California ISO

Stakeholder Comments Template

Resource Adequacy Enhancements

This template has been created for submission of stakeholder comments on the Resource Adequacy Enhancements fifth revised straw proposal that was published on July 7, 2020. The proposal, stakeholder meeting presentation, and other information related to this initiative may be found on the initiative webpage at: http://www.caiso.com/StakeholderProcesses/Resource-Adequacy-Enhancements

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on **August 7, 2020**.

Submitted by	Organization	Date Submitted
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Please provide your organization's overall position on the RA Enhancements fifth revised straw proposal:

☐ Support
☐ Support w/ caveats
☐ Oppose
☐ Oppose w/ caveats
☐ No position

LSA and SEIA welcome the opportunity to provide feedback to the CAISO in this initiative. While the CAISO's proposal would exempt solar resources from many of its provisions, their comments mainly focus on the implications for storage resources, since increasing numbers of solar projects are incorporating storage capacity, and on Hybrid Resources (where storage would be paired with Variable Energy Resources (VERs) in a single Resource ID). These comments also include clarification requests related to VER RA Imports and Hybrid Resources.

Please provide your organization's comments on the following issues and questions.

1. System Resource Adequacy

Please provide your organization's feedback on the System Resource Adequacy topic as described in section 4.1. Please explain your rationale and include examples if applicable.

a. Please provide your organization's feedback on the Determining System RA Requirements topic as described in section 4.1.1. Please explain your rationale and include examples if applicable.

b. Please provide your organization's feedback on the Unforced Capacity Evaluations topic as described in section 4.1.2. Please explain your rationale and include examples if applicable.

Section 4.1.2 is 25 pages long and contains <u>many</u> more proposals than those covered in (i)-(iv) below. LSA and SEIA have comments on several of those other topics and have included them in "Additional Comments" at the end of this template.

i. Please provide your organization's feedback on whether the ISO should establish a dead band around a resource's UCAP value given the associated benefits and burdens, as described in section 4.1.2. Please explain your rationale and include examples if applicable.

LSA and SEIA support a reasonable deadband (e.g., 2%) for the reasons explained below.

- **Contrary to the CAISO's statement, this element should not add "significant complexity."** (Proposal, p.28) LSA and SEIA do not see how an extremely complex formula with an after-the-fact Supply Cushion criterion for hours considered, and seasonal Hourly Unavailability Factors (HUFs), three-year Seasonal Average Availability Factors (SAAFs), and Weighted SAAF (WSAAF) with different weights each year, for each RA Resource, will somhow be rendered "significantly complex" by a simple subtraction deadband based only on the result of the other calculations.

  With a 2% deadband, if the UCAP calculation yields a value at least equal to 98% of NQC, the UCAP would be set at the NQC. If the UCAP calculation yields a value less than 98% of UCAP, the UCAP would be adjusted accordingly; for example, if the UCAP calculation yields a UCAP equal to 95% of NQC, the UCAP assigned to the project would be 97% of NQC.

  This is simple math and can be readily incorporated into the software developed for all the other required calculations.

- **The deadband is a reasonable feature of RAAIM that should be included here for the same reasons it was included in RAAIM.**

  It is simply unreasonable to expect that resources will suffer zero forced outages. No manufacturer warrants that its equipment will perform 100% of the time, and the current RAAIM framework recognizes this by setting a known target performance level, combined with the deadband. It is inherently unfair to penalize a resource for performance that is less than perfect.

- **The deadband concept has been applied to other CAISO market features, most notably Uninstructed Deviation Penalties, for many of the same reasons that it should be incorporated here.**

  For UDP, the deadband recognizes that some reasonable deviation from Dispatch Instructions is unavoidable for many resources, so the penalty would not apply to small deviations.

  Similarly, UCAP reduction is a form of penalty that should not apply starting with the first MW of de-rate or outage. The proposed 2% deadband is comparable to the UDP deadband.

