



Stakeholder Comments Template

Resource Adequacy Revised Straw Proposal

This template has been created for submission of stakeholder comments on the *Resource Adequacy Revised Straw Proposal* that was published on July 1, 2019. The proposal, 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 July 24.

Submitted by	Organization	Date Submitted
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Please provide your organization’s comments on the following issues and questions. Please explain your rationale and include examples if applicable.

SDG&E appreciates the opportunity to provide comments on the Resource Adequacy Enhancements Initiative and welcomes the additional details the CAISO has provided in the revised straw proposal.

While SDG&E believes the scope of the initiative provides a holistic redesign of the current RA framework, SDG&E believes that the success of the initiative greatly depends on the careful implementation of the project and that to achieve a successful RA framework implementation key topics should be addressed as individual phases.

SDG&E does not believe the CAISO should implement all of the proposed changes in a single release given the scope of the proposal and that the expected changes require either developing new or performing customizations to existing CAISO software systems. SDG&E believes the following key topics should be addressed each as a standalone phase.

1. Planning Reserve Margin (PRM), UCAP/NQC and Planned Outage and Substation Obligation (POSO)
2. Maximum Import Capability
3. System Sufficiency Test
4. Flexible RA

This proposed structure would allow stakeholders and CAISO to focus on each of the components of the redesign and get each piece right before tackling the next change.

SDG&E provides a high level summary of its comments below.

1) **SDG&E recommends that the CAISO work with the CPUC to update the current PRM.** This would allow the RA framework to continue using the existing NQC product structure. SDG&E believes transitioning to a UCAP product is too complex and does not provide sufficient benefits compared to keeping current product and reevaluating the PRM. The CAISO proposal must also evaluate the impact on existing contracts and other RA related processes both at the CAISO and the CPUC. Another major impact would be to Local RA. Using a different metric (counting convention) for Local RA (NQC) and System RA (UCAP) has major consequences in evaluating how a local unit counts toward a System RA requirement. Until CAISO evaluates the impact on other affected processes, SDG&E cannot consider supporting the use of UCAP.

2) **Issues related to import RA should not be evaluated in a vacuum, and CAISO should wait for the CPUC's IRP and RA proceedings to play out.** SDG&E wants to minimize any gaps or problems that arise between CAISO and CPUC processes related to RA imports. This is best done with a collaborative approach where one organization leads the effort and the other organization provides strong guidance. In this case SDG&E believes that the CPUC should lead the RA import issues discussion because the CPUC proceedings have made significant progress towards resolution of the issues that should not be abandoned or started over at the CAISO.

3) **Flexible RA requirements should not be changed at this time.** The day-ahead market enhancements (DAME) includes a flexible ramping product that should significantly help meet actual ramping needs. More data is needed to demonstrate any changes in flexible RA requirements are needed after DAME has been implemented. Changes contemplated here may prove unnecessary or even counter productive.

4) **Review of RA related penalty structures should be added to this initiative to eliminate any punitive applications that don't incent proper behavior.** A penalty for not meeting a requirement that is impossible to fulfill (e.g. buying capacity that is not available) should be eliminated. Penalties should be limited to actions that go against the proper working of the CAISO markets and(or) actions that the participant has the ability to avoid. A penalty that cannot be avoided is punitive and should be eliminated.

SDG&E expects the CAISO proposal to change significantly as it resolves the above issues particularly the viability of using both UCAP and NQC for RA.

1. System Resource Adequacy

- Please provide your organization's feedback on the *Determining System RA Requirements* as described in *Section 5.1.1*.

SDG&E agrees with the CAISO that the PRM should be revisited because the resources on the system have evolved since the PRM was first developed. However, the CAISO proposal to set its own PRM and implement the UCAP would have many other impacts to existing medium and long term contracts. These would not be a small subset of contracts but rather a majority of existing contracts which are based on the current Net Qualifying Capacity (NQC) framework for

System RA. Investor Owned Utility (IOU) contracts that are applicable to the CPUC's Cost Allocation Mechanism (CAM) that allocates RA benefits to other LSEs are also NQC based. The CPUC's Power Cost Indifference Adjustment (PCIA) proceeding and the various methodologies to account for above market costs for customers are all based on NQC values. If the CAISO were to change the current standard System RA product to one that's based on a UCAP calculation, it would cause many other ripple effects for market participants. A major impact of switching from NQC to UCAP for System RA is the problem that it causes with Local RA which is expected to remain NQC based. The complexity of this change would not be contained to just CAISO processes.

