



Stakeholder Comments Template

RA Enhancements

This template has been created for submission of stakeholder comments on the straw proposal part two that was published on February 28. The paper, Stakeholder meeting presentation, and other information related to this initiative may be found on the initiative webpage at:

<http://www.caiso.com/informed/Pages/StakeholderProcesses/ResourceAdequacyEnhancements.aspx>

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on March 20.

Submitted by	Organization	Date Submitted
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Please provide your organization's comments on the following issues and questions.

1. Review of counting rules in other ISO/RTO's

Please provide your organization's feedback on this topic, described in Section 4.1. Please explain your rationale and include examples if applicable.

SDG&E appreciates the CAISO's research of how other ISO/RTOs procure capacity in centralized capacity markets. The concept of unforced capacity (UCAP) is appropriate in a framework when a planning reserve margin (PRM) does not account for a percentage of forced outages. However, in California the CPUC's PRM includes an expected forced outage rate of around 7 percent. Therefore, additional capacity is already procured by Load Serving Entities (LSEs) to maintain system reliability. SDG&E does not oppose the CAISO considering the change to a UCAP concept. However, SDG&E is concerned that a new framework on top of the existing Net Qualifying Capacity (NQC) framework will create extreme inconsistencies and difficulties for parties to procure and maintain reliability. To avoid these issues, SDG&E recommends a two part solution to CAISO's RA Enhancements initiative. First, to reevaluate the forced outage rate in the current PRM established by the CPUC and other Local Regulatory Authorities (LRAs). Second, replace the RA Availability Incentive Mechanism (RAAIM) in its entirety with an Outage substitution market for forced outages.

Though this method may not be as granular as the CAISO's proposed UCAP framework, SDG&E believes that it would achieve the same results without significant impact to the current bilateral framework.

SDG&E requests the CAISO to provide the following information for the April working group meeting to discuss the deficiencies of the current framework.

- System average forced outage data in order to compare to the existing forced outage rate of the existing PRM.
- PRM data for all other LRAs in the CAISO boundary to provide an accurate picture of the deficiencies in the existing framework. SDG&E understands that the PRM data for all LRAs already exist within the CAISO's Interface for Resource Adequacy (CIRA) system. SDG&E also understands that an individual LRA's PRM within CIRA does not specify any forced outage rate, however, this information would provide a general indication of any forced outage rate anticipated in the PRM. If a change to the PRM is necessary, the CAISO can work with stakeholder and the CPUC to make such changes.

Lastly SDG&E believes that the proposed UCAP framework introduces additional complexities for both market participants as well as CAISO if implemented. The CAISO should clarify and address the following questions in the April workshop and CAISO's next version of the proposal:

- Is UCAP a separate capacity product for the bilateral market to procure or is it bundled with NQC?
- Procurement of substitute capacity for planned outages, i.e. is the buyer procuring for UCAP or NQC and does CAISO pay for UCAP only or NQC if the CAISO procures the substitute capacity on behalf of the resource on outage?
- Capacity procurement mechanism (CPM) designations for system versus local capacity from a local resource, i.e. does CAISO CPM the UCAP value when there is a need for system deficiencies or events from a Local resource and only pays based on UCAP but must designate CPM based on NQC for a Local deficiency from the same Local resource?
- What additional infrastructure changes to the CAISO's CIRA system to accommodate for UCAP offers and designations are needed?
- What are must offer obligations related to partial resource adequacy capacity resources?
- Whether UCAP would unfairly derate capacity counting of internal CAISO boundary resources versus imports, even resource specific imports, if the CAISO does not develop a UCAP value for imports?

SDG&E will provide additional details and questions about the complexities in the responses to questions below.

2. Capacity counting and availability best practices

Please provide your organization's feedback on this topic, described in section 4.2. Please explain your rationale and include examples if applicable.

