclusion of Law Paragraph 5.

<sup>2</sup> Comments of the Public Advocates Office on Track 3B.1 and Track 4 Proposals, R.19-11-009, March 12, 2021. See Attachment A for excerpt. Under Cal Advocates’ proposal, RA requirements would increase further in 2024, using a 13% PRM in combination with the 1-in-5 forecast. For 2024, this would be equivalent to the 1-in-2 forecast plus a 17.8% PRM. Cal Advocates’ PRM proposal aligns with both the effective 17.5% PRM for 2021 and 2022 from this proceeding and the volume of new resources being brought online through active Integrated Resource Plan (IRP) procurement orders, including 11,500 megawatts (MW) that the Commission recently mandated LSEs to procure for 2023-2026, pursuant to the Decision Requiring Procurement to Address Mid-Term Reliability (2023-2026), D.21-06-035, June 24, 2021, Ordering Paragraph 1.

1 in capacity from the “effective” 17.5% PRM that currently applies through 2022.<sup>10</sup> The  
2 Commission has not moved to adopt an increased PRM for 2023 and beyond. Thus, the  
3 15% PRM remains in effect for 2023 unless and until the Commission adopts an  
4 increased PRM.

5 The 15% PRM that currently applies to 2023 is too low to mitigate reliability risks  
6 associated with climate change impacts, most especially the greater incidence of higher  
7 temperatures – in turn causing air conditioning loads in excess of the 1-in-2 forecast. The  
8 15% PRM is insufficient to meet reliability needs when extreme heat causes high loads  
9 because 15% is an insufficient cushion of additional resources to simultaneously provide  
10 for the CAISO’s required reserves, forced outages, and the excess load above the 1-in-2  
11 forecast. At all hours, the CAISO must maintain 6 percentage points of the PRM for  
12 operating reserves, and forced outages occur in the range of 6-7% in the peak summer  
13 months.<sup>11</sup> Thus, on a day with a 6-7% forced outage rate, the 15% PRM only includes a  
14 cushion of 2-3% for load above the 1-in-2 forecast level. This is insufficient to achieve  
15 the 1-in-5 forecast, which is 4.3% higher than the 1-in-2 forecast.<sup>12</sup> Cal Advocates’  
16 proposal to increase the PRM for 2023, therefore, will enhance reliability by ensuring  
17 another incremental 2.5% of resources are available to meet additional load above the  
18 1-in-2 forecast – more than enough to meet the 1-in-5 forecast while also providing for  
19 the CAISO’s 6% required reserves and 6-7% for forced outages.<sup>13</sup>

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<sup>10</sup> Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company to Take Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022, D.21-03-056, March 25, 2021, pp. 42-45.

<sup>11</sup> See North American Electric Reliability Corporation, *General Availability Review (Weighted EFOR) Dashboard*, available at <https://www.nerc.com/pa/RAPA/Pages/GeneralAvailabilityReview.aspx>. EFOR stands for “equivalent forced outage rate.”

<sup>12</sup> Comments of the Public Advocates Office on Track 3B.1 and Track 4 Proposals, R.19-11-009, March 12, 2021, p. 7. See Attachment A for excerpt.

<sup>13</sup> Cal Advocates also proposed companion policies that could more cost-effectively improve the load forecast coverage of the PRM beyond the 1-in-5 forecast. These policy suggestions include the re-examination of availability penalties and thermal net qualifying capacity for ambient derating in the summer. Cal Advocates does not recommend these policies for adoption in this proceeding, as the RA proceeding should examine each in more detail. See Comments of the Public Advocates Office on Track 3B.1 and Track 4 Proposals, R.19-11-009, March 12, 2021, p. 12-13. See Attachment A for excerpt.

1 Cal Advocates acknowledges that two recent IRP procurement decisions<sup>14</sup>  
2 collectively require LSEs to sign long-term contracts with new capacity that totals 5,300  
3 MW by 2023. Considering the volume of expected retirements, this new capacity will  
4 bring significant relief to the currently tight market conditions. However, this new  
5 capacity is necessary but not sufficient to assure ratepayers of reliability. Neither IRP  
6 decision includes provisions to ensure that LSEs collectively renew their contracts with  
7 existing resources that may continue to be necessary for reliability. Rather, each decision  
8 assumes a baseline of existing resources without directly addressing the contracting  
9 regime that would ensure existing resources remain available as assumed in the baseline.

10 Accordingly, increasing the PRM for 2023 is necessary to ensure that LSEs' new  
11 IRP contracts do not simply displace contracts with existing RA resources that may lose  
12 their current RA contract between now and 2023 but that remain necessary for reliability.  
13 The CAISO has already shared this same concern in this proceeding with respect to the  
14 need to increase the 2023 PRM, particularly as the Commission's RA requirements affect  
15 the CAISO's ability to exercise its backstop procurement authority.<sup>15</sup>

16 **B. Increasing the PRM for 2023 can also enhance reliability**  
17 **during the net peak period.**

18 The Guidance Ruling directs parties' testimony to the specific matter of net peak  
19 reliability. Likewise, the CAISO also recommends in this proceeding that the  
20 Commission "apply any adjustments to the PRM at both the gross demand and the load at  
21 8 p.m. (as a proxy for the net demand peak period)."<sup>16</sup> The CAISO asserts that the  
22 effective PRM at this net peak hour currently ranges from 6% to 14%.<sup>17</sup>

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<sup>14</sup> Decision Requiring Electric System Reliability Procurement for 2021-2023, D.19-11-016, November 7, 2019; D.21-06-035.

<sup>15</sup> Comments of the California Independent System Operator Corporation on Proposed Amended Scoping Memo, R.20-11-003, August 6, 2021, pp. 2-3.

<sup>16</sup> Comments of the California Independent System Operator Corporation on Proposed Amended Scoping Memo, R.20-11-003, August 6, 2021, p. 3.

<sup>17</sup> Comments of the California Independent System Operator Corporation on Proposed Amended Scoping Memo, R.20-11-003, August 6, 2021, p. 3.



1 In the IRP, Cal Advocates supported directly targeting the net peak period. Cal  
2 Advocates recommended 9,350 MW of new resources, including capacity specifically  
3 meant to provide net peak energy in place of the solar portion of the RA fleet, which will  
4 be unable to provide energy when the peak load migrates to hour ending 20 in September  
5 2023.<sup>18</sup> Ultimately, the IRP required 11,500 MW of new resources, including 2,000 MW  
6 for 2023 and including “a minimum of 2,500 MW of incremental NQC be from zero-  
7 emitting generation, generation paired with storage, or demand response resources, that  
8 are available every day between 5 p.m. and 10 p.m. daily.”<sup>19</sup> These resources are  
9 incremental to the 3,300 MW of resources required by D.19-11-016.<sup>20</sup>

10 This mix of requirements for LSEs’ IRP procurement, as well as the large volume  
11 of batteries being procured pursuant to D.19-11-016,<sup>21</sup> will generally support the LSEs’  
12 ability to contract with new resources to meet reliability needs in the net peak period.  
13 Such resources will enhance reliability, as the RA program continues to count solar  
14 resources as providing significant net qualifying capacity, though such solar RA  
15 resources will not provide energy in the critical period after sunset.

16 However, the extent to which LSEs are procuring resources with attributes that  
17 can contribute to the net peak in 2023 is not known precisely. The exact timing of the  
18 2,500 MW of D.21-06-035 resources “that are available every day between 5 p.m. and 10  
19 p.m.” can occur any time between 2023 and 2026. In addition, that 5-hour requirement is  
20 not included in D.19-11-016, and LSEs’ D.19-11-016 procurement of storage resources  
21 with shorter (e.g., 4-hour) durations may not fully capture the entire period of peak and  
22 net peak needs.

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<sup>18</sup> The Public Advocates Office Reply Comments on Mid-term Reliability Analysis and Proposed Procurement Requirements, R.20-05-003, April 9, 2021, p. 2. Of the total procurement level, Cal Advocates recommended 2,700MW be brought online for 2023, or 1,850MW in the event that the Redondo Beach power plant remains available (p. 5).

<sup>19</sup> D.21-06-035, Conclusion of Law Paragraph 14 and Ordering Paragraph 1.

<sup>20</sup> D.19-11-016, Ordering Paragraph 3.

<sup>21</sup> *Status Update on Procurement in Compliance with D.19-11-016 (IRP Procurement Order: Energy Division Staff Review*, August 2021.

1           Therefore, it is unclear if the IRP decisions provide enough guidance to ensure that  
2 LSEs will bring resources online by 2023 with sufficient attributes as to raise the net peak  
3 *PRM* from the CAISO’s asserted effective range of 6%-14% all the way to Cal  
4 Advocates’ proposed 17.5%. If LSEs are not planning to bring on such resources by  
5 2023—for example, if LSEs are planning to meet the 2,500 MW requirement for “zero-  
6 emitting generation, generation paired with storage, or demand response resources, that  
7 are available every day between 5 p.m. and 10 p.m.” in later years, with long-lead time  
8 resources such as geothermal—then additional requirements from a new decision in this  
9 proceeding could result in unnecessary ratepayer costs associated with interference in the  
10 LSEs’ ongoing solicitations. Instead, any new requirements should reasonably anticipate  
11 and accommodate LSEs’ ongoing procurement efforts. Cal Advocates, therefore,  
12 recommends that the Commission apply the 17.5% 2023 *PRM* to the gross peak hour, but  
13 not to the net peak period. Instead, the Commission should apply a more reasonably  
14 achievable 15% *PRM* to the net peak period.

15           The Commission should defer additional work on related implementation issues to  
16 the RA proceeding. Chief among these issues is the matter of defining the net peak  
17 period itself. As noted above, the CAISO recommends using hour ending 20 as a proxy  
18 for the net peak period, yet the CEC forecasts that hour ending 20 will be the gross peak  
19 for September 2023. As such, Cal Advocates does not recommend this proceeding adopt  
20 the use of hour ending 20 as a proxy for the net peak. Instead, the RA proceeding should  
21 examine the matter. Additional work to define the net peak period is necessary to prevent  
22 the inadvertent adoption of duplicative or contrary rules for the gross peak and net peak  
23 *PRMs*. Other issues that the RA proceeding should address include clarification of how  
24 resources or resource attributes should count towards the net peak period, including any  
25 necessary adjustments to the current RA counting methodologies.

26           **C.     Increasing the *PRM* for 2023 does not preclude additional**  
27           **refinement.**

28           In D.21-06-029, which resolved the “Track 3B.1” and “Track 4” RA issues, the  
29 Commission did not comment on the 2023 *PRM*. Instead, that RA decision addressed the

1 2022 PRM and linked potential future PRM changes to additional “loss of load  
2 expectation” (LOLE) analysis, to be conducted by Energy Division staff.<sup>22</sup>

3           Increasing the 2023 PRM in this proceeding would not preclude the Commission  
4 from future refinement in the RA proceeding, including in response to the anticipated  
5 Energy Division analysis. On the other hand, failing to increase the PRM would increase  
6 the uncertainty of the regulatory regime, could pose a risk to the integrity of LSEs’  
7 procurement efforts, and may be inconsistent with a least-regrets approach, for several  
8 reasons:<sup>23</sup>

- 9           • Failure to increase the PRM reduces the IRP’s ability to plan  
10           appropriately for future system RA capacity;<sup>24</sup>
- 11           • Failure to increase the PRM mutes a key market signal that  
12           informs LSEs’ and project developers’ evaluations of projects  
13           and development timelines;<sup>25</sup> and
- 14           • Failure to increase the PRM raises questions as to why the  
15           Commission hesitates to link the effective 17.5% PRM from this  
16           proceeding with the even higher PRM<sup>26</sup> used for planning  
17           purposes in the IRP for 2023 onwards.<sup>27</sup>

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<sup>22</sup> Decision Adopting Local Capacity Obligations for 2022-2024, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program, D.21-06-029, June 25, 2021, p. 19.