The CAISO's proposed change swaps the complexity of the RA availability incentive mechanism (RAAIM) process with a new RA product that would not require any market participant to provide substitute capacity for forced outages. At the same time, the CAISO hopes that this new RA product would guide procurement towards more "effective" resources that have less forced outages. However, SDG&E does not believe the CAISO has considered the added complexity of implementing the UCAP product for its own systems. First, the CAISO has mentioned that UCAP would require changes to its Outage Management System (webOMS). Second, the CAISO would have to make changes to the CIRA system.

SDG&E does not believe that the added complexity of the UCAP framework is better than the proposal provided by SDG&E in previous comments. Therefore, SDG&E continues to urge the CAISO to consider SDG&E's proposal of working with the CPUC to revisit the PRM while keeping the NQC product for Local and System RA. SDG&E's proposal is simpler because it keeps much of the existing framework intact while ensuring the CAISO has sufficient capacity to bid into the CAISO markets. SDG&E's proposal would also incorporate the Planned Outage Substitution Obligation (POSO) changes proposed by the CAISO and apply it towards forced outages. SDG&E believes this is a simpler method to continue to achieve reliability needs.

The CAISO notes that some Local Regulatory Authority (LRAs) do not set a PRM. This effectively allows those LRAs to lean on the capacity of other LRAs to meet reliability needs. SDG&E supports the CAISO setting a minimum PRM amount for LSEs to meet if their jurisdictional LRA has set a PRM that would be lower than the CAISO's minimum PRM. This approach is similar to the CAISO's tariff authority to establish NQC values for LSEs of LRAs that do not have an approved NQC methodology. However, if LRAs have PRMs higher than the CAISO's minimum PRM, the CAISO should respect the jurisdictional PRM of that LRA for the LRA's jurisdictional LSEs.

- Please provide your organization's feedback on the *Forced Outage Rates and RA Capacity Counting* as described in *Section 5.1.2*.

The data provided in slide 16 of the CAISO's presentation needs further refinement in order to give stakeholders better understanding of the situation with regards to the forced outage rate.

First, it is unclear whether the Forced Outages data provided by the CAISO is during the peak hours of the day. It is SDG&E's experience that many solar resources take outages during the off-peak hours after the sun has set. Including such outages would incorrectly skew the dataset given that the CAISO is only considering forced outage rates for the 16 peak hours of the day.

Second, it is unclear whether the Forced Outage dataset represents the amount of derate above the shown RA value. Assuming a 75 MW (P_{MAX}) resource that is only capable of 60 MWs of (NQC), is shown for 50MWs of System RA capacity. If the resource is derated to 50 MWs, is the CAISO representing the forced outage derate to be 25MW, 10 MW or 0 MW in its dataset. SDG&E believes that it should be 0 MW because the Forced Outage did not impact the RA capacity shown to the CAISO. If the CAISO's dataset included 25 MW or 10 MW, then SDG&E believes that the Forced Outage impact to the shown RA capacity would be overstated.

Finally, the CAISO's limited data is insufficient to derive whether this is a situation that persists throughout the year. SDG&E requests that the CAISO reviews its dataset and addresses these refinements in its next iteration of the proposal.

SDG&E has been requesting for the CAISO to provide aggregate data (slide 16) in more public forums but has been told that such data is confidential and unavailable for public dissemination. SDG&E requests the CAISO to take into consideration the terms of the dataset that submitted in SDG&E's CIDI ticket 00185139 submitted on September 22, 2016 so that it can include such data on a regular basis in the market performance and planning forum to allow stakeholders to better understand the operational RA that is available to the CAISO.

SDG&E requests the CAISO to provide clarifications to the forced outage calculations.

First, the CAISO proposes to use the standard IEEE EFORD availability metric formula. In that calculation, it appears that the units of measurement are hours, not megawatt hours. Therefore, if a 100 MW resource that has a 24 hour award is derated for 1 MW in 1 hour, the standard calculation would result in a 4% forced outage rate (1/24) whereas the forced outage rate should be 0.04% (1/(24*100)).