As SDG&E stated above, the CAISO should review the current forced outage rate of the fleet compared to the percentage that's currently embedded within the PRM. If the rates are significantly different, then the CAISO should work with the CPUC to update the PRM itself. This approach is similar to the methodology that NYISO uses, as described by the CAISO.¹

This method would impute the UCAP value into the PRM rather than calculating specific UCAP values for each resource and minimize the complexity for market participants.

3. RA counting rules and assessment enhancements

Please provide your organization's feedback on the following sub-section topics, described in section 4.3.

Please indicate any analysis and data review that your organization believes would be helpful to review on the this topic. Please provide details and explain your rationale for the type of data and analysis that you suggest.

a. Calculating NQC, UCAP, and EFC values topic, described in section 4.3.1.

As the CAISO notes, other ISO/RTOs determine their UCAP values based on the installed capacity (ICAP) and not the NQC of the resource. This is primarily due to the fact that other ISO/RTOs do not have the NQC concept themselves. The ICAP rating equates to the plant maximum (PMAX) output of a resource and not based on the deliverability of the resource. SDG&E recommends the CAISO to utilize the PMAX as the basis of the UCAP calculation rather than the NQC. This is due to the fact that NQCs are not ultimately based on the deliverability studied by the CAISO but also may be adjusted by each resource owner to accommodate for temperature variances throughout the year. Thus, applying a forced outage rate to the NQC value would double penalize a resource's UCAP rating. The following table provides an example of the double penalty issue.

	PMAX	NQC
Capacity	500	490
Effective Forced Outage Rate (EFORD)	10%	10%
UCAP	450MW	441MW

The UCAP formula would result in 441MW rather than 450MW. The CAISO can fix this double penalty by multiplying the forced outage rate by the PMAX rather than the NQC or calculating the forced outage rate by using the NQC of the resource rather than the PMAX.

¹ CAISO straw proposal part 2, Pg 14.

In the first option, multiplying by the PMAX, it is possible that the calculated UCAP value is greater than the NQC of that month. In such instances, SDG&E believes the UCAP value should be capped at the resource's NQC value of that month.

Specifically, SDG&E's proposed calculation of UCAP would be as follows:

$$\text{UCAP} = \min(\text{NQC}, (\text{PMAX}) * (1 - \text{EFORd}))$$

The CAISO is considering two sources of forced outage data. First is the NERC's Generation Availability Data System (GADS). The CAISO notes that GADS makes available fleet wide averages to the public, but does not provide specific resource information. Additionally, GADS does not include data from resources below 20MWs of installed capacity and therefore may miss a large number of resources in the long run. Based on these issues, SDG&E believes that NERC GADS is not an appropriate source of data because the CAISO wishes to calculate UCAP values for each individual resource based on that resource's own forced outage data. However, NERC GADS data may be appropriate if the CAISO adopted SDG&E's proposal to review the forced outage rate within the PRM. Additionally, this data may be used for new resources that do not have sufficient historic data for the UCAP calculation based on the resource type.

The second source of data is the CAISO's own Outage Management System (OMS). The CAISO states that it is unable to determine which outage types would qualify under the EFORd calculation because the outage cards may not adequately cover the different types of forced outages or reflect types of forced outages that would be exempt from the EFORd calculation itself. Confusingly, the CAISO points out that the outage cards in OMS are used to describe whether a resource is exempt from RAAIM. SDG&E understands that RAAIM exempt outages are primarily caused by external forces that are not within the control of the resource. Therefore, SDG&E believes it should be fairly straight forward to calculate the EFORd rate based on the OMS data. If using the OMS data for purposes of the EFORd calculation is not straight forward, SDG&E requests that during the April working group meeting, the CAISO to provide several examples of outages that are particularly challenging. Additionally, it would be helpful to have the CAISO provide how the RAAIM settlement calculation utilized the forced outage data to calculate the RAAIM penalties. This may allow stakeholders to understand how the CAISO settlements group parses out forced outage information within OMS and determine whether a similar methodology can be used for the CAISO to determine the EFORd calculation.

