Regional Resource Adequacy

Second Revised Straw Proposal

May 26, 2016

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1. Executive Summary

On October 7, 2015, California Governor Jerry Brown approved Senate Bill No. 350 ("SB 350"), the Clean Energy and Pollution Reduction Act of 2015. The bill provides for the potential transformation of the California Independent System Operator Corporation ("ISO"), which already operates regional markets and provides interstate transmission service, into a more regional organization, with the approval of the Legislature pursuant to a specified process. As entities located outside of the ISO's current balancing authority area ("BAA") express interest in potentially joining the ISO, it will be necessary that the ISO's rules for resource adequacy ("RA") work effectively in a multi-state environment because RA is integral to reliably operating the electric power system. The ISO will further develop the details of this proposal with stakeholder engagement through this initiative, with the process culminating in a proposal that ISO management will present to the ISO Board of Governors and the Federal Energy Regulatory Commission ("FERC") for approval. The ISO plans to present a proposal to the ISO's Board of Governors at the Board's August 31-September 1, 2016 meeting.

The primary objective of this initiative is to implement a multi-state process that ensures that sufficient capacity is offered into the ISO's market to serve load and reliably operate the electric system. The ISO proposes to build on existing, proven mechanisms to create a multi-state ISO RA framework. The proposed framework provides the flexibility for Local Regulatory Authorities ("LRAs") and Load Serving Entities ("LSEs") to maintain their current capacity procurement programs. The ISO will help to facilitate these programs by clearly communicating to state regulatory commissions, LRA, and LSEs the ISO's forecasted reliability needs to inform capacity procurement decisions. The ISO intends to only change those tariff provisions that require modification to make RA work in the context of an expanded BAA that spans multiple states. This stakeholder initiative is focused on "need to have" items for an expanded BAA. It is important that the provisions for a multi-state ISO be put in place through a filing to FERC by the end of 2016, so that the regulatory approval process can begin by early 2017 for entities that may be interested in joining an expanded BAA.

The Second Revised Straw Proposal includes discussion on two new scope items; (1) Resource Adequacy unit outage substitution rules for internal and external resources, and (2) Discussion of import resources that qualify for Resource Adequacy purposes. The proposal also provides additional details on the ISOs proposed changes to the following elements: (3) Load forecasting, (4) Maximum Import Capability ("MIC"), (5) Monitoring locational RA needs and procurement Levels, (6) Allocating RA Requirements to LRAs/LSEs, (6) Reliability assessment; including the Planning Reserve Margin ("PRM") methodology and uniform counting methodologies.

The ISO provides details on the changes to the following elements of the Regional RA initiative in this Second Revised Straw Proposal:

1. *Resource Adequacy Unit Outage Substitution Rules for Internal and External Resources* – The ISO has received stakeholder comments that have prompted the ISO to investigate the question: Should internal non-local resources that experience an outage requiring replacement be allowed substitute with external resources if the external resource used is also required to take on the same obligations as the internal resource being substituted for? The ISO explains this issue in further detail and seeks stakeholder feedback.

2. *Discussion of Import Resources that Qualify for RA Purposes* – The ISO has also received stakeholder comments that have prompted the ISO to investigate what types of import resources should qualify for RA purposes. The ISO has given additional consideration to this aspect of RA to ensure that the requirements for RA imports are clear, which will be especially important as the BAA expands to include new entities. In addition, the ISO's Department of Market Monitoring ("DMM") has submitted written comments on the revised straw proposal that requests that the ISO consider clarifying the requirements for RA imports. The ISO has included this element in order to initiate a discussion with stakeholders and seeks feedback on the issue described in detail in this proposal.

3. *Load Forecasting* – The ISO proposes that the coincident system load forecast for an expanded BAA would be created each year by the ISO based on load forecast data created by and submitted by LSEs. The ISO is not proposing to change the manner in which load forecasts are developed for LSEs, and envisions that existing methods and arrangements would continue to be used. The ISO prefers to receive hourly load forecasts.

4. *Maximum Import Capability* – The ISO has included a new aspect of the MIC proposal to adjust the MIC allocation methodology to align the method with the Regional TAC Options policy and more fairly distribute the potential MIC created by new Participating Transmission Owner ("PTO") areas. The ISO also proposes to revise the existing methodology used to calculate the MIC MW values to reflect the different peak time periods in which non-coincident peaking areas without commonly known constraints experience their own maximum simultaneous imports.

5. *Monitoring Locational RA Needs and Procurement Levels* – Previously the ISO had proposed zonal RA requirements in order to ensure reliable operation of the grid, and respect any potential internal transfer constraints by limiting the transfers of RA resources between internal areas to the extent necessary to maintain reliability. In this Second Revised Straw Proposal the ISO has determined that it would add complexity and burden for LSEs and to develop such a zonal construct requires additional analysis and experience in the operation of new BAA areas. The ISO has determined it is more appropriate to simply asses the locational RA needs of potential zonal areas in an expanded BAA and develop methods for monitoring zonal procurement levels to assess whether there is a need to revisit the zonal construct in the future.

6. *Allocating RA Requirements to LRAs/LSEs* – This aspect of the Regional RA proposal addresses two potential issues related to allocating RA requirements to potential new ISO participants. The first is the scenario of the need for allocating RA requirements to LSEs that may have a state or local regulatory agency that does not wish to assume the role of receiving RA requirements from the ISO and then allocating such requirements to its respective LSEs. The second scenario is where there is more than one LRA, state commission, or other jurisdictional entity overseeing and/or approving a multi-jurisdictional LSEs procurement decisions. To address these two potential scenarios, the ISO has described two options to deal with allocations to multi-state LSEs and create the ability for LRAs and state agencies to elect to defer allocation of RA requirements to the ISO so the ISO can directly allocate RA requirements LSEs rather than to the LRA.