Second, NQC values are not always equivalent to P_{MAX} of the resource. Outage derates start from the P_{MAX} level of the resource. 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 MW	490 MW
Effective Forced Outage Rate (EFORd)	10%	10%
UCAP	450 MW	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 but 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:

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

Third, the CAISO proposes to use ELCC values for wind and solar resources. SDG&E notes that the ELCC methodology includes planned outages as well as curtailments in the dataset and thus would unfairly penalize such resources. Therefore, SDG&E does not believe the CAISO should simply use the ELCC values without making corrections to the dataset used for the calculation.

Fourth, it is uncertain how the CAISO will establish a UCAP for import RA capacity. Would the CAISO assume that the EFORd of import RA to be 0%?

Finally, the CAISO notes that it has been unable to identify a methodology to convert CAISO's OMS data into forced outage rates and therefore has been unable to provide analytical support for its proposal. The CAISO also mentioned that it would need to make changes to its OMS system to implement its UCAP proposal. SDG&E requests the CAISO to provide additional details on what type of changes are expected so that market participants can better understand the scope of the changes.

- Please provide your organization's feedback on the *System RA Showings and Sufficiency Testing* as described in *Section 5.1.3*.

SDG&E recommends the CAISO to create a separate initiative to manage this proposal. The sufficiency test is highly dependent on the UCAP and forced outage rate data that would be implemented as well as validation of the model itself. The CAISO notes that it will be the first to conduct such an assessment and that no other ISO/RTO uses such a test with a UCAP framework. SDG&E believes the CAISO should not rush to implement this test without understanding how to properly interpret the results.

SDG&E has previously asked the CAISO to provide a proof of concept using existing RA plans to determine whether this proposal is feasible and would provide any additional benefits. Without any analysis or supporting data to show the benefit of this test, SDG&E believes the CAISO would only be adding complexity

and taking away valuable time from market participants who have to ensure RA procurement can occur before other CAISO deadlines.

At this time, SDG&E requests the CAISO to provide additional details of the sufficiency test using existing RA plan data for a summer and winter month in 2018.

- How much time does the assessment take? The CAISO proposes to limit it to 10 days.
- How do market participants validate the Integrated Optimal Outage Coordination tool? Does the tool currently review RA-only or all resources?
- How does the CAISO incorporate potential collective Local RA deficiencies if the CAISO did not designate CPM backstop with a System UCAP deficiency? The CAISO notes that this test can only be run on a monthly basis because only the month-ahead process contains 100% of supply to meet Local, System and Flexible RA requirements.
- Does this test occur prior to the proposed planned outage process enhancement?
- What are the ramifications of one LSE effectively selling surplus UCAP capacity to another deficient LSE through the CAISO?

- Please provide your organization's feedback on the *Must Offer Obligation and Bid Insertion Modifications* as described in *Section 5.1.4*.

SDG&E is reviewing the impact of the must offer obligation and bid insertion with respect to the UCAP proposal.

- Please provide your organization's feedback on the *Planned Outage Process Enhancements* as described in *Section 5.1.5*.

SDG&E supports the idea of the CAISO matching substitute capacity through its market place. SDG&E requests the CAISO to confirm that costs and revenues will be directly allocated by the CAISO and not by the parties bilaterally.

SDG&E does not support the comparability categories proposed by the CAISO. SDG&E believes that this will create a non-standard RA product. Currently, in the planned outage timeframe, the CAISO allows System RA capacity to substitute for Local RA resources. If the CAISO does not allow this in the planned outage process, then it is possible that resources in certain Local areas may never be allowed to take a planned outage because there are no surplus Local resources to provide substitution. In that case, the Local resource would have its UCAP lowered because it would not be able to provide substitution for a planned outage.

- Please provide your organization's feedback on the *RA Import Provisions* as described as described in *Section 5.1.6*.

Issues related to import RA should wait for clarity from the CPUC's IRP and RA proceedings. The CAISO is participating in these CPUC proceedings and should

guide results there to be compatible with changes the CAISO is proposing here. SDG&E wants to minimize any gaps or problems that arise between CAISO and CPUC processes related to RA imports. This is best done with letting one organization leading the effort with the other organization providing strong guidance. In this case the CPUC should lead RA import issues because they are already deeply involved in proceedings on the RA import issues.