- **The new framework significantly burdens suppliers far more than LSEs, and a deadband would share those burdens more fairly.**

  As explained further below, it is unlikely, as the Proposal suggests, that a deadband would require additional UCAP procurement by LSEs compared to today – that would be true only if compared to the new framework without a deadband. That is indicative of the more punitive nature of the proposed framework compared to RAAIM. A deadband would mitigate, to some degree, those severe negative UCAP impacts on suppliers by sharing a small amount of that additional burden with LSEs. LSE/SEIA maintain that this burden sharing is more just and reasonable than the proposed one-sided framework changes.

  - **Neither UCAP nor a deadband will likely increase net procurement for LSEs compared to today.** LSEs would technically procure more resources to meet UCAP targets that exceed NQC, but that should be balanced by reduction of the 15% Planning Reserve Margin (PRM) to remove resource procurement to cover forced outages, including forced outages not penalized under RAAIM. Thus, the net impact of the new framework on LSEs will probably not change – they have to procure enough resources for CAISO reliability now, including coverage for forced outages, and they will continue to have that obligation in the future.

    It is true that a deadband under the new framework would require establishment of slightly higher LSE UCAP numeric procurement targets compared to UCAP numeric procurement targets without a deadband. However, overall resource procurement would have to be the same, since both today under the new framework, LSEs must procure enough resources to cover CAISO reliability inclusive of forced outages.

  - **UCAP will be significantly more burdensome to suppliers than RAAIM.** RAAIM has a set, known-in-advance performance target, a deadband, known performance hours, and upside potential. Resources with superior performance can receive incentive payments, and those whose performace is close to the target are not penalized. LSEs pay nothing for it, since it is a self-funding mechanism.

    UCAP, by contrast, will have no set performance target or performance hours, no upside bonus potential, and under the current proposal, the first MW of forced outage will result in PPA payment reductions for suppliers. Incorporation of a deadband to the otherwise purely punitive proposed framework will make the overall proposal much more equitable.

ii. Please provide your organization's feedback on Option 1 and Option 2 for calculating UCAP for new resources without three full years of operating history, as described in section 4.1.2. Please explain your rationale and include examples if applicable.

The Proposal offers the options below, with Option 2 favored by the CAISO.

Option 1: Start w/class average (similarly designed resources, same technology)
Year 0: 45% class avg., 35% class avg., 20% class avg.
Year 1: 45% year 0 performance, 35% class avg., 20% class avg.
Year 2: 45% year 1 performance, 35% year 0 performance, 20% class avg.
Year 3: 45% year 2 performance, 35% year 1 performance, 20% year 0

Option 2: Start with NQC, place heavy emphasis on initial actual performance
Year 0: (i.e. before actual operational data): NQC
Year 1: 70% year 0 performance, 30% NQC
Year 2: 55% year 1 performance, 35% year 0 performance, 10% NQC
Year 3: 45% year 2 performance, 35% year 1 performance, 20% year 0

If forced to choose, LSA and SEIA favor Option 2, as stated in their prior comments, because use of a "class average UCAP would understate likely better performance of new resources compared to older resources. However, LSA and SEIA propose here that developers be allowed to choose which option they prefer, i.e., that the CAISO should offer both options. These positions are described further below.

Why Option 2 is more appropriate for storage

Option 1 is particularly problematic for storage resources, because:

- **The "class" is still not well defined.** Battery storage comprises most currently proposed installations, but not all of them, and even battery technology is still under development.
- **There are few operating installations**, in particular of the size contemplated for upcoming new projects, and even fewer with three years of operating data.

If Option 1 is selected, the CAISO must be more specific about how it will define "class" for this significant new resource and the sources of the available data it will use to establish "availability" for those resources, given their relatively recent operating history and relative scarcity among operating resources.