7. *Reliability Assessment* – To ensure reliable operation of the BAA, each month the ISO will conduct a reliability assessment for the upcoming month using the information submitted by LSEs in RA showings and suppliers in supply plans. To perform its proposed reliability assessment, the ISO will develop a system-wide PRM target that would be established through a study conducted in parallel with an associated stakeholder process. The ISO proposes to develop a probabilistic study approach in determining this PRM target and describes the process that would be necessary to conduct this study in the future. The ISO will also develop consistent counting methodologies for the amount of MWs that each type of resource could qualify for, which would be used in the reliability assessment to assess how well the resources that are provided to the ISO meet reliability needs. The ISO describes the proposed counting methodologies in further detail in this proposal. The reliability assessment will look at the total amount of RA resources provided and assess whether the RA capacity collectively provided is sufficient to meet reliability needs. The reliability assessment will mitigate the potential for inappropriate "leaning" on the RA requirements by individual LSEs. The ISO believes that a PRM and consistent counting methodologies, together with the RA and IRP frameworks already in place within each state, are the minimum provisions needed for the ISO to conduct a reliability assessment in order to ensure that adequate resources are available throughout the multi-state ISO for reliable operation of the system.

2. Stakeholder Comments and Changes to Proposal

The ISO received 27 responses from stakeholders providing comments on the ISO's April 13, 2016 Revised Straw Proposal. The stakeholder comments and ISO responses area included in the Stakeholders Comments Matrix located in Appendix A of this proposal.

The ISO has provided additional detail and analysis on aspects of the proposal as well as made changes to the following aspects of the proposal: The ISO has added two new items to the scope of the proposal as noted above; (1) Resource Adequacy unit outage substitution rules for internal and external resources, and (2) Discussion of import resources that qualify for RA purposes. These two new proposal elements have been described in further detail below.

The ISO has also added a new aspect to the MIC proposal in order to adjust the MIC allocation methodology in addition to the previously proposed changes to the MIC calculation methodology. The proposed adjustment would align the allocation method with the current regional TAC policy direction.

The ISO previously had proposed to explore the creation of a zonal construct that would include zonal RA requirements. The ISO has determined this concept needs to be explored further and analyzed in additional detail before it would be appropriate to develop this aspect further. Due to the added complexity and burden on LSEs associated with zonal RA requirements, the ISO had decided to forego creation of a zonal construct and instead proposes to monitor the locational needs and procurement levels in the expanded ISO BAA and will revisit the concept if it becomes apparent that there is a need to do so at a later time once the ISO gains experience with additional areas of an expanded BAA.

3. Plan for Stakeholder Engagement

A schedule detailing the updates to the major milestones remaining for this initiative is provided below.

Table 1: Regional RA Schedule

Milestone	Date
Post second revised straw proposal	May 26
Hold stakeholder meeting to discuss second revised straw proposal (Portland, OR)	Jun 2
Stakeholder comments due on second revised straw proposal	Jun 15
Post draft final proposal	Jun 30
Hold stakeholder meeting to discuss draft final proposal (Folsom, CA)	Jul 12
Stakeholder comments due on draft final proposal	Jul 26
Present proposal to Board	Aug 31-Sep 1

The ISO understands that there are a number of concurrent and sequential initiatives concerning regional integration. Through stakeholder meetings, comments, and ISO management review, the ISO's intent is to be informed by all of the work in this area and build upon decisions as they are made by the Board of Governors. The ISO supports continued dialogue and welcomes the opportunity at any time to discuss with stakeholders how the various efforts work together. Please contact your ISO representative or submit a request for such as discussion at regionalintegration@caiso.com.

The ISO will provide updates to the schedule or other changes as they occur and stakeholders can view the updated timeline diagram on the regional integration website for further details at: http://www.caiso.com/informed/Pages/RegionalEnergyMarket/BenefitsofaRegionalEnergyMarket.aspx

4. Introduction

The Second Revised Straw Proposal includes discussion on two new scope items; (1) Resource Adequacy unit outage substitution rules for internal and external resources, and (2) Discussion of import resources that qualify for RA purposes. The proposal also provides additional details on the ISOs proposed changes to the following elements: (3) Load forecasting, (4) MIC, (5) Monitoring locational RA needs and procurement Levels, (6) Allocating RA Requirements to LRAs/LSEs, (6) Reliability assessment; including the PRM methodology and uniform counting methodologies.

RA is a critical feature that ensures that the ISO can effectively serve load and reliably operate the electric system. RA serves to ensure that the ISO has sufficient resources offered into its markets to

meet reliability needs and acts as an important market power mitigation measure to protect against physical withholding. The must-offer obligations of the RA program ensure that a sufficient pool of resources with the necessary attributes are available in the right locations and offered into the ISO market. Reliability is ensured through the RA forward planning and resource "showings" processes, which provide adequate resources to meet system, local and flexible operational needs. A multi-state ISO should provide lower procurement costs over time due to the synergies and geographic diversity obtained through a larger balancing authority footprint.

Process and Implementation Considerations for Regional RA

The ISO has received many stakeholder comments expressing concern about whether the tariff changes necessary to carry out this RA proposal would go into effect before any changes to the ISO membership and BAA footprint are made, as well as concerns about finalizing this RA proposal before regional governance has been established. The ISO has heard such concerns and will look to address those concerns by how it presents the proposal to FERC and its governing body for approval.