<sup>23</sup> Here, Cal Advocates reiterates points made in the RA proceeding. See Comments of the Public Advocates Office on the Proposed Decision Adopting Local Capacity Obligations for 2022-24, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program, R.19-11-009, June 10, 2021, pp. 1-7.

<sup>24</sup> Comments of the Public Advocates Office on the Proposed Decision Adopting Local Capacity Obligations for 2022-24, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program, R.19-11-009, June 10, 2021, p. 2

<sup>25</sup> Comments of the Public Advocates Office on the Proposed Decision Adopting Local Capacity Obligations for 2022-24, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program, R.19-11-009, June 10, 2021, p. 3.

<sup>26</sup> D.21-06-035, p. 12. Cal Advocates notes that the planning PRM in the IRP is distinct from the RA PRM used to set system RA requirements. In general, Cal Advocates has supported a slightly higher IRP planning PRM, for the purpose of preventing the recurrence of tight RA market conditions.

<sup>27</sup> Comments of the Public Advocates Office on the Proposed Decision Adopting Local Capacity Obligations for 2022-24, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program, R.19-11-009, June 10, 2021, p. 3.

1 The RA decision also failed to justify moving forward with additional LOLE analysis  
2 *before* adopting an increase in the 2023 PRM. The RA decision did not explain:<sup>28</sup>

- 3 • Why additional LOLE analysis must precede the adoption of a  
4 higher PRM for 2023;
- 5 • How the LOLE analysis – an iterative, trial-and-error study  
6 process – will provide advantages that will exceed the  
7 controversial aspects of such an approach; or
- 8 • Why increasing the 2023 PRM would preclude or constrain the  
9 Commission from taking additional action to refine the PRM  
10 upon the eventual publication of the LOLE analysis and the  
11 solicitation of party comments on the LOLE analysis.

12 Ratepayers’ core interest in reliability supports increasing the 2023 PRM in this  
13 proceeding. Should additional refinement be necessary, the Commission can and should  
14 pursue such refinement in the RA proceeding.

15 Waiting to increase the 2023 PRM may come at the cost of interference with  
16 LSEs’ ongoing solicitations and developers’ project timelines. This is especially true if  
17 the Commission adopts Cal Advocates’ and the CAISO’s recommendation to target  
18 reliability needs by applying a PRM to the net peak, thereby adding a new parameter to  
19 LSEs’ procurement. LSEs are already working to procure new resources pursuant to the  
20 IRP procurement decisions, but as described above, those IRP decisions may not provide  
21 enough guidance to ensure that LSEs’ ongoing procurement work will target sufficient  
22 resources with attributes needed for the net peak.

23 The Commission can minimize any disruption to LSEs’ solicitations by adopting  
24 Cal Advocates’ proposed 17.5% PRM for 2023 for the gross load peak, and 15% for the  
25 net peak, rather than waiting in the RA proceeding for the completion of unscheduled  
26 LOLE analysis and related procedural activities. Increasing the PRM now does not  
27 preclude or constrain the Commission from further refinement of the 2023 PRM upon  
28 additional record development in the RA proceeding.

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<sup>28</sup> Comments of the Public Advocates Office on the Proposed Decision Adopting Local Capacity Obligations for 2022-24, Flexible Capacity Obligations for 2022, and Refinements to the Resource Adequacy Program, R.19-11-009, June 10, 2021, pp. 4-5.

1 **CHAPTER 2 : DEMAND RESPONSE**

2 (Witness – Stephen Castello)

3 **I. INTRODUCTION**

4 This chapter addresses Cal Advocates’ response to the modifications to existing  
5 Demand Response (DR) programs considered in the Amended Scoping Memo<sup>29</sup> and the  
6 Staff Proposal on modifications to existing DR programs.<sup>30</sup> Cal Advocates recommends  
7 the Commission decline to authorize an additional Demand Response Auction  
8 Mechanism (DRAM) Pilot Auction for 2022 or increase the budget for 2023.

9 **II. DISCUSSION**

10 The Commission should not authorize an additional DRAM Pilot Auction for  
11 2022 or increase the budget for 2023 as recommended in the Staff Proposal.<sup>31</sup> The staff’s  
12 proposed additional requirements for future auctions should be considered in the  
13 forthcoming DR budget applications.<sup>32</sup>

14 The issues Cal Advocates previously testified to around billing and performance  
15 with Proxy Demand Resources (PDRs) secured through the DRAM continue to be  
16 relevant concerns.<sup>33</sup> This includes:

- 17 • DRAM sellers failing to aggregate sufficient MWs to satisfy  
18 DRAM contracts;
- 19 • DRAM PDRs underperforming when dispatched by the  
20 California Independent System Operator (CAISO); and
- 21 • Significant discrepancies in PDR performance reported to the  
22 CAISO compared to the value claimed on DRAM Invoices.

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<sup>29</sup> Amended Scoping Memo, pp. 4-5.

<sup>30</sup> Energy Division Staff Concepts Paper Proposals for Summer 2022 and 2023 Reliability Enhancements, August 16, 2021 (Staff Proposal), pp. 2-9.

<sup>31</sup> Staff Proposal, pp. 6-7.

<sup>32</sup> Staff Proposal, pp. 7-8.

<sup>33</sup> Opening Testimony of the Public Advocates Office, R.20-11-003, January 11, 2021 (January Opening Testimony), Chapter 2.

1 Cal Advocates' prior findings were further substantiated by the CAISO's  
2 Department of Market of Monitoring (DMM). In its report on DR performance during the  
3 August and September 2020 heat events, the DMM found that aggregate third-party DR  
4 significantly underperformed on the days Californians experienced forced outages.<sup>34</sup> For  
5 instance, on Friday, August 14, 2020, third-party DR only curtailed 41%-45% of the  
6 MWs dispatched between 6pm - 8pm. That is, when ratepayers most needed these  
7 resources to perform, they were unable to provide reliable energy. The Commission  
8 should not authorize further DRAM procurement at this time, as it would be risky to seek  
9 additional MWs from third-party DR providers with track records of underperformance .

10 This testimony will also explain:

- 11 • The DRAM pilot should not be expanded until it meets  
12 previously established goals.
- 13 • Additional or expanded DRAM auctions are unlikely to procure  
14 significant quantities that can reduce demand at peak or net-peak  
15 hours.

16 **A. The DRAM pilot should not be expanded until it meets**  
17 **previously established goals.**

18 As discussed in Cal Advocate's January Opening Testimony, DRAM is a pilot  
19 program that has not achieved the Commission's criteria to be considered successful.<sup>35</sup>

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<sup>34</sup> "In aggregate on August 14 in hours ending 19 and 20, the supply plan demand response fleet reported to curtail about 79 megawatts of load in each hour, which was 41 to 45 percent of total megawatts dispatched in each hour. Limiting dispatches and response to individual resources' resource adequacy values, total response was 51 to 57 percent of real-time dispatches on August 14 in hours ending 19 and 20.

In aggregate on August 15 in hours ending 19 and 20, the supply plan demand response fleet reported to curtail about 20 to 30 megawatts of load in each hour, which was 25 percent of total capacity dispatched in each hour. Limiting dispatches and response to individual resources' resource adequacy values, total response was 22 to 36 percent of real-time dispatches on August 15 in hours ending 19 and 20."

Demand Response Issues and Performance, Department of Market Monitoring, February 25, 2021, p. 20, <http://www.caiso.com/Documents/ReportonDemandResponseIssuesandPerformance-Feb252021.pdf>.

<sup>35</sup> "In its examination of DRAM auctions and deliveries between 2015 and 2017, Commission Staff found that DRAM failed to achieve three of the six evaluation criteria necessary to be deemed successful. These criteria asked:

*(continued on next page)*

1 Therefore, DRAM PDRs are still unable to be relied upon to meet generation needs.  
2 DRAM resources have not shown themselves to be reliable when dispatched and, in  
3 many instances, providers have failed to aggregate enough capacity to satisfy their  
4 contracts.<sup>36</sup>

5 The Staff Proposal suggests holding an additional partial year auction for 2022  
6 deliveries and expanding the DRAM budget for 2023.<sup>37</sup> However, there is no evidence to  
7 suggest additional auctions and increased budgets would lead to the procurement of more  
8 reliable resources. In fact, the Commission previously determined that the DRAM should  
9 not be expanded until improvements are evident and it has been deemed successful in the  
10 areas of performance and reliability.<sup>38</sup> Moreover, the Commission has already established  
11 an evaluation process, with a new evaluation report due before the end of 2021, to  
12 reassess the performance of DRAM resources delivered in years 2018-2021.<sup>39</sup> It would  
13 not be a prudent nor reasonable expenditure of ratepayer funds to procure resources  
14 unable to provide real capacity that can be called upon when California customers need it  
15 the most. The Commission also risks undermining the ongoing yearslong DRAM  
16 refinement process by creating separate tracks with varying requirements. Therefore, the  
17 Commission should not order any additional DRAM procurements.

- 
- Were offer prices competitive in wholesale markets?
  - Did DR Providers aggregate contracted capacity in a timely manner?
  - Were resources reliable when dispatched?"

January Opening Testimony, Chapter 2, p. 1.

<sup>36</sup> January Opening Testimony, Chapter 2, pp. 2-3.

<sup>37</sup> Staff Proposal, p. 7.

<sup>38</sup> Decision Addressing Auction Mechanism, Baselines, and Auto Demand Response for Battery Storage, D.19-07-009, July 11, 2019, Conclusion of Law Paragraph 3.

<sup>39</sup> D.19-07-009, Ordering Paragraph 16.



1           **B. Additional or expanded DRAM auctions are unlikely to**  
2           **procure significant quantities that can reduce demand at**  
3           **peak or net-peak hours.**

4           Additionally, the Commission should not authorize an additional DRAM auction  
5 as it is unlikely to result in the procurement of a significant quantity of reliable resources.  
6 The total quantity of MWs being bid in the most recent DRAM auction has remained flat  
7 or decreased when compared to previous years.<sup>40</sup> Furthermore, the total MWs being  
8 offered are concentrated in a small number of firms with just two providers accounting  
9 for two-thirds (67%) of all the August 2020 MWs bid across all three IOUs.<sup>41</sup>

10           This narrowing and concentration in the DRAM process further underscores why  
11 the Commission should not rely on DRAM to procure reliability resources at this time.  
12 The Commission previously found that some demand response providers (DRPs) perform  
13 well, and others perform poorly.<sup>42</sup> Poor performing DRPs have continued to win  
14 contracts and then underperform when called upon to provide energy at critical times in  
15 2019 and 2020.<sup>43</sup> This is underscored in PG&E’s decision to exclude offers it determined  
16 were not viable from its most recent DRAM auction.<sup>44</sup> It is unclear if PG&E would even  
17 have enough viable MWs to conduct a supplementary DRAM auction for 2022  
18 deliveries. As DRAM is a carve-out<sup>45</sup> with a limited offer pool, mandating IOUs procure  
19 additional IOU DRAM auctions is likely to result in procurement of low viability

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<sup>40</sup> San Diego Gas & Electric Company 2022 Demand Response Auction Mechanism (DRAM 7) Request for Offers Final Report of the Independent Evaluator On the Bid Evaluation and Selection Process, Prepared by Merrimack Energy Group, Inc (SDG&E Merrimack Report), p. 33; Southern California Edison Company 2022 Demand Response Auction Mechanism (DRAM 7) Request for Offers Final Report of the Independent Evaluator On the Bid Evaluation and Selection Process, Prepared by Merrimack Energy Group, Inc (SCE Merrimack Report), p. 35; Pacific Gas & Electric Company 2022 Demand Response Auction Mechanism (DRAM 7) Request for Offers Final Report of the Independent Evaluator On the Bid Evaluation and Selection Process, Prepared by Merrimack Energy Group, Inc (PG&E Merrimack Report), p. 25.