Why offering a choice makes sense

LSA and SEIA note that problems identifying the "class" and limited comparable available operating data will be particularly acute, not only for battery storage, but for any new or improved generation or storage technologies (e.g., larger wind turbines) and resources with few similar installations (e.g., pumped storage). However, these concerns may not apply to resources with conventional technologies with a long available operating history

For these and other reasons, LSA and SEIA recommend that the CAISO allow developers to choose between the defined options, perhaps through a one-time election when a new facility goes into Commercial Operation. In other words, there is no reason why "one size must fit all." Option 1 may be more appropriate for facilities with demonstrated technologies and a robust "class" with long operating history, while Option 2 may be more appropriate for facilities with newer or more unique technologies.

iii. Please provide your organization's feedback on the ISO's approach to use the historical availability during the RAAIM hours for years prior to 2019 and the historical availability during the 20% tightest supply cushion hours in years 2019 and beyond for hydro resources, as described in section 4.1.2. Please explain whether this approach is necessary or preferred to the standard UCAP calculation to reflect hydro availability.

iv. Please provide your organization's feedback on the modifications for UCAP counting rules for storage resources as described in section 4.1.2. Please explain your rationale and include examples if applicable.

LSA and SEIA do not have an opinion on the proposed treatment of either End-of-Hour State of Charge (EOH SOC), or the Minimum SOC proposal to preserve SOC to meet upcoming schedules, as described on p.29 of the Proposal.

However, the Proposal does not explain whether or how these features would apply to Hybrid Resources that include storage. For example, while a stand-alone storage project might need a certain SOC to meet schedules in future hours, a Hybrid Resource can provide energy from either storage or solar in many hours. Thus, any Minimum SOC determination applied to Hybrid Resources should include forecasted energy generation from the non-storage element. i.e., the Minimum SOC would be lower than for a stand-alone storage project with the same upcoming energy schedules.

c. Please provide your organization's feedback on the System RA Showing and Sufficiency Testing topic as described in section 4.1.3. Please explain your rationale and include examples if applicable.

d. Please provide your organization's feedback on the Must Offer Obligation and Bid Insertion Modifications topic as described in section 4.1.4. Please explain your rationale and include examples if applicable.

i. Please provide your organization's feedback on generally defining variations to the must offer obligations and bid insertion into the day-ahead market based on resources type, as described in Table 12 in section 4.1.4. Please explain your rationale and include examples if applicable.

LSA and SEIA's comments relate to the following excerpts from Table 12 (Variations to Standard Day-Ahead Must Offer Obligation and Bid Insertion):

Resource Type	DA MOO	DA Bid Insertion
Eligible Intermittent Resource	May, but not required to, submit Bids in Day-Ahead Market	No
NGR	Standard DA MOO plus MOO should reflect charge & discharge capabilities and resource must be non-REM	Yes

LSA and SEIA do not object to the DA MOO and DA Bid Insertion provisions in Table 12 However, the CAISO should explain how the MOO (for both resource types) and DA Bid Insertion (for Hybrid Resources) would work for PCDS resources. For example, for a 100 MW 80% PCDS solar project, would the real-time MOO be80% of the forecasted output?

e. Please provide your organization's feedback on the Planned Outage Process Enhancements topic as described in section 4.1.5. Please explain your rationale and include examples if applicable.

f. Please provide your organization's feedback on the RA Import Requirements topic as described in section 4.1.6. Please explain your rationale and include examples if applicable.

The Proposal (at p.63) states that RA Imports would have a Day Ahead Market MOO. The Proposal further states at p.70:

> As an interim step, and until the CAISO implements the Day Ahead Market Enhancements initiative, RA imports will have a real-time must offer obligation as applicable to that RA import type. With implementation of the extended suite of day-ahead market products contemplated in that initiative, the CAISO expects all RA imports will then have only a day-ahead market must offer obligation. Real-time market bidding obligations will then depend solely on the day-ahead market award and will apply regardless of RA status.

The Proposal states at pp.71-72 that imports "must offer full RA capacity into the Day Ahead Market."