SDG&E recommends that the CAISO define which types of forced outages would be exempt from the EFORd calculation in its next revision of the proposal. SDG&E supports exempting outage cards that are currently RAAIM exempt unless the CAISO elects to revise the nature of work for outage cards.

SDG&E recommends the CAISO to calculate the forced outage rate for one year of data for the next working group meeting prior to deciding on a more complex analysis of annual/seasonal/monthly granularity of the EFORd calculation.

Once the CAISO has calculated each resource's own outage rate, it can create a class average by resource type and apply the average to new resources.

SDG&E does not support making any changes to the calculation of Effective Flexible Capacity determinations at this time. As the CAISO states in its straw proposal, it is not electing to make changes to the System Flexible Capacity needs until the day-ahead flexible ramping product has been implemented for at least one full year. SDG&E is concerned that changes to the counting rules without respective changes to the needs determinations would create an unbalanced framework where the needs do not match that of supply.

SDG&E's main concern with adoption of UCAP for CAISO resources is that it unfairly disadvantages internal CAISO resources versus external import resources. This is due to the fact that the CAISO does not propose to assign a UCAP value to external import resources because the CAISO does not have the forced outage data to calculate UCAP. While SDG&E acknowledges the CAISO's goal to identify the external resources that are importing into the CAISO for RA purposes, the fact that the CAISO does not have the forced outage data to calculate the UCAP of that external import resource creates the disadvantage.

As a capacity product, it is unclear to SDG&E whether a "premium" would yield for resources with higher UCAP compared to that of resources with low UCAP. For an LSE, it may be cheaper to buy multiple low UCAP resources rather than the "premium" resource and reliability is still maintained. If the CAISO needs the "premium" resource, then it must provide a different market signal for LSEs to procure it. SDG&E notes that the CAISO proposes to declare a collective deficiency of System and Flexible RA capacity and backstop procure capacity based on the "least cost solution"² using the CAISO's Competitive Solicitation Process (CSP) and not a metric of the most reliable resource.

- b.** Determining System, Local, and Flexible RA requirements topic, described in section 4.3.2. Please explain your rationale and include examples if applicable.

The CAISO states that it is reasonable to expect that the amount of UCAP made available is sufficient to serve forecasted peak load and ancillary services requirements. This means that the CAISO must carry reserves for three percent of load and three percent of generation or the Most Severe Single Contingency. Under the flexible capacity need assessment, the CAISO also calculates the need based on the maximum of the most severe single contingency or 3.5 percent of forecasted peak load. SDG&E questions whether LSEs would be effectively double procuring for the same amount of capacity with a single resource?

SDG&E is concerned that the CAISO is attempting to establish tariff authority to utilize a different and higher forecasted peak load than that of other LRAs. Generally speaking, the CPUC and the CAISO have historically agreed to utilize the 1:2 CEC forecasted peak load. However, under this initiative, the CAISO is only noting that the 1:2 forecasted peak load is the minimum threshold and not the only default forecasted peak load it shall utilize. This action, if granted, would create differing standards for

² CAISO straw proposal part 2, Pg 23.

LSEs to meet their compliance obligations with the LRA as well as the CAISO. SDG&E does not support this effort if the CAISO intends to use different standards.

- c. RA showings, supply plans, and assessments topic, described in section 4.3.3. Please explain your rationale and include examples if applicable.

The CAISO proposes that it will conduct a System RA deficiency assessment based on NQC values for LSE RA showings to ensure the LSE has met the LRA's PRM requirement. However, if the LRA does not establish a PRM value, then it's unclear if the CAISO would perform the deficiency assessment to the forecasted peak load at all. If there is a deficiency, then the CAISO will only notify the LSE and LRA but will not backstop procure for the system deficiency and/or enforce the LRA's PRM. This effectively negates the LRA's role in the RA process as some LSEs may ignore the NQC all together.