<sup>41</sup> PG&E Merrimack Report, p. 38; SCE Merrimack Report, p. 35; SDG&E Merrimack Report p. 33.

<sup>42</sup> D.19-07-009, Finding of Fact Paragraph 10.

<sup>43</sup> January Opening Testimony, Chapter 2, pp. 4-7.

<sup>44</sup> PG&E Merrimack Report, p. 44.

<sup>45</sup> D.19-12-040, Finding of Fact Paragraph 11.



- 1 resources that will be unable to reduce peak and net-peak load when needed. Thus, the
- 2 Commission should not expand the DRAM at this time.

1                                   **CHAPTER 3 : RESOURCE ADEQUACY PENALTIES**

2                                   (Witness – Kyle Navis)

3   **I.     INTRODUCTION**

4           This chapter addresses Cal Advocates’ response to the Staff Proposal’s concept of  
5 increasing resource adequacy (RA) penalties. The Staff Proposal states, “[p]ursuant to  
6 D.20-06-031, the RA penalty structure is currently \$8.88 kW/month for load-serving  
7 entities (LSEs) who fail to meet summer system RA obligations in the month ahead. The  
8 Commission could consider doubling the penalties for LSEs who may be short in August  
9 2022 and September 2022.”<sup>46</sup> Cal Advocates recommends the Commission decline to  
10 increase RA penalties.

11   **II.    DISCUSSION**

12           The Commission states that the goal for the Staff Proposal is, “to address Summer  
13 2022 and 2023 reliability needs at net peak.”<sup>47</sup> The Staff Proposal contemplates  
14 “doubling the [system RA] penalties for load-serving entities (LSEs) who may be short in  
15 August 2022 and September 2022.”<sup>48</sup> Increasing RA penalties may be ineffective at  
16 increasing capacity over this short time frame. Therefore, the Commission should not  
17 double system RA penalties at this time.

18           Cal Advocates supported the Commission’s efforts in the past two years to  
19 reinforce RA program compliance. Those efforts included the adoption of shaped  
20 penalty prices for summer and non-summer months<sup>49</sup> and the application of a new tiered

---

<sup>46</sup> Staff Proposal, Section C.

<sup>47</sup> E-Mail Ruling Issuing Commission Developed Staff Concepts Proposal Document and Seeking Comment in Opening Testimony Due September 1, 2021, R.20-11-003, August 16, 2021, p. 5.

<sup>48</sup> E-Mail Ruling Issuing Commission Developed Staff Concepts Proposal Document and Seeking Comment in Opening Testimony Due September 1, 2021, R.20-11-003, August 16, 2021, p. 22.

<sup>49</sup> D.20-06-031 reshaped the RA deficit penalty from a constant \$6.66/kW-mo price to \$8.88/kW-mo during summer months (May-October) and \$4.44/kW-mo for non-summer months. Decision Adopting Local Capacity Obligations for 2021-2023, Adopting Flexible Capacity Obligations for 2021, and Refining the Resource Adequacy Program, D.20-06-031, June 25, 2020, p. 61; Ordering Paragraph 20.

1 penalty structure that can double and triple penalty prices for deficient LSEs.<sup>50</sup> Penalty  
2 prices raise the economic opportunity cost of noncompliance and generally incent LSEs  
3 to procure generation. However, high summer RA capacity prices<sup>51</sup> and the California  
4 Independent System Operator’s (CAISO) backstop procurement efforts<sup>52</sup> are already  
5 sending unequivocal economic signals that more supply is urgently needed in California.  
6 Increased RA penalties are not necessary to convey the same market signals.

7 In addition, factors outside of resource developers’ (and load-serving  
8 entities’[LSEs]) control may threaten projects currently under development. These factors  
9 include global shipping and supply chain delays,<sup>53</sup> the residual effects of delays caused  
10 by former President Trump’s Executive Order 13920,<sup>54</sup> and local permitting delays due to  
11 COVID-19 lockdowns.<sup>55</sup> Resource developers and LSEs may be unable to mitigate any

---

<sup>50</sup> D.21-06-029, pp. 56-57.

<sup>51</sup> The highest RA capacity prices in 2019—two years ago—reached \$15.25/kW-mo, and supply constraints have only worsened since that point, which strongly suggests that price increases will continue their upward trend for the foreseeable future. Jonathan Lakey, et al., *2019 Resource Adequacy Report*, CPUC Energy Division, March 2021, p. 22. See also increases in the Commission-developed Market Price Benchmark (MPB) RA Adder prices at Table 2: MPB RA Adders (Public) from IOU ERRA Forecast filings (\$/kW-month) in *The Public Advocates Office Comments on Administrative Law Judge’s Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements (Public Version)*, March 26, 2021, p. 9.

<sup>52</sup> See Marybel Batjer, David Hochschild, and Elliot Mainzer, *Joint Statement from the CPUC President Marybel Batjer, CEC Chair David Hochschild, and California ISO CEO Elliot Mainzer on decision to procure additional energy resources for summer*, July 1, 2021, <http://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-JointStatementandLetter.pdf>.

<sup>53</sup> See Olivia Rockeman, *Shipping Delays and Supply Shortages to Constrain Firms All Year*, Bloomberg, April 29, 2021, <https://www.bloomberg.com/news/newsletters/2021-04-29/supply-chains-latest-shipping-delays-to-restrict-firms-all-year>; Claire Bushey and Matthew Rocco, ‘*The Global Supply Chain Was Not Built for This*’: *Freight Delays Hammer US*, Financial Times, August 1, 2021, <https://www.ft.com/content/03a693a7-0445-41dd-a7f3-c1b6f162e5ef>; David J. Lynch, *From Ports to Rail Yards, Global Supply Lines Struggle Amid Virus Outbreaks in the Developing World*, July 26, 2021, <https://www.washingtonpost.com/business/2021/07/27/supply-chains-freight-rail-ports/>.

<sup>54</sup> Executive Order 13920 implemented prohibitions on the transaction and installation of certain bulk-power electric equipment. See: Executive Office of the President, *Securing the United States Bulk-Power System*, May 4, 2020, <https://www.federalregister.gov/documents/2020/05/04/2020-09695/securing-the-united-states-bulk-power-system>.

<sup>55</sup> Whitney Jarrett and Ray Chen, *COVID-19 Mitigation Has Delayed Construction of Some Electric Generators*, U.S. Energy Information Administration, July 15, 2020, <https://www.eia.gov/todayinenergy/detail.php?id=44376>.

1 of these factors. As a result, increased system RA deficiency penalty prices are unlikely  
2 to increase capacity while such conditions persist.

3 Furthermore, the recently adopted penalty system doubles or triples penalty rates  
4 after an LSE has multiple RA showing deficiencies.<sup>56</sup> This is sufficient incentive for  
5 LSEs with RA deficiencies to procure new or existing resources to avoid the potential of  
6 incurring a much higher cost penalty if the deficiency continues. This tiered penalty  
7 system will be implemented for the first time in the 2022 RA compliance year, imposing  
8 a reasonable cost for non-compliance.<sup>57</sup> The Commission should not alter the penalty  
9 prices for 2022 or 2023 in this proceeding.

10 If the Commission instead chooses to adopt higher system RA deficiency  
11 penalties, the Commission should reconsider the Alliance for Retail Energy Markets'  
12 (AReM) proposal that was declined in D.21-06-029.<sup>58</sup> AReM proposed that the  
13 Commission rebate up to half an LSE's year-ahead system RA deficiency penalty if the  
14 LSE successfully cures their deficiency by the time month-ahead RA showings are due.<sup>59</sup>  
15 Cal Advocates supported AReM's proposal as an ongoing incentive to cure  
16 deficiencies.<sup>60</sup>

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<sup>56</sup> D.21-06-029, pp. 59-60.

<sup>57</sup> D.21-06-029, Ordering Paragraph 16.

<sup>58</sup> D.21-06-029, p. 60. See also Cal Advocates' statement of support for AReM's proposal: Comments of the Public Advocates Office on Track 3B.1 and Track 4 Proposals, R.20-11-003, March 12, 2021. p. 35.

<sup>59</sup> AReM, *R.19-11-009 Track 3B.1 Proposal*, January 28, 2021.

<sup>60</sup> Comments of the Public Advocates Office on Track 3B.1 and Track 4 Proposals, R.20-11-003, March 12, 2021. p. 35.

1                                   **CHAPTER 4 : D.19-11-016 PROCUREMENT PENALTIES**

2                                   (Witness – Christian Lambert)

3   **I.     INTRODUCTION**

4           This chapter addresses Cal Advocates’ response to the Staff Proposal’s suggestion  
5 of penalties for LSE non-compliance with IRP procurement obligations under  
6 D.19-11-016. The Staff Proposal states,<sup>61</sup>

7           The CPUC could consider putting all LSEs on notice that it intends  
8 to impose fixed penalties (for instance, potentially \$50,000 per  
9 incident) or capacity-based (potentially \$10/kW by Month for each  
10 month delay) for any LSE that fails to achieve commercial online  
11 dates consistent with the order. The CPUC may consider a grace  
12 period of up to six months from the expected online dates. Although  
13 collectively, LSEs contracted for sufficient Tranche 1 resources,  
14 some Tranche 1 projects were delayed for a variety of reasons.  
15 Penalties (with or without a grace period) may ensure that the  
16 delayed Tranche 1 resources materialize prior to June 2022.  
17 Penalties (with or without a grace period) may ensure that Tranche 2  
18 and 3 resources materialize with minimum delays in 2022 and 2023.  
19

20 Cal Advocates recommends adopting the proposed capacity-based penalty for LSEs’  
21 obligations under D.19-11-016, as well as a longer grace period for LSEs’ 2021  
22 obligations. Cal Advocates does not recommend extending the grace period for 2022 and  
23 2023. However, the Commission should provide LSEs with a penalty waiver process due  
24 to the possibility that pandemic-related disruptions may continue.

25   **II.    DISCUSSION**

26           **A.     Penalties are an appropriate incentive for LSE**  
27                   **compliance with IRP procurement obligations.**

28           Cal Advocates supported the Commission’s imposition of penalties for IRP  
29 procurement non-compliance in D.21-06-035<sup>62</sup> and agrees with the Staff Proposal that

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<sup>61</sup> Staff Proposal, Section C (no pagination).

<sup>62</sup> *The Public Advocates Office Comments on Administrative Law Judge’s Ruling Seeking Feedback on*  
(continued on next page)

1 applying penalties to LSEs’ obligations under D.19-11-016 may enhance reliability.  
2 Penalties incentivize LSEs to meet their procurement obligations in a timely manner.  
3 Compliance not only reduces the prospect of ratepayer costs that would result from  
4 backstop procurement but also prevents free-riding by deficient LSEs on other LSEs’  
5 over-procurement.