These proposals do not discuss applicability to Variable Energy Resouces. LSA and SEIA request that CAISO clarify that Must-Offer Obligations for VER imports would be the same as for inside-CAISO VERs, i.e.: (1) They are not required to submit Day Ahead Market bids; and (2) their Real Time Market MOOs are equal to their forecasted output, not their "full RA capacity" or NQC.

This clarification will be enabled through the increased resource-specific requirements in the Proposal.

i. Please provide your organization's feedback on the issue of whether firm transmission service on the last line of interest to the CAISO BAA will ensure reliability and is feasible, or whether the CAISO should require point-to-point, source to sink firm transmission service as originally proposed, as described in section 4.1.6 page 68. Please explain your rationale and include examples if applicable.

ii. Please provide your organization's feedback on other BAA's systems bordering the CAISO and whether such a "last line of interest" proposal is feasible and would effectively support RA import capacity dependability and deliverability, as described in section 4.1.6 page 68. Please explain your rationale and include examples if applicable.

iii. Please provide your organization's feedback on whether a non-compliance penalty or other enforcement actions are necessary if delivery is not made under firm transmission service, as described in section 4.1.6 page 69. Please explain your rationale and include examples if applicable.

iv. Please provide your organization's feedback on how to convey the last line of interest, as described in section 4.1.6 page 69. Please explain your rationale and include examples if applicable.

v. Please provide your organization's feedback on the options proposed in section 4.1.6 and any other potential mechanisms that would best ensure RA imports are dependable and deliverable if the CAISO were to

adopt, as an alternative, a "last line of interest" firm transmission service requirement. Please explain your rationale and include examples if applicable.

g. Please provide your organization's feedback on the Operationalizing Storage Resources topic as described in section 4.1.7. Please explain your rationale and include examples if applicable.

LSA's and SEIA's responses to Section 1(iv) above apply here as well.

2. Flexible Resource Adequacy

Please provide your organization's feedback on the Flexible Resource Adequacy topic as described in section 4.2. Please explain your rationale and include examples if applicable.

3. Local Resource Adequacy

Please provide your organization's feedback on the Local Resource Adequacy topic as described in section 4.3. Please explain your rationale and include examples if applicable.

a. Please provide your organization's feedback on the UCAP in Local RA Studies topic as described in section 4.3.1. Please explain your rationale and include examples if applicable.

4. Backstop Capacity Procurement Provisions

Please provide your organization's feedback on the Backstop Capacity Procurement Provisions topic as described in section 4.4. Please explain your rationale and include examples if applicable.

a. Please provide your organization's feedback on the Capacity Procurement Mechanism Modifications topic as described in section 4.4.2. Please explain your rationale and include examples if applicable.

b. Please provide your organization's feedback on the Making UCAP Designations topic as described in section 4.4.3. Please explain your rationale and include examples if applicable.

c. Please provide your organization's feedback on the Reliability Must-Run Modifications topic as described in section 4.4.4. Please explain your rationale and include examples if applicable.

    i. Please provide your organization's feedback on an appropriate availability incentive design to apply to RMR resources after the removal of the RAAIM tool, as described in section 4.4.4. Please explain your rationale and include examples if applicable.

d. Please provide your organization's feedback on the UCAP Deficiency Tool topic as described in section 4.4.5. Please explain your rationale and include examples if applicable.

5. Please provide your organization's feedback on the implementation plan, including the proposed phases, the order these policies must roll out, and the feasibility of the proposed implementation schedule, as described in section 5. Please explain your rationale and include examples if applicable.

Section 5 states the CAISO's implementation plan as follows:

Phase One: (2021 for RA year 2022)
- RA Import provisions
- Planned outage process enhancements
- Local studies with availability limited resources CPM clarifications
- Operationalizing Storage
- UCAP - Phase 1
- Portfolio Assessment - Phase 1

Phase Two: (2022 for RA year 2023)
- UCAP - Phase 2
- Portfolio Assessment - Phase 2
- Must offer obligations and bid insertion rules
- Flexible resource adequacy

With all due respect, it is not clear how "UCAP Phase I" and "UCAP Phase 2" are defined. LSA and SEIA assume that this terminology refers to the CAISO's stated intent to implement UCAP values on a "shadow" basis in 2021 for RA Year 2022, and to implement UCAP values that "count" in 2022 for RA Year 2023. The CAISO should clarify these elements of the proposed implementation plan in the next version of the Proposal.