The timeline that the ISO has shared with stakeholders assumes an early 2019 integration date. This high-level timeline highlights several key dependencies, including PacifiCorp obtaining the necessary state regulatory authorizations in advance of participating in a regional ISO. PacifiCorp has made it clear that this process requires a high degree of regulatory certainty to be successful and would take approximately one year to complete. This, in turn, suggests that the ISO stakeholder processes necessary to support a regional ISO should be undertaken in 2016 to provide sufficient information for PacifiCorp to subsequently secure approval from its regulators to join an expanded BAA. The ISO understands the concerns of stakeholders with respect to the procedural considerations of any changes that may result from these initiatives and offers the assurances described below.

First, the ISO will look to file any tariff provisions associated with a regional ISO so that those provision would become effective only as necessary to support the integration of a new Participating Transmission Owner. This means that provisions with substantive impact would only become effective once the regional ISO includes PacifiCorp (or any new Participating Transmission Owner outside of the ISO's current BAA), while only procedural provisions would become effective prior to that date as necessary to support the integration. For example, LSEs in the ISO BAA need to submit RA plans in advance of the operational period, but PacifiCorp would not be an LSE in the ISO BAA until the integration date. Accordingly, the ISO may request earlier effective dates for tariff provisions governing submission of RA plans by new LSEs, as well as other similar procedural provisions that support the integration. As described in the first revised straw proposal, there are several options that would achieve the stated objective. Regardless of which procedural approach the ISO ultimately pursues, the ISO will tailor the filing and approval processes to ensure that regional ISO initiatives tariff amendments related to this stakeholder initiative will not have a substantive impact on current ISO market participants unless and until a new regional entity is integrated in accordance with the amended tariff rules.

Second, the ISO continues to evaluate its procedural options and, although it has not opted for a particular course of action, the ISO is leaning towards a two-step regulatory approval process for its regional stakeholder initiatives. This approach would include board approval of this RA policy followed by a filing at FERC seeking acceptance of the policy at conceptual level. This filing would include the justification required to support a FERC decision but would not include the associated tariff language. This process would need to be sufficiently certain to support PacifiCorp's state regulatory approvals. The

tariff language would be filed only after a new regional governing body is established in accordance with the governance process and that body has had an opportunity to review the conceptual policy. This approach may need to be adjusted depending on developments in the governance process. Nonetheless, the ISO believes it balances PacifiCorp's need for reasonable certainty and stakeholders desire to ensure regional support for this RA proposal.

In addition, the ISO notes that governance matters are currently being discussed in a separate forum and that those discussions have included the possibility of a role for a body of state regulators on RA matters. This is an important consideration given the possibility that a new regional governing body would review the conceptual policy prior to filing the tariff. The ISO views the role of a body of state regulators to be a matter of governance that is best considered in that forum. Stakeholders are encouraged to address the proper role of regulators body on RA matters in the regional governance forum.

5. Revised Straw Proposal

5.1 Resource Adequacy Unit Outage Substitution Rules for Internal and External Resources

This topic is a new topic that is being added to the scope of the Regional RA initiative for the first time within this second revised straw proposal.

An RA resource may need to go out from time to time on either a planned outage or a forced outage. A planned outage is an outage that has been requested at least seven days in advance of the day in which the outage will occur. A forced outage is an outage that occurs less than seven days in advance of the day in which the outage occurs. The ISO tariff currently requires that RA capacity from an internal system RA resource (internal non-local RA resource) that has experienced a forced outage requiring substitution be substituted with capacity from another internal RA resource. In other words, the ISO tariff does not allow RA capacity from an internal non-local RA resource that has experienced a forced outage requiring substitution to be substituted by capacity from an external RA resource. The tariff currently includes this requirement because an external RA resource could potentially not be required to meet the same must-offer obligation as an internal RA resource and the ISO would not be provided with a "like-for-like" resource if such substitution were allowed.[1]

Section 40.9.4.2.1 of the ISO tariff is provided below to show the current tariff language (with key text highlighted in bold). Details of the RA substitution rules are discussed in section 9.3.2 of the Reliability Requirements Business Practice Manual ("BPM").

[1] An RA "must-offer obligation" occurs when a resource is included on a RA showing and supply plan. The must-offer obligation is an obligation, depending on the type of RA requirement for which the capacity is being used to fulfill, for the Scheduling Coordinator for the capacity to bid or schedule that capacity into the ISO's markets, subject to any use-limitations. The ISO's must offer obligation bidding requirements are described under Section 7.1 of the ISO's Reliability Requirements BPM: https://bpmcm.caiso.com/BPM%20Document%20Library/Reliability%20Requirements/Reliability%20Requirements%20BPM%20Version%2029_clean.docx.