The CAISO does propose to conduct an assessment of the RA showing based on UCAP. If a deficiency occurs, then the CAISO will backstop procure capacity on behalf of the LSE if the LSE does not cure its deficiency.

The CAISO proposes that "LSEs need only submit and show their resources' [NCQCs] like today. Once shown, the CAISO will determine each resource's UCAP value as part of its UCAP assessment."³ This is problematic for multiple reasons.

First, is UCAP a product that needs to be transacted by market participants? If so, then why would the value only be determined after the RA showing?

Second, the CAISO effectively proposes that the UCAP is always bundled and proportional to the NQC procured. If a resource is only needed partially and well below the total UCAP value of the resource, wouldn't the most economic method be to procure only as much NQC as needed to meet the UCAP deficiency.

Third, the collective sufficiency assessment needs additional details, discussion and simulations using actual RA showings. Whenever the CAISO has elected to insert additional functionality into its energy markets which would impact the performance of the optimization, the CAISO tests and simulates the proposed changes for market participants to ensure solutions are feasible without delaying energy market results significantly. SDG&E requests the CAISO to provide additional details on all of the inputs and assumptions into the production cost simulation for the April working group meeting. In addition, SDG&E requests the CAISO to run its simulation using a prior month's data to test the accuracy and speed performance of the production cost simulation.

Fourth, the CAISO proposes to eliminate the forced outage substitution rules that is part of RAAIM in favor of implementing the UCAP and NQC bidding options. As SDG&E suggested in part 1 of the straw proposal, it believes that RAAIM can be replaced with the planned outage capacity procurement market that the CAISO plans on creating for planned outages. SDG&E reiterates this recommendation for the CAISO to consider and discuss at the next working group meeting. In addition,

³ CAISO straw proposal part 2, Pg. 22.

SDG&E believes the CAISO should make clear that it plans to remove all parts of RAAIM and not just the forced outage substitution rules portion.

Fifth, SDG&E supports the CAISO's proposal to provide a mechanism to allow substitute capacity to be procured by the CAISO for planned outages. However, it is unclear whether the CAISO will procure the UCAP volume and thus pay based on UCAP or an NQC volume that has a correlated UCAP volume to meet the UCAP substitution need. This distinction is necessary because the existing CSP does not allow resources to offer different prices for different capacity attributes. It is also important to understand because market participants are not allowed to procure only UCAP in the bilateral market as it is bundled with NQC. Therefore, there would be a different total capacity cost if the CAISO were to settle based on UCAP quantity in its market and the LSEs must settle on NQC quantity in the bilateral market assuming the cost is the same for the same resource. SDG&E recommends the CAISO to provide an example of the must offer obligation of the substitute capacity at the next working group meeting.

The CAISO's proposal for planned outage substitution is different than that was stated at the stakeholder meeting. The proposal is written in a manner to imply that the LSEs would be required to provide substitute capacity if a planned outage, from a third-party resource, impacted the LSE's UCAP position. Yet during the stakeholder meeting, Dr. Meeusen noted that it would be the SC of the resource that would be required to provide the substitute capacity and could utilize the CAISO's CSP market. SDG&E requests the CAISO to clarify its proposal to clearly reflect the proposal verbalized at the stakeholder meeting. SDG&E also requests the CAISO to clarify if the planned outage substitution proposal would apply to planned outages submitted during the delivery month, after T-45 showing, since the CAISO defines planned outages as an outage with a request date of greater than 7 business days in advance of the outage start date.

SD&GE does not support using a transitional mechanism with UCAP. The CAISO has not shown that its OMS data cannot be utilized to calculate the UCAP values and has not shown why the UCAP values can be appropriately merged with RAAIM during a transition period.