6. Please provide your organization's feedback on the proposed decisional classification for this initiative as described in section 6. Please explain your rationale and include examples if applicable.

Additional comments

Please offer any other feedback your organization would like to provide on the Resource Adequacy Enhancements fifth revised straw proposal.

As noted in Section 1 of this comment template, there are many items in Section 4.1.2 of the Proposal that are not covered in the template. LSA and SEIA's comments three of those other topics – Outage Definitions, Information about UCAP Assessment Hours, and Transition from NQC to UCAP – are given below.

Outage Definitions (Proposal, p.14)

LSA and SEIA believe that two additional outage types should be exempt from UCAP determination: (1) Urgent Outages; and (2) the proposed Hybrid Resource "outage cards." The reasons reasons for these recommendations are explained below. **LSA and SEIA offered these comments on the Fourth Revised Straw Proposal, but the CAISO did not respond to those comments, or even note them in the Proposal. They request that CAISO respond here.**

Urgent Outages

The Proposal continues to count both Forced and Urgent Outages against determination of UCAP. Like the prior proposal, the Proposal does not explain the rationale for including Urgent Outages, so LSA and SEIA repeat their prior comments here.

Urgent Outages are defined as conditions when:

> Facility/equipment that is known to be operable, yet carries an increased risk of a Forced Outage occurring. Facility/equipment remains in service until personnel, equipment and/or system conditions allow the outage to occur. Urgent Outages allow Facilities to be removed from service at an optimal time for overall system reliability. For Urgent Outages, the work may or may not be able to wait for the ShortRange outage window. (p.15)

The strongest reason for excluding Urgent Outages from UCAP determination is that (despite the misleading name) they are not actually outages. (This argument is particularly strong where the the work can be deferred to the ShortRange Outage Window.) Urgent Outages are reported to the CAISO for its information, but the facility would still be performing (and contributing to system reliability) during this time.

Moreover, counting these conditions as a UCAP deduction (i.e., as if they were actually Forced Outages) provides a strong disincentive for suppliers to report them to the CAISO. Determination of whether there is an "increased risk of a Forced Outage occurring" is inherently subjective in any case, and if the CAISO finds these declarations to be useful, it should not discourage suppliers from providing that information.

For these reasons, LSA and SEIA strongly believe that the CAISO should only count actual Forced Outages against UCAP, and exclude Urgent Outages.

Outage Definitions - Hybrid Resources outage cards

The CAISO should include in the list of exempt outages for UCAP determination purposes the outage-card system it has proposed in the Hybrid Resources Initiative. This system would allow Hybrid Resources to indicate to indicate when the VER component is unavailable because it is charging the storage component, e.g., to comply with grid-charging restrictions related to Investment Tax Credit (ITC) recovery.

The June 25th CPUC decision in Rulemaking 19-11-009 would reduce Qualifying Capacity (QC) for mixed-fuel resources, including Hybrid Resources, to account for the solar capacity assumed to be dedicated to charging the storage capcity. This QC reduction will be reflected in a reduced Net Qualifying Capacity for such resources and, therefore, in a reduced UCAP as well.

Counting outage cards submitted under the proposed process in the Hybrid Resources Initiative against UCAP would then effectively be penalizing a Hybrid Resource with ITC limtations twice for the same thing. The CPUC has already addressed ITC restrictions in its adopted framework, so the CAISO need not do so in its own.

Moreover, reducing UCAP every time a Hybrid Resource uses such outage cards would undermine entire flexibility intended for this configuration and render the CAISO's proposal unworkable.