ISO Tariff Section 40.9.4.2.1:

> Local Capacity Area Resource Substitution.
>
> (1) Pre-Qualification. A Scheduling Coordinator for a Local Capacity Area Resource Adequacy Resource may pre-qualify alternate resources for substitution by submitting a prequalification request to the CAISO in accordance with the form and schedule specified in the Business Practice Manual. If the alternate resource is located at the same bus as the Local Capacity Area Resource Adequacy Resource for which it would substitute and has similar operational characteristics, the CAISO will approve the pre-qualification request for use of the substitute resource in the subsequent Resource Adequacy Compliance Year. To use a pre-qualified resource as RA Substitute Capacity, the Scheduling Coordinator for the Local Capacity Area Resource Adequacy Resource must submit a substitution request prior to or in real time, and the resource must meet the requirements in Section 40.9.4.2.1(b).
>
> (2) Non-Pre-Qualified Substitution. A Scheduling Coordinator for a Local Capacity Area Resource Adequacy Resource that has a Forced Outage or de-rate may prior to the close of the Day-Ahead Market for the next Trading Day, request to provide RA Substitute Capacity from a non-pre-qualified resource. The CAISO will grant the request if the alternate resource meets the requirements in Section 40.9.4.2.1(b) and (i) is located at the same bus as the Local Capacity Area Resource Adequacy Resource and meets the CAISO's operational needs, or (ii) if not located at the same bus, is located in the same Local Capacity Area, and meets the CAISO's effectiveness and operational needs, including size of resource, as determined by the CAISO in its reasonable discretion. Non-Local Capacity Area Resource Substitution. **A Scheduling Coordinator for a non- Local Capacity Area Resource Adequacy Resource that has a Forced Outage or de-rate that would count against its availability under Section 40.9.4.2, may, prior to the close of the Day-Ahead Market for the next Trading Day, request to provide RA Substitute Capacity from an alternate resource. A Scheduling Coordinator for an NRS-RA Resource that has a Forced Outage or de-rate that would count against its availability under Section 40.9.4.2, may, prior to the close of the Day-Ahead Market for the next Trading Day, request to provide RA Substitute Capacity from an alternate resource that is internal to the CAISO Balancing Area Authority (which does not include a Pseudo-Tie of a Generating Unit to the CAISO Balancing Authority Area) to be used in the place of the original resource. The CAISO will grant the request if the alternative resource (i) has adequate deliverable capacity to provide the RA Substitute Capacity, (ii) meets the requirements in Section 40.9.4.2.1(b), and (iii) meets the CAISO's effectiveness and operational needs, as determined by the CAISO in its reasonable discretion (bold font emphasis added).**

This RA substitution rule is not a significant issue for the current ISO footprint as there are generally plentiful amounts of internal resources that are available for substitution when an internal RA resource goes out on forced or planned outage. However, some market participants have inquired as to whether the ISO could consider revisions to this rule and have stated that this rule could cause barriers for regional expansion by limiting the pool of replacement resources for entities in an expanded BAA where these entities may operate systems that are non-contiguous and interconnected to multiple third-party transmission systems, or for that matter a supplier within such an area. These entities in an expanded

BAA may have difficulty finding additional available internal resources to substitute an internal RA resource experiences a forced or planned outage requiring substitution. It is also important to note that in these non-contiguous systems there are potentially many resources that will be pseudo-tied to the expanded regional ISO BAA, but these resources are considered by the ISO tariff to be external resources and require MIC.[2] This may be a potential barrier to qualify for RA purposes. These external resources could not substitute for internal resources that are experiencing a forced or planned outage requiring substitution during any given RA month.

Stakeholders have submitted written comments posing the question of why external resources (including pseudo-tied resources) would not qualify as a substitute for an internal RA resource under the RA program, and what reliability issues would arise from doing so. Stakeholders have asked that the ISO explain this ISO policy on substitution of internal versus with external resources and if there any reliability implications associated with using an external resource as a substitute for an internal resource. Stakeholders are concerned that these current substitution limitations may impose additional costs to meet RA obligations.

The ISO has considered the points raised by stakeholders as described above. The ISO proposes removing the current restriction in the ISO tariff wherein an internal RA resource that experiences a forced or planned outage requiring substitution can only substitute using an internal resource and cannot substitute using an external resource. The ISO proposes to allow an external resource to substitute for an internal resource that is on a forced or planned outage as long as the substitution meets the following conditions:

1. External resource has similar operating characteristics of the outage resource;
2. External resource/entity has sufficient MIC allocation to be used for substitution; and
3. External resource has the capability to fulfill the RA must-offer obligation of the outage resource (for example, if the internal RA resource has a 24x7 must-offer obligation, then the substitute resource allocation on the required Interties would be required to fulfill a 24x7 must-offer obligation).

The ISO believes that the RA substitution rules in this instance can be more flexible if an external resource being used for substitution is willing to fulfill the same must-offer obligations as the RA capacity that it is replacing. The ISO requests feedback from stakeholders on this suggested proposal, including the scope of resources and conditions under which an internal RA resource may be substituted with external RA resource.

5.2 Discussion of Import Resources that Qualify for Resource Adequacy Purposes

In Section 5.2 of the April 13, 2016 Revised Straw Proposal, as part of the discussion about the MIC topic, the ISO stated: “RA showings that designate import MWs to meet RA obligations across interties using either Non-Resource-Specific System Resources, Pseudo-ties or Dynamically Scheduled System

[2] Under the ISO tariff a pseudo-tied resource is considered an external resource.

Resources are to be used in conjunction with a MIC allocation and are considered to be a firm monthly commitment to deliver those MWs to the ISO at the specified interconnection point with the ISO system."[3]

Since the posting of the revised straw proposal, the ISO has given additional consideration to this aspect of RA to ensure that the requirements for RA imports are clear, which will be especially important as the BAA expands to include new entities. In addition, the ISO's DMM has submitted written comments on the revised straw proposal that requests that the ISO consider clarifying the requirements for RA imports, and PacifiCorp has stated in its written comments on the revised straw proposal that in in its integrated resource plan PacifiCorp considers the capacity contribution from short-term firm market purchases procured at market hubs outside of the BAA. The ISO has determined that it would be beneficial to clarify the requirements for RA imports, including how "firm" the commitment should be, and has added this section to the second revised straw proposal.