6 The Staff Proposal suggests either a fixed penalty of \$50,000 per incident or a  
7 capacity-based penalty of \$10 per kilowatt-month. Cal Advocates recommends the  
8 Commission adopt the \$10 per kilowatt-month capacity-based penalty and decline to  
9 adopt any fixed per-incident penalty. The capacity-based penalty would be scaled to each  
10 LSE’s procurement obligation—ultimately based on each LSE’s load share<sup>63</sup>—affording  
11 each LSE with a commensurate incentive. The \$10 per kilowatt-month level is generally  
12 reasonable. On the other hand, the incentive of the fixed penalty option would vary  
13 according to each LSE’s size and wherewithal to absorb a \$50,000 penalty. While the  
14 Staff Proposal does not define “incident” for purposes of the suggested \$50,000 per  
15 incident penalty option, there are many LSEs of large enough size that \$50,000 would not  
16 constitute a meaningful incentive to comply.

17 Cal Advocates recommends that the penalty process be applied to LSEs’ 2022 and  
18 2023 obligations but supports applying a grace period to their 2021 obligations. Energy  
19 Division staff have already reviewed LSEs’ procurement data and determined that “[a]ll  
20 individual LSEs demonstrated procurement sufficient for Tranche 1” and “[m]ost projects  
21 and MWs will be online within 6 months [of August 2021].”<sup>64</sup> Energy Division,  
22 therefore, determined that backstop procurement is unnecessary. Given these  
23 circumstances, Cal Advocates agrees with the Staff Proposal that a grace period is  
24 appropriate for LSEs’ 2021 obligations. However, the Staff Proposal does not link the

---

*Mid-term Reliability Analysis and Proposed Procurement Requirements*, R.20-05-003, March 26, 2021, p. 31.

<sup>63</sup> D.19-11-016, Ordering Paragraph 3.

<sup>64</sup> *Status Update on Procurement in Compliance with D.19-11-016 (IRP Procurement Order: Energy Division Staff Review*, R.20-05-003, August 2021.

1 proposed six-month grace period to a meaningful deadline related to system reliability.  
2 The six-month period results in an imputed online date of February 1, 2022, a month in  
3 which forecast peak loads are much lower than peak summer loads. Penalties for  
4 noncompliance in late winter and spring 2022 will not meaningfully improve reliability.  
5 Instead, the Commission should associate the 2021 obligation penalty with early summer  
6 2022, when monthly peak loads rise and heat events may begin to occur. Cal Advocates  
7 therefore, recommends a ten-month grace period—i.e., an imputed online date of June 1,  
8 2022—for the 2021 obligation associated with LSEs’ delayed projects.

9 Finally, the Commission should explicitly adopt penalty cost-sharing between  
10 bundled and unbundled service customers, in the event that an investor-owned utility  
11 (IOU) incurs a penalty. IOUs are procuring not only for their own bundled customers but  
12 also for the unbundled customers of those LSEs that elected to opt out of their D.19-11-  
13 016 procurement responsibility. Because the IOUs’ procurement efforts are not  
14 exclusively undertaken for bundled customers, penalties should be shared with the  
15 responsible unbundled customers’ LSEs.

16 **B. The Commission should adopt a penalty waiver process in**  
17 **the event of an LSE’s demonstration of best efforts.**

18 In Chapter 3 (Witness - Kyle Navis), Cal Advocates explains that its opposition to  
19 increasing RA penalties is due in part to the likelihood of force majeure events associated  
20 with pandemic-related supply chain disruptions (see pp. 3-1 and 3-2). While Energy  
21 Division concluded that most delays of LSEs’ 2021 obligations will be resolved within  
22 six months, the probability of continuing or new pandemic-related disruptions is  
23 nonetheless uncertain. Any such disruptions may affect LSEs’ IRP procurement online  
24 dates. Penalties are not appropriate tools to address LSEs’ exposure to such risks, as the  
25 LSEs and their project developers may be unable to meaningfully mitigate such risks.

26 The Commission, therefore, should include an allowance for potential lingering  
27 pandemic-related disruptions by adopting a Tier 1 advice letter penalty waiver process.  
28 In the event that an LSE is able to demonstrate that any delay came despite its best efforts  
29 to meet its obligations, staff would be empowered to waive the associated penalty.

# **APPENDIX A**

## **WITNESSES QUALIFICATIONS**



1                                   **PREPARED TESTIMONY AND QUALIFICATIONS**  
2   **OF**  
3   **STEPHEN CASTELLO**  
4

5   **Q.1   Please state your name and business address.**

6   A.1   My name is Stephen Castello. My business address is 505 Van Ness Avenue,  
7           San Francisco, California.

8  
9   **Q.2   By whom are you employed and in what capacity?**

10   A.2   I am employed by the Public Advocates Office at the California Public Utilities  
11           Commission as a Public Utilities Regulatory Analyst in the Electricity Pricing and  
12           Customer Programs Branch.

13  
14   **Q.3   Briefly state your educational background and experience.**

15   A.3   I hold a Master of Science in Economics from California State University, East  
16           Bay (2018). I also received a Bachelor of Arts in Political Science from the  
17           University of California, Berkeley (2014). I joined the Commission on May 1,  
18           2019, in the Public Advocates Office, Electricity Pricing and Customer Programs  
19           Branch. I have previously provided testimony in the Integrated Distributed Energy  
20           Resources Rulemaking (R.14-10-003) and the Rulemaking Concerning Energy  
21           Efficiency Rolling Portfolios, Policies, Programs, Evaluation, and Related Issues  
22           (R.13-11-005).

23  
24   **Q.4   What is the scope of your responsibility in this proceeding?**

25   A.4   I am responsible for Chapter 2: Demand Response.

26  
27   **Q.5   Was this material prepared by you or under your supervision?**

28   A.5   Yes, it was.

29  
30   **Q.6   Insofar as this material is factual in nature, do you believe it to be correct?**

31   A.6   Yes, I do.

32  
33   **Q.7   Insofar as this material is in the nature of opinion or judgment, does it**  
34           **represent your best judgment?**

35   A.7   Yes, it does.

1 **Q.8 Do you adopt this testimony as your sworn testimony in this proceeding?**

2 A.8 Yes, I do.

3

4 **Q.9 Does this complete your testimony at this time?**

5 A.9 Yes, it does.

1                                   **PREPARED TESTIMONY AND QUALIFICATIONS**  
2   **OF**  
3   **CHRISTIAN LAMBERT**  
4

5   **Q.1   Please state your name and business address.**

6   A.1   My name is Christian Lambert. My business address is 505 Van Ness Avenue,  
7        San Francisco, California 94102.

8  
9   **Q.2   By whom are you employed and in what capacity?**

10   A.2   I am employed by the Public Advocates Office at the California Public Utilities  
11        Commission in the Electricity Planning and Policy Branch.

12  
13   **Q.3   Briefly state your educational background and experience.**

14   A.3   I hold a Master of Public Policy degree from the University of California –  
15        Berkeley (2016). I hold a Bachelor of Science in Foreign Service degree from  
16        Georgetown University (2013). I have been working as a Public Utilities  
17        Regulatory Analyst for the Public Advocates Office since 2017.

18  
19   **Q.4   What is the scope of your responsibility in this proceeding?**

20   A.4   I am responsible for the Executive Summary, Chapter 1: Planning Reserve  
21        Margin, and Chapter 4: D.19-11-016 Procurement Penalties.

22  
23   **Q.5   Was this material prepared by you or under your supervision?**

24   A.5   Yes, it was.

25  
26   **Q.6   Insofar as this material is factual in nature, do you believe it to be correct?**

27   A.6   Yes, I do.

28  
29   **Q.7   Insofar as this material is in the nature of opinion or judgment, does it**  
30        **represent your best judgment?**

31   A.7   Yes, it does.

32  
33   **Q.8   Do you adopt this testimony as your sworn testimony in this proceeding?**

34   A.8   Yes, I do.

1 **Q.9 Does this complete your testimony at this time?**

2 **A.9** Yes, it does.

1                                   **PREPARED TESTIMONY AND QUALIFICATIONS**  
2   **OF**  
3   **KYLE NAVIS**

4  
5   **Q.1   Please state your name and business address.**

6   A.1   My name is Kyle Navis and my business address is 505 Van Ness Avenue, San  
7           Francisco, CA 94102.

8  
9   **Q.2   By whom are you employed and in what capacity?**

10   A.2   I am employed by the Public Advocates Office at the California Public Utilities  
11           Commission in the Electricity Planning and Policy Branch.

12  
13   **Q.3   Briefly state your educational background and experience.**

14   A.3   I have a Bachelor of Arts in Peace Studies from Whitworth University (Spokane,  
15           WA), and a Master of Arts in International Affairs from the University of  
16           California, San Diego. I have been working as a Public Utilities Regulatory  
17           Analyst for the Public Advocates Office since 2020. In the Public Advocates  
18           Office, I am involved in the Resource Adequacy, Emergency Reliability,  
19           Integrated Resource Planning, and Provider of Last Resort proceedings.

20  
21   **Q.4   What is the scope of your responsibility in this proceeding?**

22   A.4   I am responsible for Chapter 3: Resource Adequacy Penalties.

23  
24   **Q.5   Was this material prepared by you or under your supervision?**

25   A.5   Yes, it was.

26  
27   **Q.6   Insofar as this material is factual in nature, do you believe it to be correct?**

28   A.6   Yes, I do.

29  
30   **Q.7   Insofar as this material is in the nature of opinion or judgment, does it**  
31           **represent your best judgment?**

32   A.7   Yes, it does.

33  
34   **Q.8   Do you adopt this testimony as your sworn testimony in this proceeding?**

1 A.8 Yes, I do.

2

3 **Q.9 Does this complete your testimony at this time?**

4 A.9 Yes, it does.

## **APPENDIX B**

### **Cal Advocates' Planning Reserve Margin Proposal**

Excerpted from Cal Advocates' Comments on Track 3B.1  
and Track 4 Proposals,  
R.19-11-009 (RA Proceeding)

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA



**FILED**  
03/12/21  
04:59 PM

Order Instituting Rulemaking to Oversee the  
Resource Adequacy Program, Consider Program  
Refinements, and Establish Forward Resource  
Adequacy Procurement Obligations.

Rulemaking 19-11-009

**COMMENTS OF THE PUBLIC ADVOCATES OFFICE  
ON TRACK 3B.1 AND TRACK 4 PROPOSALS  
(PUBLIC VERSION)**

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March 12, 2021



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## I. INTRODUCTION

Pursuant to the December 11, 2020, *Assigned Commissioner's Amended Track 3B and Track 4 Scoping Memo and Ruling* (Ruling), the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) submits these comments on the Revised Track 3B.1 and Track 4 proposals submitted by parties on January 28, 2021.<sup>1</sup>

Cal Advocates provides the following recommendations:

- The California Public Utilities Commission (Commission) should modify the Planning Reserve Margin (PRM) for the 2023 Resource Adequacy (RA) Compliance Year and future years as Cal Advocates proposes.
- The Commission and stakeholders should further develop the Center for Energy Efficiency and Renewable Technologies' (CEERT) hybrid counting proposal.
- The Commission should adopt proposed modifications to account for the geographic diversity of wind resources in Effective Load Carrying Capability (ELCC) counting.
- The Commission should not adopt Energy Division's marginal ELCC for New Solar Contracts.
- The Commission should not adopt the California Independent System Operator's (CAISO) RA import proposal. The CAISO and the Commission should continue to modify and refine the RA import proposal prior to its adoption.
- The Commission should adopt Pacific Gas and Electric Company's (PG&E) system RA price penalty proposal.
- The Commission should eliminate the Demand Response (DR) PRM Adder.