- Please provide your organization's feedback on the *Maximum Import Capability Provisions* as described in *Section 5.1.7*.

SDG&E suggests that the CAISO create a separate initiative for the MIC proposal after phase 1 of the RA Enhancements

In summary, please provide your organization's position on System Resource Adequacy (Section 5.1). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

2. Flexible Resource Adequacy

SDG&E does not support making changes to the current flexible RA framework in the RA Enhancements initiative. SDG&E believes that designing a new Flexible RA framework requires robust discussion. The CAISO noted in FRACMOO 2 that it would put the initiative on hold until the Day-Ahead Market Enhancements DAME was implemented to have a better understanding of how changes in FRACMOO 2 could be better aligned with the new market. SDG&E continues to support this position and therefore provides no other comments to the CAISO's questions below.

- Please provide your organization's feedback on the *Identifying Flexible Capacity Needs and Requirements* as described in *Section 5.2.1*.
- Please provide your organization's feedback on the *Identifying Flexible RA Requirements* as described in *Section 5.2.2*.
- Please provide your organization's feedback on the *Setting Flex RA Requirements* as described in *Section 5.2.3*.
- Please provide your organization's feedback on the *Establishing Flexible RA Counting Rules: Effective Flexible Capacity Values and Eligibility* as described in *Section 5.2.4*.
- Please provide your organization's feedback on the *Flexible RA Allocations, Showings, and Sufficiency Tests* as described in *Section 5.2.5*.
- Please provide your organization's feedback on the *Flexible RA Must Offer Obligation Modifications* as described in *Section 5.2.6*.

In summary, please provide your organization's position on Flexible Resource Adequacy (Section 5.2). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

3. Local Resource Adequacy

- Please provide your organization's feedback on the *Local Capacity Assessments with Availability Limited Resources* as described in *Section 5.3.1*.

SDG&E understands that the 4-hour minimum requirement may no longer be sufficient to meet reliability needs for certain local areas. More data from CAISO on each local area's specific needs beyond the shown graphs is needed. Therefore, SDG&E recommends that the CAISO provide additional detailed information for any local area with needs beyond 4-hours and quantify how many MWs are needed and for how long. Local area needs vary widely so the requirement should be kept at 4-hours and backstop as necessary if the final portfolio of resources for a particular local area prove to be insufficient.

- Please provide your organization's feedback on the *Meeting Local Capacity Needs with Slow Demand Response* as described in *Section 5.3.2*.

SDG&E has no comments at this time.

In summary, please provide your organization's position on Local Resource Adequacy (Section 5.3). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

4. Backstop Capacity Procurement Provisions

- Please provide your organization's feedback on the *Capacity Procurement Mechanism Modifications* as described in *Section 5.4.1*.

SDG&E understands the proposal to request backstop authority for UCAP deficiencies. However, it is unclear to SDG&E why the CAISO would retain backstop authority for System NQC deficiencies if the CAISO proposes to no longer validate System NQC RA for deficiency purposes.

- Please provide your organization's feedback on the *Reliability Must-Run Modifications* as described in *Section 5.4.2*.

SDG&E does not support using RAAIM as a primary tool to ensure RMR resources bid into the CAISO markets.

- Please provide your organization's feedback on the *UCAP Deficiency Tool* as described in *Section 5.4.3*.

SDG&E does not support the proposed UCAP deficiency tool. The proposal can allow one LSE to receive a windfall payment for showing surplus UCAP while other LSEs are deficient. This example is clearly laid out between examples 2 and 3 where the only difference is that a single LSE showed an extra 5 MWs in example 2 while no LSE showed extra capacity in example 3. In both examples, the deficient LSEs had an aggregate shortage of 25 MWs. Yet in example 2, because one LSE showed extra, it triggered a penalty mechanism for the other LSEs while this was not the case in example 3.

In summary, please provide your organization's position on Backstop Capacity Procurement Provisions (Section 5.4). (Please indicate Support, Support with caveats, Oppose, or Oppose with caveats)

Additional comments

Please offer any other feedback your organization would like to provide on the Resource Adequacy Revised Straw Proposal.