As background, LSEs can meet RA system capacity requirements using imported resources, and these imported resources do not have to be tied to a specific physical resource. For example, imported RA capacity from a Resource-Specific System Resource can be used to meet a system RA requirement, but a system RA requirement can also be met using a Non-Resource-Specific System Resource.[4] The oversight for the use of such non-resource-specific RA procurement to meet RA system capacity requirements is conducted by each LRA and is not visible to the ISO. The ISO tariff is not specific as to the types of imported resources that can count as RA capacity to meet a RA system capacity requirement. The ISO has noted that the integrated resource plans for utilities in other states, such as those in the PacifiCorp area, indicate that these entities rely on bilateral spot market purchases to meet a significant portion of their power needs.

Given that the ISO tariff is not specific regarding the types of import resources that may qualify for system RA purposes, the ISO believes that it is appropriate to add this topic to the scope of the Regional RA initiative and discuss with stakeholders the requirements and expectations related to the physical availability of imports used to meet RA system requirements. It is important to clarify this topic since imports used to meet RA obligations are required to bid in the day-ahead market, but are not subject to any limits on bid price and do not have any must-offer obligation in real-time if not accepted in the day-ahead market. Given the bidding rules and must-offer obligations, the ISO believes that it is important for all stakeholders and the ISO to have a common understanding of what may constitute a "firm monthly commitment" for the purposes of meeting RA system requirements. This will be increasingly important as the ISO expands regionally to include additional LSEs that currently rely on established integrated resource planning processes subject to regulation by other states. Clarification of this topic is also needed to provide a clarity for any monitoring by the ISO's DMM of the compliance of RA imports with market rules or expectations.

The ISO is not making a proposal at this time on this topic. Instead, the ISO would like to discuss this topic with stakeholders and understand their views on this topic. Once those views are known, the ISO

[3] Regional Resource Adequacy Revised Straw Proposal, April 13, 2016, p. 19: http://www.caiso.com/Documents/RevisedStrawProposal-RegionalResourceAdequacy.pdf.

[4] The system RA requirement is the key discussion point here, as local RA requirements cannot be met with imported resources. A local RA requirement must be met with resources that are physically located within the applicable local area, and imported resources cannot be used to meet a local RA requirement.

will formulate a proposal. For example, the ISO understands that the import system RA amounts shown on many RA system showings and supply plans represent firm capacity contracts. For example, the amounts shown on many RA system showings and supply plans represent power sales contracts for terms such as 5x16 or 5x8 (days of the week and hours per day). Given that the RA construct is a capacity construct, the question to consider is how "firm" must system RA import resources be? For example, is there a role for resources such as bilateral spot market purchases or short-term firm market purchases procured at market hubs outside of the BAA to meet a portion of an LSE's power needs? The ISO invites stakeholders to communicate their views on this topic.

5.3 Load Forecasting

Under this Regional RA initiative the ISO is proposing revisions to the process for developing load forecasts utilized for RA. The ISO is proposing to revise the current processes in order to receive and consolidate sources of load forecasting data to be able to discern system coincidence peak throughout an expanded footprint. The ISO will also use the system-wide forecast to determine each LSE's contribution to the coincident system peak forecast.

The ISO is attempting to balance the current processes for load forecasting to the extent possible. The ISO hopes to create a process under which the California Energy Commission ("CEC") would continue to determine the load forecasts for its jurisdictional LSEs in the existing ISO BAA, and entities outside of the current BAA would continue to develop their own load forecasts. The ISO would utilize the provided LSE load forecasting data to determine the overall system-wide peak, as well as each LSE's contribution to the coincident system peak, which the ISO will use to determine each LSE's respective share of the system's RA needs. To determine the system coincidence peak and identify each LSE-specific contribution, the ISO prefers to receive hourly load forecasts for each individual LSE.

The ISO also proposes to establish criteria that will trigger a review of individual LSE forecasts. The proposed criteria are described below. The ISO would have the ability to consider adjusting load forecasts or requesting LSEs submit revised load forecasts, if an LSE forecast diverges unreasonably from the LSE's weather normalized loads, but only in cases where the LSE cannot demonstrate that its forecast is reasonable. The details of this review proposal are explained below.

Load Forecasting Proposal

The ISO proposes that all LSEs provide the ISO with mid-term (one year forward) hourly load forecasts. These hourly forecasts will allow the ISO to conduct a load forecast aggregation methodology that will allow the ISO to determine the system-wide coincident peak as well as each LSE's contribution at the system peak for each LSE.

The proposal would eliminate the need to develop a specific coincidence factor methodology. The ISO will have all the required information in order to determine the amount that each LSE's forecast will contribute to the system-wide forecasted coincident peak. Under this approach it will be unnecessary to make any coincidence factor adjustments because the ISO will have all necessary information provided through the hourly load forecast submittals.

The ISO proposes that all LSE load forecast submittals should also include impacts from behind-the-meter or "load modifying" Demand Response ("DR"), Energy Efficiency ("EE"), and Distributed Generation ("DG"). The ISO believes that entities conducting load forecast in an expanded BAA should retain the flexibility to treat adjustments to their load forecasts how they choose and accept what methods best represents the needs of their situation. In other words, LSEs conducting load forecasts may determine the assumptions utilized for their own load forecasts and decide how to incorporate impacts from DR, EE, DG, and other load forecast modifiers. Although the ISO believes that it is appropriate to allow for this flexibility, the ISO also proposes that LSEs submit their load forecasting modifiers and adjustments to the ISO to promote transparency and facilitate the ISO's review of submitted load forecasts. The ISO proposes to develop a template and reporting system, or other mechanism, for the submittal of the load forecasting information that LSE submit to the ISO. Additionally, the ISO is proposing a load forecasting review process, detailed further below, that would safeguard against the potential for unreasonable forecasts to be accepted and deter manipulation of load forecasts.