## II. DISCUSSION

### A. **(Track 3B1) The Commission Should Modify the Planning Reserve Margin for the 2023 RA Compliance Year and Should Initiate Additional Development for Further Modifications for 2024 and Beyond**

#### 1. Introduction

The Planning Reserve Margin (PRM) requires LSEs to procure sufficient capacity to serve their customer's load, plus an additional 15% of the California Energy Commission's

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<sup>1</sup> Cal Advocates is filing comments on the two tracks together in these comments. The section headings in these comments indicate the track in which stakeholder proposals were filed.

(CEC) Integrated Energy Policy Report (IEPR) monthly 1-in-2 forecast peak demand.<sup>2</sup> The PRM includes 6% for Western Energy Coordinating Council (WECC) and North American Energy Reliability Corporation (NERC) reserve requirements, comprised of 3% of load and 3% of supply.<sup>3</sup> The remaining margin allocates the difference of 9% to forced outages and load above forecast (forecast error).<sup>4</sup> The Commission authorizes individual LSEs to procure up to 17% of their load share for the PRM to recognize the lumpiness inherent to resource adequacy (RA) capacity procurement.<sup>5</sup>

In the medium-term procurement horizon (2023-2026), there are several factors both tightening and expanding RA supply. The Diablo Canyon Power Plant (DCPP) and Once-Through Cooling (OTC) gas-fired generating plants will be retiring. RA import markets will tighten through out-of-CAISO resource retirements and increased competition from the Desert Southwest.<sup>6</sup> Simultaneously, there are several factors introducing more RA capacity to the resource pipeline, including 3,300 MW of incremental resources authorized in D.19-11-016 for in-service dates between now and 2023. The Integrated Resource Plan (IRP) proceeding (Rulemaking (R.) 20-05-003) is also considering an additional increment of 4,700 to 10,400 MW in system resources, with in-service dates between 2023 and 2026.<sup>7</sup>

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<sup>2</sup> Decision (D.) 04-01-050, *Interim Opinion*, January 22, 2004, pp. 11, 193, Conclusion of Law #5.

<sup>3</sup> D.04-01-050 originally allocated 7% of the PRM to operating reserves, per the CAISO's WECC obligations at the time. The CAISO later adopted the WECC Contingency Standard, which updates the operating reserves to 6% in total. See WECC Standard BAL-002-WECC-2a, p. 1, available at [https://www.nerc.com/\\_layouts/15/PrintStandard.aspx?standardnumber=BAL-002-WECC-2a&title=Contingency%20Reserve&jurisdiction=United%20States](https://www.nerc.com/_layouts/15/PrintStandard.aspx?standardnumber=BAL-002-WECC-2a&title=Contingency%20Reserve&jurisdiction=United%20States).

<sup>4</sup> D.04-01-050, p. 21. D.04-01-050 declines to specify the amount of the PRM intended to apply to the remaining non-reserve components of the PRM, although stakeholders have generally come to understand that the difference is comprised of buffers for forced outages and load above forecast. The CAISO's initial Track 3B proposal noted, "Given a forecasting margin of error of four percent, the estimated system forced outage rate is four to six percent" (Initial Track 3.B Proposal and Comments on Additional Process of the California Independent System Operator Corporation, August 7, 2020, p. 12). The CAISO has suggested that "When the RA program was originally developed, the estimated forced outage rate for RA resources was approximately 4% to 6% of the 15% planning reserve margin" (CAISO RA Enhancements Initiative Fifth Revised Straw Proposal, July 7, 2020, p. 9).

<sup>5</sup> D.04-01-050, p. 193, Conclusion of Law #7.

<sup>6</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021, p. 12, p. 15, and p. 19. Available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M367/K037/367037415.PDF>.

<sup>7</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021, p. 14, Table 1. Available at

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The macro context of the RA program is also changing. The severity and geographic breadth of extreme weather events, such as the heat storm of mid-August 2020, demand that stakeholders consider which forecast can best address the challenges imposed by climate change.<sup>8</sup> At the same time, the RA program’s historical pattern of contracting with existing resources has resulted in the retention of aging units, which may affect the reliability attributes of the overall fleet, such as forced outages. In R.20-05-003, the CAISO presented NERC Generator Availability Data System (GADS) data showing a measured generator forced outage rate of 7.2%, which is higher than the 4 to 6% anticipated by D.04-01-050.<sup>2</sup>

Cal Advocates and the CAISO are not alone in calling for a revision to the PRM. Both Western Power Trading Forum and Southern California Edison Company recommend that the Commission re-evaluate the PRM.<sup>10</sup> These factors all support the consideration of how to adapt the PRM paradigm to meet the challenges of the California’s evolving grid.

## 2. Updated PRM Recommendations

Cal Advocates recommends using the 1-in-5 IEPR load forecast (as proposed by the CAISO in its RA Enhancements Initiative)<sup>11</sup> plus a 13% PRM.<sup>12</sup> While the PRM itself would drop from 15% to 13% under this proposal, the system RA obligation would increase due to the difference between the 1-in-2 and 1-in-5 forecasts. Overall, this proposal is equivalent to the 1-in-2 IEPR forecast plus a 17.8% PRM.

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<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M367/K037/367037415.PDF>.

<sup>8</sup> The CEC is re-evaluating its forecasting methods to better account for climate change. See discussion under “Forecast Selection” in the following subsection of these comments.

<sup>2</sup> R.20-11-003, CAISO Opening Testimony of Jeff Billinton on behalf of the CAISO, January 11, 2021, pp. 2-4.

<sup>10</sup> Western Power Trading Forum Track 3B.1 Revised Proposals, Jan 28, 2021, p. 3-6; and Comments of Southern California Edison on the Sixth Revised Straw Proposal - Phase 2A, CAISO RA Enhancements Initiative, January 29, 2021, Question 6, available at <https://stakeholdercenter.caiso.com/StakeholderInitiatives/AllComments/c3b766fe-d976-42b8-8304-e082feae46c1#org-02ca1b67-ea97-47c8-a70b-52b3e0cb990f>.

<sup>11</sup> CAISO Resource Adequacy Enhancements Draft Final Proposal- Phase 1 and Sixth Revised Straw Proposal, December 17, 2020, p. 103.

<sup>12</sup> For a useful depiction of the planning relationship to these IEPR forecasts, see Brockway, Anna and Laurel Dunn, Weathering adaptation: Grid infrastructure planning in a changing climate, *Climate Risk Management* 30, 2020, Figure 5. Available at <https://www.sciencedirect.com/science/article/pii/S2212096320300462?via%3Dihub#f0025>.

**a) Forecast Selection**

Cal Advocates recommends switching from the 1-in-2 forecast to the 1-in-5 forecast in order to anticipate potential climate change impacts. The CAISO has argued that the 1-in-5 IEPR forecast peak “addresses a broader range of potential load conditions, many of which are higher than the average load.”<sup>13</sup> Cal Advocates agrees there is merit to using the 1-in-5 IEPR forecast. Specifically, a higher forecast is more likely to reflect climate change impacts, including a higher probability of extreme weather events across the West. The current weather years that form the basis of much of the Commission’s resource planning regime may inadequately represent this increasing probability of extreme events.

However, Cal Advocates notes that these “thick” tails are not evident in the 2019 IEPR forecasts. Table 1 shows the differences in varying IEPR forecast peak coincident CAISO loads relative to the 1-in-2 forecast for 2021. Adopting the 1-in-5 forecast peak load would require 4.3% more RA capacity to meet system peak load, compared to the current 1-in-2 forecast peak.

*Table 1: IEPR Forecast Peak Load<sup>14</sup>*

<b>IEPR Load Forecast - Coincident CAISO Load</b>	<b>2021 (MW)</b>	<b>Relative to 1-in-2 forecast peak</b>
<b>1-in-2</b>	45,184	-
<b>1-in-5</b>	47,108	+4.3%
<b>1-in-10</b>	48,162	+6.6%
<b>1-in-20</b>	48,911	+8.2%

These same ratios persist throughout the 2019 IEPR forecast window. The gap between the 1-in-2 and the 1-in-5 forecasts remains 4.3% for all forecast years in the 2019 IEPR forecast window. This stability is contrary to the notion of increasing probabilities of increased forecast peak load, which would otherwise appear as an increasing percentage difference over time.

While acknowledging this characteristic of the 2019 IEPR, Cal Advocates nonetheless recommends moving to the 1-in-5 forecast so that the RA program includes potential changes in

<sup>13</sup> CAISO Resource Adequacy Enhancements Draft Final Proposal- Phase 1 and Sixth Revised Straw Proposal, December 17, 2020, p. 103.

<sup>14</sup> CEC 2019 Integrated Energy Policy Report, California Energy Demand 2019-2030 Managed Forecast – Mid Demand/Mid AAEE Case, February 2020, TN232306\_20200304T111936, (CEC IEPR Forecast), available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=232306&DocumentContentId=64306>.

future IEPRs. At the February 25, 2021 RA Workshop, Lynn Marshall of the CEC clarified that the current CEC practices incorporate climate change effects in the 1-in-2 forecast (and its hourly forecasts), including the impacts of changes in the number of average heating and cooling degree days (CDDs), but not the distribution effects.<sup>15</sup> Including the distribution effects in its forecasts will be the focus of the CEC’s work for the next IEPR cycle, and might include the specification of the 1-in-5 into hourly load forecasts.<sup>16</sup> Any changes that the CEC makes in the IEPR forecast can be incorporated in the RA program by switching to the 1-in-5 forecast on the schedule that Cal Advocates outlines later in these comments.

Cal Advocates notes that both the Mid and High Demand IEPR cases incorporate, respectively, lower and higher levels of climate change impacts.<sup>17</sup> The CEC clarifies the extent of this climate change analysis as follows:

Climate change impacts were incorporated into the forecast through adjustments to daily and—for the first time—hourly temperatures based on new projections developed by Scripps Institute of Oceanography. Annual load impacts are estimated by running the CEC’s demand models with and without projected changes to annual heating and cooling degree days. To project hourly impacts, staff first estimates the temperature elasticity of demand for specific hours of the day and months of the year and then applies those elasticities to Scripps’ projections of hourly temperature changes. This approach is meant to capture the average impacts that a general warming trend will have on demand—less heating load in the winter and more cooling load in the summer.<sup>18</sup>

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<sup>15</sup> CPUC Workshop on Resource Adequacy: Track 3.B.1 and Track 4 Proposals (Feb. 25, 2021), at 1:21:45. Available at [https://youtu.be/NVb5ZRq\\_a3k?t=4905](https://youtu.be/NVb5ZRq_a3k?t=4905).

<sup>16</sup> Cal Advocates notes that if the 1-in-5 remains available as an annual peak value, additional work in the RA proceeding will be needed to develop the most appropriate method to derive corresponding monthly forecasts for the system RA obligation.

<sup>17</sup> For a useful depiction of the planning relationship to these IEPR forecasts, see Brockway, Anna and Laurel Dunn, Weathering adaptation: Grid infrastructure planning in a changing climate, *Climate Risk Management* 30, 2020, Figure 5. Available at <https://www.sciencedirect.com/science/article/pii/S2212096320300462?via%3Dihub#f0025>.