For these reasons, LSA and SEIA strongly believe that the CAISO should only count actual Forced Outages against UCAP, and exclude Urgent Outages.

Information about UCAP Assessment Hours (Proposal, p.24)

LSA and SEIA argued before that the concept of focusing incentives and performance measures on a subset of hours is based significantly on the assumption that suppliers can exert extra efforts to manage the timing of forced outages, to the extent that they are able – e.g., make temporary changes to defer the potential for such outages beyond the current AAH window.

This behavior is not "trying to game when they take outages to avoid penalties as is done today with RAAIM." Instead, it is trying to control the outage to the extent possible so the resource remains available to the CAISO when it is needed most. It's not "gaming" to respond correctly to a clear economic signal in a structure designed to incent exactly that.

Without any advance notice – even on a non-binding, forecasted basis – the focus on high availability in the highest-need hours serves no purpose. Basically, the CAISO should choose one of two consistent paths:

- **Provide a continuing incentive to be available in all hours, and then count performance in all hours for UCAP.** This path assumes that there is no value in providing advance information, e.g., so suppliers can make short-term changes to "hang on" until less-constrained hours.
- **Identify in advance (even by a day or two, or hours) the tight "supply cushion" hours, even on a non-binding forecast basis, and then count performance in those hours.** This path assumes that suppliers could make short-term efforts to continue operations through tight supply hours.

The current proposal – calculating availability based only on a subset of hours not identified until after the fact – has the worst of all worlds, with no clear signal to suppliers of when performance is most valuable and no opportunity to try and help the CAISO when conditions are tight.

Additionally several stakeholders asked that we publish when UCAP Assessment Hours fell in the previous year. The CAISO will accommodate this request and will publish.

The CAISO's offer to provide "after-the-fact when UCAP Assessment Hours occurred during the previous Peak and Off Peak Months as part of its annual UCAP process" – i.e., once a year – is not adequate and will not help the CAISO or suppliers implement this concept.

Instead, the CAISO should provide continuing information on hourly supply-cushion figures, e.g., on a daily, weekly, and monthly basis starting right after implementation. This information will help suppliers begin to understand when the CAISO has tight supply conditions and try to adjust their operations accordingly; this immediate and frequently updated information will be particularly important if CAISO will provide no forecast or advance notice of tight supply-cushion conditions.

Transition from NQC to UCAP (Proposal, p.37)

Two options are under consideration:

- **Option 1:** (1) Redefine NQC as "Deliverable QC" (DQC); and (2) change the definition of "NQC" to be the same as the proposed UCAP measure. The MOO would be based on the DQC for most resources.
- **Option 2:** Retain the existing NQC definition and create a new UCAP term (UCAP) to represent a resource's capacity value corrected for outages. The MOO would be based on the NQC for most resources. This is the CAISO's orginal proposal, which it continues to support.

LSA and SEIA strongly object to Option 1and asks the CAISO to maintain its support of Option 2.

The concern of parties supporting Option 1 is that their current capacity contracts, which presumably include payments based on NQC, would no longer cover their entire RA obligations given the new UCAP measure and requirement. They therefore seek to unilaterally shift that impact to their supplier counterparties by changing the payment basis from NQC to UCAP – not by trying to renegotiate their contracts, but by trying to convince the CAISO to make that change for them by merely changing long-standing and well-established CAISO tariff terminology.

Contracts typically contain "Change in Law" provisions, and these provisions may or may not include a major rate-design change like UCAP introduction. The CAISO should not modify its proposals, and make all the other tariff changes required under Option 1, to give some parties a "second bite at the apple" to make up for things they wish they'd gotten in an earlier PPA negotiation. Option 2 simply does not pass the "just and reasonable" test.

Acceptance of contracts as negotiated, voluntary renegotiations, and/or incorporating the new provisions in new contracts are all proper ways for LSEs to manage the new requirements. LSA and SEIA note that LSEs are already implementing this last tool by incorporating new UCAP features into new pro forma contracts and those currently under negotiation.