The ISO notes that the CEC is currently working on the ability to provide hourly load forecasts[5] and the ISO believes this CEC process working towards hourly load forecasting demonstrates there is effort to develop these more granular hourly forecasts already taking place in California that also supports this proposal by the ISO for hourly load forecasts submittals as well.

Some stakeholders may have concerns with providing hourly load forecasts one year in advance. The ISO would request additional feedback from those stakeholders with concerns about the ability to provide accurate hourly load forecasts and what causes their concerns about this hourly load forecasting aspect of the load forecasting proposal. If there is inability for certain LSEs to provide hourly load forecast submittals the ISO could potentially revisit the need to only require monthly peak load forecasts which would also reopen the need for a coincidence factor adjustment methodology to apply to those monthly forecasts to capture the load diversity benefits. The ISO seeks stakeholder feedback on the ability to submit hourly load forecast data and if it appropriate to require that level of granularity for load forecasts.

The ISO also proposes to publish the results of load forecast accuracy after the fact; specifically identifying the Mean Absolute Percentage Error (MAPE) for all of the submitted load forecasts, comparing peak loads submitted with their forecast to their observed weather normalized peaks for transparency purposes. This will allow the ISO to benchmark the accuracy of submitted forecasts, meaning the ISO can compare how accurate the individual LSE forecasts are and stakeholders will also be able to observe the level of accuracy that LSEs are forecasting, and the ISO believes this would be appropriate since LSEs will have a good deal of flexibility under the ISO proposal and results should be reviewed and public (subject to confidentiality of any market sensitive information).

Load Forecasting Proposal Development Working Group:

[5] "As part of the *2016 IEPR Update*, the Energy Commission will work to forecast hourly loads as opposed to annual loads. For example, incorporating hourly load data into the forecast is needed to better understand the potential impacts of increases in behind-the-meter PV systems and electric vehicle charging on the magnitude and timing of peak demand (peak is shifting to later in the day)." http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-01/TN210527_20160224T115023_2015_Integrated_Energy_Policy_Report__Small_Size_File.pdf

The ISO believes that there are numerous technical considerations that should be explored with stakeholders in detailed discussions. The ISO plans to hold a load forecasting proposal development working group shortly after the June 2 stakeholder meeting. This working group will be held as a conference call and the ISO requests that interested stakeholders encourage their load forecasting teams to attend this discussion. A subsequent market notice announcing the details of this load forecasting working group will be provided.

The ISO will utilize this workshop to discuss the more technical details that are still under consideration with the stakeholder's load forecasting experts who may be able to have more in-depth conversations related to the more detailed aspects of this load forecasting proposal. The discussion should assist in the ISO development of this element of the Regional RA proposal.

Monthly Load Forecast Adjustments:

The ISO previously proposed to CEC and CPUC rules allow for LSEs and the CEC to submit monthly load forecast adjustments. Several stakeholders requested further clarity on the proposed ability to submit monthly load forecasting adjustments. The ISO believes that the only monthly load forecast adjustments should be based on quantifiable and demonstrated load migrations, i.e., changes in customer base due to direct access or the projected addition or removal of customers for other reasons. The ISO seeks feedback on this proposal to allow monthly load forecast adjustments for load migration only, and what type of guidelines or criteria could be used to define load migration adjustments.

LRA and State Commission Review of Jurisdictional LSE's Load Forecast Submittals:

Several stakeholders have raised concerns that the ISO's load forecasting proposal would take control away from LRAs and state commissions that oversee the load forecasting for their jurisdictional LSEs. The ISO reiterates that this proposal is not intended to remove any of the current ability to review and approve/acknowledge their jurisdictional LSEs load forecasts. In fact, the ISO encourages this review and appreciates the work conducted by those entities in assuring their LSE's load forecast submittals are accurate and reasonable.

The ISO proposal does not intend to somehow supersede the LRAs load forecasting, rather, the ISO believes that the robustness of the ISO system-wide load forecast aggregation would be bolstered by the continued involvement and review by LRAs/state commissions. The ISO also believes it is appropriate to create review criteria for the ISO's review ability in order to safeguard against potentially unreasonable load forecast submittals because those forecasts will be the basis for the system-wide forecast that establishes the system wide RA need and it is appropriate for the ISO to create criteria in order to potentially trigger the ISO's ability to review the submitted forecasts.

Forecast Review Process:

The ISO proposes to review LSE's submitted forecasts if specified criteria are met, triggering such a review. The proposed criteria detailed below would trigger the ISO to review a LSE's forecast and potentially enable the ISO to work with the LSE and LRA to understand the forecast issues and potentially request a revision to the submitted forecast that would ultimately be used to determine the ISO system forecast. The ISO only will use the review criteria as trigger to establish the ability to conduct a

review, this does not mean that the ISO would automatically make some sort of adjustment to the submitted forecasts, it would only initiate a review of the forecast that triggered the review criteria. The ISO will conduct a review process and have a discussion with the parties involved to discern the reasonableness of the forecast and allow the entities involved to explain and or revise their forecasts.