<sup>18</sup> 2019 *Integrated Energy Policy Report*, CEC, p. 203. Available at <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report>.



### **b) Required Reserves**

Cal Advocates recommends maintaining the allowance for required WECC reserves at 6% of the 1-in-5 forecast. Due to the scaling difference between the capacities associated with the 1-in-5 and 1-in-2 forecasts, this 6% of the 1-in-5 forecast corresponds to 6.3% of the 1-in-2 forecast and therefore represents a modest increase in capacity compared to the current PRM. The level of the increase is small, and its inclusion is conservative insofar as the reserve need may occasionally exceed 6% of the 1-in-2 forecast. For example, actual reserve needs rose to 6.3% of the 1-in-2 forecast on August 14, 2020, when CAISO called a Stage 3 load-shedding emergency.<sup>19</sup> This small difference is due to the need to scale the contingency reserve requirement to hourly integrated load and generation.<sup>20</sup> When load exceeds the expectation (i.e., the 1-in-2), so do the reserve requirements.

### **c) Forced Outages**

Cal Advocates recommends an allowance of 7% for forced outages, which corresponds to 7.3% of the 1-in-2 forecast. The CAISO is working to aggregate its own forced outage data to distinguish daily peak coincident outages from other, higher metrics that the CAISO has previously presented in this proceeding.<sup>21</sup> Detailed, granular data reflecting forced outage statistics will be useful for further refining the RA program, especially if daily or at least monthly data is available. Absent such information, Cal Advocates' recommended allowance of 7% for forced outages relies on the same GADS data detailed in CAISO's Emergency Reliability OIR testimony, in which CAISO describes a 7.2% forced outage rate.<sup>22</sup>

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<sup>19</sup> CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, p. 43. Available at <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>.

<sup>20</sup> WECC Standard BAL-002-WECC-2a – Contingency Reserve. Available at [https://www.nerc.com/\\_layouts/15/PrintStandard.aspx?standardnumber=BAL-002-WECC-2a&title=Contingency%20Reserve&jurisdiction=United%20States](https://www.nerc.com/_layouts/15/PrintStandard.aspx?standardnumber=BAL-002-WECC-2a&title=Contingency%20Reserve&jurisdiction=United%20States).

<sup>21</sup> Most recently, the CAISO has shared that its previous assertion of a forced outage rate of 9.78% is actually the sum of units' worst outages over a given day, whether or not those outages were coincident. See CAISO Final Track 3.B.2 Proposal, February 26, 2021, p. 7.

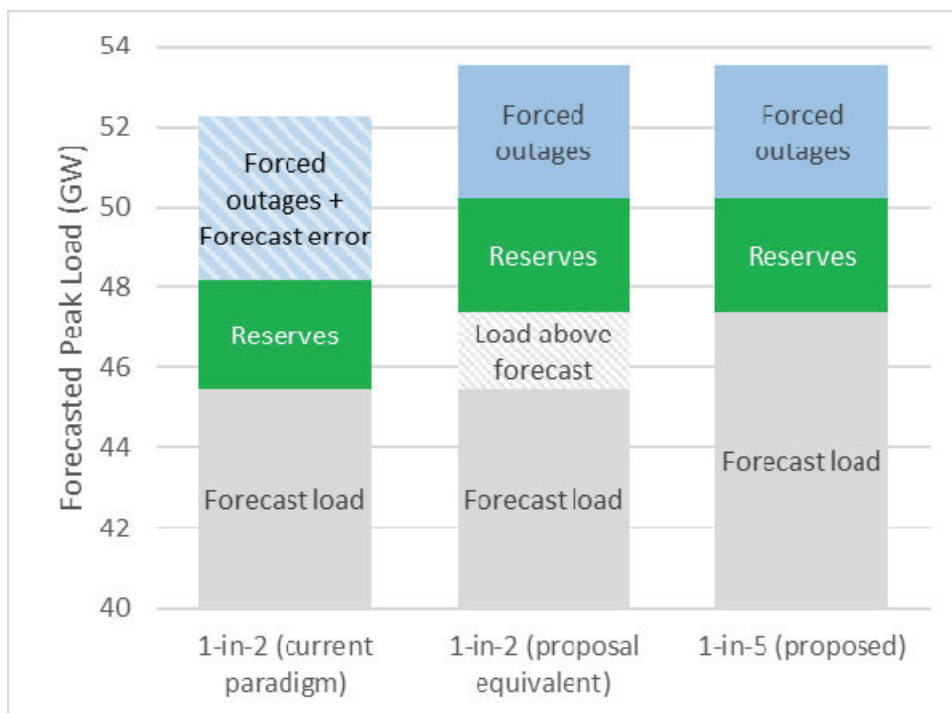
<sup>22</sup> R.20-11-003, CAISO Opening Testimony of Jeff Billinton on behalf of the CAISO, January 11, 2021, pp. 2-4.



### 3. Discussion

The 13% PRM would consist of 6% for WECC and NERC reserves and an additional 7% for forced outages. In terms of today’s RA program, the 1-in-5 forecast plus 13% PRM would be equivalent to a 1-in-2 forecast peak load plus a 17.8% PRM.<sup>23</sup> Figure 1 uses 2023 forecast peak load data to show how Cal Advocates’ proposed PRM would compare to today’s 1-in-2 peak forecast:

Figure 1: Shifting from a 1-in-2 to a 1-in-5 Forecast Peak Load-based PRM<sup>24</sup>



<sup>23</sup> The additional decimal places on the individual components of the 17.8% PRM result from using the 1-in-2 denominator. The 17.8% PRM would be made up of 6.26% for reserves, 7.30% for forced outages, and 4.26%, due to the differences between the denominators of the 1-in-2 and 1-in-5 forecast peak loads.

<sup>24</sup> CEC 2019 Integrated Energy Policy Report, California Energy Demand 2019-2030 Managed Forecast – Mid Demand/Mid AAEE Case, February 2020, TN232306\_20200304T111936, (CEC IEPR Forecast), available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=232306&DocumentContentId=64306>.

Table 2: Capacity values underlying Figure 1<sup>25</sup>

	<b>1-in-2 (Current paradigm)</b>	<b>1-in-2 (Proposal equivalent)</b>	<b>1-in-5 (Proposed)</b>
<b>Forced outages</b>	-	3,317	3,317
<b>Forced outages + Load above forecast</b>	4,090	-	-
<b>Reserves</b>	2,727	2,843	2,843
<b>Load above forecast</b>	-	1,936	-
<b>Forecast load</b>	45,447	45,447	47,384

Overall, Cal Advocates’ specification of the new PRM includes a similar allowance for the required reserves while adding over 1,100 MW of combined allowances for forced outages and load above the 1-in-2 forecast. As the CAISO has noted, changing to the 1-in-5 forecast would facilitate removing the component of the PRM that currently provides for load above forecast.<sup>26</sup>

However, the 13% PRM would nonetheless continue to provide for additional load above the 1-in-5 forecast. Cal Advocates expects the actual incidence of forced outages to vary over the course of the year, as indeed the purpose of the RA program is to encourage RA availability during the high-demand summer months. On days when the forced outage rate is less than 7%, the un-utilized portion of the PRM can provide for load above the forecast. On August 14, 2020, actual forced outages were 4.8%.<sup>27</sup> Under a PRM that provides for 7% forced outages, the RA fleet would effectively provide for the 1-in-10 forecast on days with an actual forced outage rate

<sup>25</sup> CEC 2019 Integrated Energy Policy Report, California Energy Demand 2019-2030 Managed Forecast – Mid Demand/Mid AAEE Case, February 2020, TN232306\_20200304T111936, (CEC IEPR Forecast), available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=232306&DocumentContentId=64306>.

<sup>26</sup> CAISO Resource Adequacy Enhancements Draft Final Proposal- Phase 1 and Sixth Revised Straw Proposal, December 17, 2020, p. 103.

<sup>27</sup> CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, p. 43. Available at <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>.

of 4.8%, because the 1-in-10 forecast is an additional increment of 2.3% above the 1-in-5 forecast.<sup>28</sup> This difference approximates the 1-in-10 forecast (see Table 1).

Cal Advocates, therefore, recommends the 1-in-5 forecast, rather than a higher forecast, in order to facilitate the consideration of more cost-effective solutions to address forced outages. Specifically, the Commission should review the CAISO RA Availability Incentive Mechanism and Commission RA programs to determine if those mechanisms properly incentivize generators to be available during tight conditions and/or appropriately penalized for their failure to substitute outages during tight conditions.<sup>29</sup> Such program design details can encourage generators to conduct timely maintenance – lowering the overall forced outage rate – and to schedule that maintenance at the end of the spring shoulder season to prepare for high summer loads – lowering the summer forced outage rate specifically. Lower forced outage rates in the summer will improve the ability of the PRM to meet additional load above forecast.

**a) Ambient Outage Derates**

Cal Advocates also recommends that the Commission consider adjustments to the thermal generators net qualifying capacity (NQC), to reflect forced outages that result from ambient derating. Ambient derating refers to partial outages that reflect the inefficiencies that thermal generators experience when temperatures are especially high. Because such conditions also drive high cooling loads and high overall grid demand, these ambient derating outages are a large source of unavailable RA capacity during the tightest conditions. On August 14-15, 2020, these derates totaled 700-1000 MW for the natural gas RA fleet – approximately 1.5-2% of the PRM.<sup>30</sup> If forced outages resulting from ambient derating were addressed outside of the PRM, then the capacity required by the PRM would be able to meet additional load above forecast with

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<sup>28</sup> Cal Advocates recommends that the Commission to work with the CAISO to provide forced outage data that can clarify the monthly variation in forced outages.

<sup>29</sup> The Commission does not consider outages when determining compliance with RA Requirements, while the CAISO does. CAISO Tariff 9.3.1.3.3.1. See also: Commission 2021 Filing Guide for System, Local and Flexible RA Compliance Filings, October 2, 2020, p. 32.

<sup>30</sup> CAISO, CPUC, and CEC, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave*, pp. 88-89. Available at <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>.

the 1.5-2% of the PRM capacity that was not available due to derating. An additional increment of 1.6% would correspond to the 1-in-20 forecast (see Table 1).<sup>31</sup>

Before the Commission can consider and adopt ambient derate accounting, further development of any potential accounting mechanism is required. Cal Advocates recommends that the Commission and the CAISO collaborate to consider summer month NQC adjustments for thermal generators' ambient derates within the context of the current and future RA Rulemaking. While the timing of this development may not provide for the adoption of a final methodology concurrent with the adoption of a revised PRM, the Commission may nonetheless provide guidance.

Treating thermal resources' ambient derates by revising their NQC to reflect forced outages would be generally consistent with the Commission's approach in the RA program to reconsider hydroelectric hybrid conventions,<sup>32</sup> and ensure the principles in question are consistent with the regular ELCC updates that apply to other resource types. Such adjustments could be based on the correlation of each resource's historical ambient derate outages with either the average daily temperatures experienced by the resource during those outages, or the CDDs. Revising the NQC to reflect forced outages would improve equitability by placing the onus on those generators responsible for the outages, rather than on all LSEs, who currently must provide for those outages through the PRM. To the extent that some existing generators may already provide for their ambient derates by strategic PMax testing or other strategies, these generators would be insulated by their historical dearth of ambient derate outage reporting.