SDG&E supports keeping existing bid insertion rules for the must offer obligations for all resources. The CAISO can consider removing these rules once the CAISO's Day Ahead Market Enhancement initiative and new products are well established.

- d. Backstop capacity procurement topic, described in section 4.3.4. Please explain your rationale and include examples if applicable.

SDG&E does not support the application of RAAIM for Reliability Must Run (RMR) contracts because it does not evaluate performance adequately for such contracts that secure capabilities beyond RA. In addition this proposal has the potential to eliminate RAAIM for RA resources, it would seem entirely inconsistent for the CAISO to extend RAAIM to RMR contracts. SDG&E recommends the CAISO investigate and clarify how RMR contracts that are counted on for capabilities beyond RA only are impacted by this proposal.

SDG&E recommends that the CAISO discuss how its backstop procurement solicitation process would incorporate the production cost simulation to ensure reliability is maintained for both System and Flexible deficiencies. SDG&E recommends that the CAISO create a specific section of its proposal to indicate that it is proposing a backstop procure for Flexible deficiencies.

4. Review of RA import capability provisions

Please provide your organization's feedback on the following sub-section topics, described in section 4.4.

Please indicate any analysis and data review that your organization believes would be helpful to review on the this topic. Please provide details and explain your rationale for the type of data and analysis that you suggest.

- a. Maximum Import Capability (MIC) Calculation review, described in section 4.4.1. Please explain your rationale and include examples if applicable.

SDG&E appreciates the CAISO's review of the existing MIC methodology and the CAISO's willingness to consider revisions to the methodology. SDG&E notes that the recent years' decrease in imports during peak load hours is unrelated to the maximum amount of capacity that can simultaneously be imported into the CAISO balancing authority area. The only way to determine the *maximum* simultaneous import capability is through forward-looking studies that consider a range of potential generation dispatch patterns. While it is true that historic imports represent known, reliable, system conditions, there are many more system conditions that would be reliable and accommodate higher levels of simultaneous imports; i.e., higher MIC levels at various intertie points between the CAISO balancing authority and neighboring balancing authorities.

The CAISO's existing MIC methodology tends to perpetuate historic import patterns during peak load hours because *next year's* maximum allowed Resource Adequacy (RA) counting rights on each tie is specifically linked to *past years'* schedules on those ties. A MIC methodology that perpetuates historic import patterns is inefficient and inconsistent with the objective of minimizing RA costs. This inefficiency may be exacerbated by the shift in peak load periods: If recent years' peak load periods occurred earlier in the day than future years' peak load periods, then perpetuating historic import patterns may result in MIC values that unnecessarily constrain the locations and amounts of RA that would be economical to import into the CAISO balancing authority.

SDG&E recommends that the CAISO consider use forward-looking studies to determine MIC at the various tie points. This would allow the MIC to reflect the planned use and expansion of the transmission system, not just the past use of the transmission system.

- b. Available Import Capability Allocation Rrocess review, described in section 4.4.2. Please explain your rationale and include examples if applicable.

Some stakeholders assert that intertie capability is unused and not easily made available to market participants. As noted in SDG&E's response to question 4.a,

SDG&E suspects this may be due to the existing MIC methodology's tendency to perpetuate historic import patterns which creates artificial scarcity. A forward-looking process for determining MIC might help to reduce such artificial scarcity.

SDG&E agrees that the existing MIC allocation process is complex, but also believes it is fair and reasonable. SDG&E also agrees that the bilateral market is illiquid and not easy to transact in given the number of scheduling coordinators and/or LSEs that receive allocations. While SDG&E would support changes to the current process that would enhance the liquidity of the MIC market, SDG&E would not support an automatic release mechanism of unused import capability without compensation to the entity who received the initial MIC allocation. Internal LSEs pay the Transmission Access Charge (TAC) and are therefore entitled to compensation for third-party use of that MIC.

Additional comments

Please offer any other feedback your organization would like to provide on the RA Enhancements straw proposal – part two.