Importantly, the ISO would only request adjusted forecasts in cases where a LSE's forecast unexplainably diverges from average year-over-year weather normalized load trends when comparing the LSE's load forecast with the LSE's weather normalized load trend, and the LSE cannot demonstrate that its forecast is reasonable.

The ISO proposes to utilize the following criteria based on historic data as prompts to trigger ISO review and potential modification of submitted forecasts.

Load Forecasting Review Criteria

The ISO previously proposed to use a 4% divergence threshold in a LSE's average year-over-year change in the previous 3 years of weather normalized load data. The ISO believes this is appropriate criteria to trigger an ISO performance review of the submitted load forecast. The ISO will have the ability to evaluate forecasts using a trigger criteria based on historical normalized data. This review, when triggered, will help the ISO determine if there was an unexpected variation for the individual LSE forecasts. The ISO will not request adjustments to LSEs' forecasts if they can adequately explain the variances to expected forecast levels. However, the ISO would retain the right to review and request adjustments to any load forecast that triggers an unexplainable divergence from the specified historical data.

The ISO reiterates that the ISO is proposing that it would only request adjustment to the load forecast submittal after a subsequent discussion between the ISO and LSE and any state commission or LRA that is overseeing load forecasts submitted by the LSE in question, and only if the LSE cannot demonstrate the drivers of forecast variances.

5.4 Maximum Import Capability

5.4.1 Maximum Import Capability Background

The ISO assesses the deliverability of imports using the MIC calculation methodology. For most interties, the ISO calculates MIC megawatt amounts based on historical usage, looking at the maximum amount of simultaneous energy schedules into the ISO BAA, at the ISO coincident peak system load hours over the last two years. This historically-based MIC methodology establishes a baseline set of values for each intertie. Furthermore, the ISO performs a power flow study in the ISO's TPP to test that these values ensure each intertie's MIC can accommodate all state and federal policy goals; if any intertie is found deficient, the ISO establishes a forward looking MIC and plans the system to accommodate this level of MIC in the TPP and RA.

To establish the historically-based MIC values for each intertie, the ISO examines the prior two years of maximum historical import schedule data during high load periods. The ISO selects the sample hours by choosing two hours in each year, and on different days within the same year, with the highest total import

level when peak load was at least 90% of the annual system peak load. The ISO calculates the historically-based MIC values based on the scheduled net import values for each intertie, plus the unused Existing Transmission Contract ("ETC") rights and Transmission Ownership Rights ("TOR"), averaged over the four selected historical hours.

RA showings that designate import MWs to meet RA obligations across interties using either Non-Resource-Specific System Resources, Pseudo-ties or Dynamically Scheduled System Resources are to be used in conjunction with a MIC allocation and are considered to be a firm monthly commitment to deliver those MWs to the ISO at the specified interconnection point with the ISO system.

Allocation of Import Capability:

The ISO calculates MIC values for each intertie annually for a one-year term, and the ISO's 13-step Available Import Capability Assignment Process is used to allocate import capability to LSEs. MIC allocations are made available to LSEs on each intertie for their use in procuring RA capacity from external resources. MIC allocations are not assigned directly to external resources; rather, LSEs choose the portfolio of imported resources they wish to elect for utilizing their MIC allocations. The following table lists the 13-step Available Import Capability Assignment Process. This process is also described under Section 40.4.6.2.1 of the ISO Tariff.

Preserving existing rights and practices

As noted above, the ISO received numerous questions regarding the MIC calculation and assignment for individual LSEs and Market Participant's in written comments and during the stakeholder meeting on the ISO Straw Proposal. Numerous stakeholders have expressed concerns regarding the need to respect current arrangements and maintain viability of current practices and existing contractual obligations. Stakeholders are concerned that these existing practices and obligations may be negatively impacted if they joined the ISO BAA due to the ISO's current MIC calculation and assignment provisions.

The ISO understands there may be apprehension and a need to better understand how MIC provisions would affect potential new entrants, and the ISO wishes to ease these concerns. The ISO stresses that the current MIC allocation process is designed to protect pre-existing arrangements and contractual obligations by entities on particular interties.

The ISO will consider existing contractual rights (ETCs and TORs) and pre-existing commitments (Pre-RA Commitments) under the current MIC process to allow existing arrangements and practices to continue without negatively impacting potential new entrants. The ISO will account for those arrangements and practices that are established under firm transmission rights and contractual obligations in the current MIC process. The MIC process currently considers and protects for these ETCs, TORs, and Pre-RA commitments as described in Table 3 above.

It is also important to understand that the 13-step allocation process allows LSEs to select the interties on which they seek an allocation of import capability; it does not simply allocate import capability to all entities on all interties. The current process is more flexible than what some stakeholders have imagined and allows LSEs to tailor their portfolio and select the interties they desire an allocation of import capability to meet their particular needs.

5.4.2 MIC Proposal

In earlier iterations the ISO had previously indicated that it believed no changes to the allocation methodology are needed for regionalization and it was only necessary to slightly revise the methodology for calculating the MIC values in an expanded BAA to properly reflect the maximum amount of imports that can be reliably depended on for RA. After further review of the actual MIC allocations that would occur in an expanded footprint using the current methodology (based on load-ratio share of the entire capability system-wide) and considering the current Regional TAC policy discussion, the ISO has identified a need to revisit the MIC allocation methodology as well. This proposal on the MIC allocation methodology is described in greater detail below.