An alternative approach would be to require thermal generators' maximum testing to occur under temperature conditions that could capture resources' ambient derates. Cal Advocates does not prefer this alternative, as such testing may be difficult to schedule due to the challenges of scheduling testing for days when temperatures are forecast to be high but not so high as to trigger the CAISO to cancel testing.<sup>33</sup> In addition, this alternative could also require

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<sup>31</sup> To achieve the 1-in-20 forecast, the recommendation to revise the NQC of thermal resources to reflect ambient temperature derates must be pursued in tandem with efforts to ensure that the existing RA regime pushes the summer forced outage rate below 5% through existing tools such as the Resource Adequacy Availability Incentive Mechanism penalties.

<sup>32</sup> D.20-06-031, pp. 22-33.

<sup>33</sup> For example, if the CAISO moved to Restricted Maintenance Operations, it could cancel scheduled testing. See *CAISO Resource Testing Guidelines*, p. 6. Available at

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adjustments to non-summer month NQCs in order to recognize resources' full output during conditions that are less likely to produce significant ambient derating.

#### 4. Timing of implementation

Cal Advocates recommends RA Year 2024 for full implementation of the 1-in-5 plus 13% PRM, with a phase-in PRM increase in 2023. Cal Advocates would also advocate in the IRP proceeding that the implementation of this RA PRM proposal aligns with the procurement currently under consideration in the Commission's IRP proceeding.<sup>34</sup> RA Years 2021 and 2022 would see no change to the existing 15% PRM because the the Commission's Emergency Reliability OIR (R.20-11-003) has already established a non-binding minimum incremental resource procurement target of 1000 MW by 2021,<sup>35</sup> for PG&E, Southern California Edison Company, and San Diego Gas & Electric Company (the three large electric IOUs). If the three large electric IOUs procure 1000 MW, that would add an additional 2.2% to the effective PRM and increase the RA fleet above 15%.<sup>36</sup> The Proposed Decision in the Emergency OIR opts to apply these non-binding procurement targets only to the three large electric IOUs, but changes to the PRM would be binding and apply to all LSEs, which is why Cal Advocates recommends delaying changes to the PRM until 2023. Commission-ordered procurement has the advantage of avoiding the downside risks of increasing the PRM when little lead time is available to develop new resources. Increasing the PRM on such short notice could lead to a much higher likelihood of system RA penalties, even worse scarcity pricing, and LSE coordination issues.

Cal Advocates recommends the phase-in of the higher PRM in RA Year 2023. This phase-in would continue the use of the 1-in-2 forecast peak load but increase the PRM by some transitional margin<sup>37</sup> towards its permanent level. The phase-in PRM for 2023 should be targeted to match the procurement outcomes authorized in the Emergency Reliability OIR and to

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<http://www.caiso.com/Documents/5330.pdf>.

<sup>34</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021.

<sup>35</sup> R.20-11-003, Proposed Decision, *Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company to Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022*, March 5, 2021, p. 39.

<sup>36</sup> 1,000 MW is 2.2% of 2021's CEC coincident forecast peak load of 45,184 MW.

<sup>37</sup> Cal Advocates' initial recommendation for a transitional PRM is 17.5%, although the transitional PRM would benefit from stakeholder input.

align with any 2023 procurement required in the IRP. While the target volume of Emergency Reliability OIR procurement is 1000 MW, the final results are unknown. Cal Advocates estimates a 2023 PRM of 17.5% as an initial recommendation to account for uncertainty, contingent on the IOUs successfully procuring all of the Emergency OIR-authorized 1000 MW. By RA Year 2024, the RA program would switch to the 1-in-5 forecast peak load plus 13% PRM.

*Table 3: Timeline for Proposed PRM Increase*

<b>RA Year</b>	<b>Load forecast + PRM</b>	<b>Rationale</b>
<b>2021</b>	1-in-2 + 15%	No change; the D.21-02-028 proposed decision sets 1000 MW incremental resource target, which will push the contracted fleet above 15%.
<b>2022</b>	1-in-2 + 15%	1000 MW target in D.21-02-028 proposed decision will maintain a contracted fleet in excess of 15%.
<b>2023</b>	<b>1-in-2 + 17.5%</b> = 1-in-5 + 12.7%	Higher PRM phase-in year: 17.5%, contingent on meeting targets set by R.20-11-003-authorized procurement.
<b>2024</b>	1-in-2 + 17.8% = <b>1-in-5 + 13.0%</b>	Switch to using 1-in-5 forecast.

At this time, the Commission has ordered incremental summer 2021 procurement under D.21-02-028 in the Emergency Reliability OIR, with additional procurement likely to occur pursuant to a March 5, 2021 Proposed Decision (PD). That PD finds that “the most practical and expeditious method to implement a 17.5% PRM that supports the goal of meeting net peak demand is to continue to require all LSEs to meet their 15% system RA PRM requirement and direct PG&E, SCE, and SDG&E to target a minimum of 2.5% of incremental resources that are available at net peak through the efforts authorized in this proceeding.”<sup>38</sup> If the final decision includes such terms, the incremental resources procured pursuant to the Emergency Reliability OIR will not count towards LSEs’ RA obligations. If the final decision does not maintain this

<sup>38</sup> R.20-11-003, Proposed Decision, *Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company to Actions to Prepare for Potential Extreme Weather in the Summers of 2021 and 2022*, March 5, 2021, Finding of Fact #56, p. 57.

approach, such that incremental resources are allowed to count for LSEs' RA obligations, then Cal Advocates would recommend a narrowly targeted stepwise increase to the 17.5% PRM in 2022 to ensure these incremental resources do not displace any existing RA resource whose contract may expire.

Table 4 compares Cal Advocates' proposal with the CAISO's proposals in the RA proceeding, the Emergency Reliability OIR, and the CAISO's RA Enhancements Initiative. Cal Advocates' proposed timeline for implementing its revised PRM maintains the current PRM through this year and next, relying on the procurement ordered in the Emergency Reliability OIR to increase capacity, rather than a PRM increase. For 2023, the CAISO has proposed in its RA Enhancements initiative to switch to a 1-in-5 forecast peak, as well as implementing unforced capacity (UCAP) counting, which would remove any and all forced outage allowances from the PRM.<sup>39</sup> Thus, the CAISO-proposed PRM added to a UCAP-counted RA fleet nominally includes only 6% for reserves, yet the full capacity level is a significant increase. Cal Advocates has estimated the CAISO's proposal as approximately 23.5% in addition to the use of a 1-in-2 forecast.

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<sup>39</sup> CAISO RA Enhancements Initiative Draft Final Proposal – Phase 1 and Sixth Revised Straw Proposal, December 17, 2020, p. 103.



Table 4: Comparison of Cal Advocates' PRM Proposal and the CAISO's PRM Proposals and UCAP Proposal<sup>40</sup>

RA Year	Cal Advocates	CAISO
2021	1-in-2 + 15% + R.20-11-003 resources	1-in-2 + 17.5% (proposed in R.20-11-003)
2022	1-in-2 + 15% + R.20-11-003 resources	1-in-2 + 17.5% (proposed in R.19-11-009, Track 3B.1)
2023	1-in-2 + 17.5%	1-in-5 + 6% under UCAP = 1-in-2 + 23.5% (proposed in RA Enhancements initiative)
2024	1-in-5 + 13% = 1-in-2 + 17.8%	1-in-5 + 6% under UCAP = 1-in-2 + 23.5% (proposed in RA Enhancements initiative)

## 5. Net Peak Requirements

Finally, in R.19-11-009 Track 3B.1 and R.20-11-003 the CAISO has also proposed applying the PRM to net load peak hour.<sup>41</sup> The CAISO's proposal would require counting resources available at the net load peak or "most critical hour after peak," which is roughly the hour ending at 8 p.m. In the CAISO's proposal, solar capacity would not count towards the net load peak, although solar resources should still be counted towards gross load peak requirements. Indeed, counting solar resources towards a gross load peak requirement only would necessarily preempt a re-evaluation of solar resources' RA capacity value for the gross load peak because the current ELCC values spread solar's contribution across a 24-hour time frame. The CAISO's net load peak requirement proposal has merit, although more feasibility studies, including a re-

<sup>40</sup> Cal Advocates developed the 23.5% PRM equivalent amount from the CAISO's UCAP proposal in comments to the CAISO's Sixth Revised Straw Proposal – Phase 2A RA Enhancements Initiative. A description of this methodology is also included in Appendix A to these Track 3B1 Comments. See also: RA Enhancements Initiative Sixth Revised Straw Proposal – Phase 2A Cal Advocates Comments, January 29, 2021, available at <https://stakeholdercenter.caiso.com/StakeholderInitiatives/AllComments/c3b766fe-d976-42b8-8304-e082feae46c1#org-080f4f0a-674b-447e-8bf4-2682bb0f69b7>.

<sup>41</sup> Track 3B.1 Proposals of the California Independent System Operator Corporation, January 28, 2021, p. 27; and R.20-11-003, CAISO Opening Testimony of Jeff Billinton on behalf of the CAISO, January 11, 2021, pp. 5-9.



evaluation of solar RA capacity, are necessary to fully evaluate the net load peak requirement. Likewise, the basic framework of the CAISO's net load peak requirement proposal would be compatible with Cal Advocates' PRM proposal described above.

Imposing a net load peak requirement would require additional stakeholder input and vetting. This may be conducted in the next RA proceeding and need not prevent the Commission from revising the current RA PRM on the scheduled contemplated in the Scoping Memo.

## 6. Relation to the IRP PRM

A recent ruling in the Commission's IRP proceeding (R.20-05-003) that proposes mid-term (2023-2026) procurement for system needs includes an effective planning PRM of 20.7%.<sup>42</sup> That IRP ruling states, "[p]arties should note that this planning assumption is separate and distinct from the compliance obligation of LSEs in the resource adequacy context; this ruling does not propose a change to the year-ahead monthly system resource adequacy obligations, as changes to the resource adequacy requirements should be addressed in, and are currently scoped into, the resource adequacy rulemaking."<sup>43</sup> Cal Advocates' full response to the IRP proposal will be provided in the IRP rulemaking in comments on that ruling, due March 19, 2021. Those IRP comments will address additional points concerning the relation of Cal Advocates' 1-in-5 plus 13% PRM recommendation with the IRP proposal.

Cal Advocates' recommended revisions to the PRM in these RA comments are consistent with the IRP ruling's statement that the PRM used for planning purposes in the IRP is "separate and distinct" from the PRM that the RA program uses to set system RA obligations. The IRP PRM of 20.7% begins with 14.9%, the *status quo* IRP planning proxy for the RA obligation. This IRP 14.9% assumption reflects the 15% RA PRM, minus a small adjustment to account for the lower PRM requirements of certain non-CPUC-jurisdictional local regulatory authorities that are included in the IRP's CAISO-wide modeling. Energy Division then proposes to add the following to the IRP planning PRM:

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<sup>42</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021, p. 6.

<sup>43</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021, pp. 6-7.

- 1.5% to increase the pre-existing IRP assumption of 4.5% required reserves to the 6% that more accurately reflects CAISO load-shedding decision-making;<sup>44</sup> and
- 4.3% as an adder to account for calibration differences between the IRP's capacity expansion model (RESOLVE) and its production cost model (SERVM).<sup>45</sup>

The 4.3% adder corresponds to 2 gigawatts (GW) of resources above and beyond the resources needed to meet the 15% PRM constraint in RESOLVE.<sup>46</sup> SERVM<sup>47</sup> requires those incremental resources by 2026 in order to produce a final loss-of-load expectation (LOLE) of 0.1.<sup>48</sup>

Within those 2 GW, 1.1 GW (or 2.4% of the 4.3% adder in the IRP PRM) result from SERVM's use of three Transmission Access Charge territorial peaks in place of the IEPR CAISO-wide coincident peak. These three peaks sum to 1.1 GW of additional coincident peak load, above the direct IEPR peak load level.<sup>49</sup> With respect to the remaining 0.9 GW (or 1.9% of the 4.3% adder in the IRP PRM), the Commission has stated:

Particularly as the resource mix deviates considerably from historical observation where the system was primarily thermal generation, the amount of deviation to be expected between [the 15% PRM and the 0.1 LOLE] is unknown. A higher reserve margin may be required to achieve equivalent reliability with a higher mix of intermittent resources on the system. In general, it is likely that a 0.1 LOLE in SERVM implies a reserve margin requirement that would be somewhat higher than 15% in RESOLVE in order to result in equivalent results.<sup>50</sup>

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<sup>44</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021, p. 6.

<sup>45</sup> R.20-05-003, *Administrative Law Judge's Ruling Seeking Feedback on Mid-Term Reliability Analysis and Proposed Procurement Requirements*, February 22, 2021, p. 6.

<sup>46</sup> RESOLVE is a publicly available resource planning model that the CPUC uses to identify a portfolio of new and existing resources that meets the greenhouse gas (GHG) emissions planning constraint, responds to reliability needs and provides ratepayer value.

<sup>47</sup> SERVM, or Strategic Energy Risk Valuation Model, is the production cost model that Energy Division Staff uses to measure operational performance and verify satisfaction of the PRM. See *Guide to Production Cost Modeling in the Integrated Resource Plan Proceeding*, November 13, 2018.

<sup>48</sup> LOLE refers to the number of days per year with load shedding events. An LOLE of 0.1 is a standard that allows for one day with outage(s) every ten years.

<sup>49</sup> D.20-03-028, p. 39.

<sup>50</sup> D.20-03-028, p. 40.

In other words, the higher IRP planning PRM is due in part to SERVVM's known exceedance of the IEPR coincident CAISO peak load forecast and in part to the unspecific future consequences of "a higher mix of intermittent reserves on the system." Cal Advocates, therefore, cautions against conflating these issues arising from the IRP proceeding with the RA PRM that undergirds the LSEs' system RA obligations.

With respect to exceeding the IEPR coincident CAISO peak load forecast, the RA proceeding has not vetted the desirability of such divergence from the historical practice of sharing IEPR planning assumptions across the CPUC, CAISO, and CEC planning venues. There is merit in continuing to align these agencies' planning efforts through consistent use of the IEPR, especially now that the CEC has pursued a Senate Bill (SB) 100 planning regime that closely aligns with RESOLVE.<sup>51</sup> Rather than deviating from the shared IEPR planning assumptions, the Commission should consider other procedural options if it wishes to adopt a more conservative RA PRM. Thus, the Commission should not incorporate the explicit exceedance of the IEPR into the RA PRM, as represented by approximately 2.4% of the IRP PRM.

Adding 1.1 GW, or 2.3%,<sup>52</sup> to Cal Advocates recommended 1-in-5 plus 13% PRM would produce a RA PRM higher than the IEPR 1-in-20 forecast. As explained above, Cal Advocates' recommendation effectively allows for the 1-in-10 forecast to the extent that forced outages occur at rates below the annual average during the summer months. As Table 1 shows, adding an increment of 2.3% above the 1-in-10 capacity level would exceed the PRM percentage level needed to reach the 1-in-20 forecast by 0.7%. The IEPR includes no forecast above the 1-in-20, so it is impossible to say precisely what forecast level a 1-in-5 plus 15.3% PRM would produce; however, it would significantly exceed the 1-in-20. These facts make it clear that the Commission should not solve the RA PRM for the LOLE results of SERVVM. To do so would be to ignore the potential for non-capacity solutions that can also achieve greater reliability and a higher effective forecast. As noted above, these complementary efforts include a reconsideration of RA incentives (penalties) and the treatment of ambient derates through thermal resources' NQCs instead of the PRM.

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<sup>51</sup> See <https://www.energy.ca.gov/sb100>.

<sup>52</sup> 13% plus 2.3%. Cal Advocates estimates 2.3% rather than 2.4%, as 1.1 GW is a smaller percentage of the 1-in-5 forecast than the 1-in-2 forecast.

With respect to the future consequences of “a higher mix of intermittent reserves on the system,”<sup>53</sup> such unspecific concerns constitute insufficient fact-finding to raise the RA PRM. The Commission has not published confirmation of the source of these additional 0.9 GW<sup>54</sup> that SERVUM needs in order to achieve an LOLE of 0.1. At a minimum, the Commission should publish SERVUM reports, or other justification, for this 0.9 GW, for parties to review and vet.

This is important, because the Commission otherwise risks adopting a requirement that forces LSEs to incur ratepayer costs for incremental capacity that may not be needed. At this time, the Commission has published insufficient information regarding its use of SERVUM to rule out the possibility that the 0.9 GW is simply a modeling artifact. For example, the SERVUM simulations use different underlying weather years (and load forecast errors) to test the CAISO footprint. The Commission should confirm that these modeling assumptions do not comprise stricter weather year assumptions than the CEC research that supports the IEPR. The Commission should also confirm if the model’s forced outage draws appropriately represent the seasonal variation of forced outages. The SERVUM unit variables that capture forced outages include time to failure, time to repair, and partial outage conditions.<sup>55</sup> Users can also specify maintenance (i.e., planned outage) parameters. It is unclear if these unit variables are sufficient to capture seasonal variation in the actual incidence of forced outages. If SERVUM’s forced outage draws result in higher summer forced outage rates than actuals, the result would be a modeled over-detection of LOLE – insufficient justification for additional capacity.

Cal Advocates also recommends that the Commission provide further analysis of its statement in D.20-03-028 that the 0.9 GW may be needed due to the changing resource mix.<sup>56</sup> Because the results of this analysis could implicate the Unified RA and IRP Modeling Datasets, Cal Advocates recommends that the Commission publish the analytic results on the Commission’s website for general citation in addition to including those materials into the record of the IRP proceeding. Publishing the documentation of SERVUM’s analytic results would either

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<sup>53</sup> D.20-03-028, p. 40.

<sup>54</sup> i.e., 2 GW of total LOLE-driven resources, minus 1.1 GW attributed to the higher SERVUM peak.

<sup>55</sup> *Unified Resource Adequacy and Integrated Resource Plan Inputs and Assumptions – Guidance for Production Cost Modeling and Network Reliability Studies*, March 29, 2019, pp. 45-46. Available at [https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/Unified\\_RAIRP\\_IA\\_Final\\_20190329.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/UtilitiesIndustries/Energy/EnergyPrograms/ElectPowerProcurementGeneration/irp/2018/Unified_RAIRP_IA_Final_20190329.pdf).

<sup>56</sup> D.20-03-028, p. 40.

support or rule out, additional changes to the RA PRM. To focus the Commission’s efforts, Cal Advocates offers the following observations. Cal Advocates believes that while the IRP may be the proper venue for addressing at least some of these issues, they are nonetheless necessary to describe in these comments in order to clarify Cal Advocates’ current opposition to an LOLE-driven RA PRM.

The manner in which D.20-03-028 specifically notes the impacts of “a higher mix of intermittent reserves on the system”<sup>57</sup> indicates that the Commission may have found that some or all of the 0.9 GW is due to expected changes in the CAISO resource portfolio. The primary expected change in the CAISO portfolio is the ongoing development of large amounts of incremental variable resources and energy storage.<sup>58</sup> RESOLVE does subject these candidate resource types to ELCC curve/surface treatment. This includes a battery ELCC curve, derived using SERVM, that the IRP utilized in the modeling work leading up to D.20-03-028.<sup>59</sup> The RESOLVE inputs and assumptions do not include specification for co-located and/or hybrid storage resources, which may offer greater reliability than implied by the RESOLVE battery ELCC curve due to the curve’s assumptions of four-hour standalone storage.

If the RESOLVE battery ELCC curve appropriately captures the declining contributions of higher battery penetrations to the PRM, then additional analysis is necessary to understand why SERVM nonetheless found the RESOLVE storage buildout to be insufficient to meet the 0.1 LOLE for reasons that the Commission attributes in part to intermittent resources. If the ELCC curve does not fully capture battery charging needs, then one possibility may be that the SERVM simulations do not include sufficient energy to charge the battery fleet on high-demand days when imports tighten, while solar and wind curtailment drops to zero. On such days, CAISO gas resources may be able to provide additional energy earlier in the day, though some gas resources face use limitations in those hours.<sup>60</sup> The Commission should confirm that its

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<sup>57</sup> D.20-03-028, p. 40.

<sup>58</sup> D.20-03-028, p. 21.

<sup>59</sup> *Inputs & Assumptions: 2019-2020 Integrated Resource Planning*, pp. 91-92. Available at <ftp://ftp.cpuc.ca.gov/energy/modeling/Inputs%20%20Assumptions%202019-2020%20CPUC%20IRP%202020-02-27.pdf>.

<sup>60</sup> For instance, the Carlsbad Energy Center is restricted from operations between midnight and 6:00 am. See *Carlsbad Energy Center Project Amendments: Final Decision*, CEC, July 2015.

reliability testing indicates these tight conditions are nonetheless sufficient to provide energy to charge storage resources to provide their assumed RA attributes.

If the Commission finds that the SERV M LOLE problem is partly due to insufficient energy for battery charging, then permanently increasing the PRM may be a less appropriate solution than other alternatives. For example, the RESOLVE battery operationalization could be re-specified. On the other hand, treating the issue as a system RA problem by increasing the system capacity constraint in RESOLVE may worsen the problem, because RESOLVE may build a combination of solar and storage in response to any increase in its overall capacity constraint. In that case, only the incremental solar, rather than the incremental storage, would address the problem of insufficient energy for battery charging. Rather than increasing the PRM, a more targeted solution that focuses on the acquisition of resources to charge the previously selected storage resources would provide more ratepayer value.

Finally, Cal Advocates notes that the RA proceeding need not immediately resolve the matter of the extra 2 GW of resources in the proposed IRP ruling. These 2 GW of incremental resources are not associated with planning years before 2026.<sup>61</sup> The Commission has time to research these issues in more detail, and to rule out alternative explanations for the SERV M results that otherwise would exceed the 0.1 LOLE. The Commission should not adopt the IRP's suggested planning PRM as the RA PRM in the absence of further research and evaluation. Instead, the Commission should adopt Cal Advocates' recommendation for a phased-in approach to a new 1-in-5 plus 13% PRM by 2024.

## **7. Conclusion: The Commission Should Adopt Cal Advocates' PRM Recommendation**

The Commission should adopt Cal Advocates recommended revisions to the PRM as described in the proposal above, including the phased implementation in 2023 and 2024 as described on Table 4. The Commission can develop and consider additional refinement to an adjusted PRM, including consideration of net load peak requirements and ambient outage derates, prior to 2023 implementation in the next phase of the RA Rulemaking.

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<sup>61</sup> The 2 GW was first added to the 2026 study year with the proposed Reference System Portfolio for the 2019-2020 IRP cycle. See *2019-20 IRP: Proposed Reference System Plan*, CPUC Energy Division, November 6, 2019, p. 8.