The slight MIC calculation methodology adjustment proposed previously is still a necessary aspect and remains part of the ISO's intended changes under this initiative. The proposed MIC calculation methodology change is still needed in order to reflect situations where a PTO that joins the ISO has a need to serve its peak load that occurs non-simultaneous with the rest of the system and when there are no simultaneous constraints between certain areas of an expanded ISO BAA. Using the current MIC methodology without the proposed adjustment would needlessly restrict downward the MW amount that can actually be reliably achieved for certain branch groups that are mainly used to serve the peak load in this new area that peaks at non-simultaneous times with the rest of the system. This proposal on the MIC calculation methodology is also described in greater detail below.

The ISO has received many stakeholder comments requesting data and specific results about what the MIC values would look like for Interties/branch groups in the PacifiCorp footprint if PacifiCorp becomes a PTO and the ISO BAA is expanded to encompass the PacifiCorp footprint. Stakeholders have indicated the need for this type of information on MIC values for potential Interties/branch groups in order to conduct net-benefit tests and risk assessments. The ISO understands these requests and wishes to be responsive to stakeholder needs.

The ISO is currently conducting the requested analysis to apply the current MIC methodology to the ISO and PacifiCorp combined BAA footprint. The ISO is still developing these results with the assistance of PacifiCorp. The ISO will share additional details and provide answers to related questions once the results of the analysis are available.

MIC Allocation Methodology Proposal:

In order to appropriately revise the MIC allocation methodology; the ISO proposes to limit the initial allocations of MIC capability to only those sub-regions of the ISO that are defined by the Regional TAC sub-regions on a load ratio share basis of only the LSEs serving load within those sub-regional TAC areas.

This new proposal to adjust the MIC allocation process to recognize the Regional TAC policy would mean that LSEs in the current BAA will still be receiving similar allocations of MIC capability that are made available by the current BAA interties today, and those same current BAA LSEs would only be able to nominate MIC on those interties into the current BAA (sub-regional TAC area), while LSEs serving load within the PacifiCorp footprint will receive all of the MIC capability that is provided by its current system's capability, with the ability for entities in that sub-region to nominate only on interties into that

PacifiCorp sub-region area. This split of the allocation proportions, nomination ability, and MIC calculation by sub-regions aligns the methodology with the Regional TAC policy proposal, which splits the TAC by sub-regions, and ensures that the current BAA maintains its current MIC and the PacifiCorp area would receive all the MIC that its system brings to an expanded BAA. The ISO believes that this is appropriate given the underlying cost causation and payment structure that is being envisioned under the Regional TAC policy.

In the future, if there are cost shared transmission projects that create additional MIC capability, the ISO would allocate that shared transmission capability proportionally to each sub-regional TAC area based on the relative shares of the costs of the project that was included in that sub-regional TAC areas rate. The ISO will be able to determine what share of the project is being paid for by each particular TAC sub-region and allocate the additional MIC capability accordingly.

The ISO's proposal to split these MIC allocations to each TAC sub-region limits the ability of LSEs will still allow for LSEs to utilize MIC in other sub-regions of the ISO through the bilateral trading of MIC process under Step 8 (Transfer of Import Capability) of the MIC allocation process. This will allow for LSEs to bring system RA resources into the footprint if they have transferred/purchased some MIC capability into different TAC sub-regions. The ISO also notes that under Step 13 (Requests for Balance of Year Unassigned Available Import Capability) of the MIC allocation process all of the remaining MIC capability that has yet to be assigned on all interties would be open for nomination by all LSEs in all areas of the entire expanded ISO BAA.

The ISO believes that this splitting of the initial allocations combined with the ability to bilaterally transfer MIC between the Regional TAC sub-regions, and the final Step 13 ability to nominate any remaining MIC anywhere in the footprint will balance the need to maintain fair initial MIC allocations to sub-regions and allow the flexibility needed in order to still allow all LSEs some flexibility to bring system RA imports to the system across all interties in an expanded BAA in order to realize the benefits of a larger geographic footprint.

MIC Calculation Methodology Proposal

The ISO believes that the current MIC calculation and allocation methodology are still appropriate in most respects. However, the ISO proposes one minor change to the MIC methodology that is necessary to perform MIC calculations using non-simultaneous base case studies. This slight methodological change is needed in order to capture the benefits of regional diversity and allows calculation of truly maximum reliable MIC values when there are no simultaneous constraints between certain areas of an expanded ISO BAA and the areas peak at non-simultaneous times. The ISOs proposal is intended to capture the truly maximum reliable MIC values where certain areas have different seasonal peaking characteristics, and there are no associated simultaneous constraints between those different areas of the system. This proposed change also allows for the ISO to capture the benefits of load diversity across a larger geographic footprint by measuring the MIC capability during the peaks of particular sub-regions.

Establishing a Pre-RA Commitments Date

Currently, the ISO utilizes the March 10, 2006 date as the cut-off for considering what arrangements count as Pre-RA Commitments for the current BAA in the Available Import Capability Assignment Process described above. The ISO recognizes that discussion must occur regarding a "cut-off date" for

considering what existing contractual obligations constitute Pre-RA Commitments under the Available Import Capability Assignment Process for potential new entrants in an expanded BAA. The ISO envisions that this cut-off date discussion should set the Pre-Ra Commitment cut-off date for all entities in a potential new PTO system that joins the ISO. This process should set the cut-off date at a particular date prior to the related RA process for the upcoming year in which a new PTO planned to join the ISO BAA. Stakeholders in the new PTO system, including jurisdictional agencies/LRAs that are involved with LSEs in those areas should be at the table for these discussions.

5.4.3 MIC Analysis – PacifiCorp Results

The ISO has received numerous stakeholder request for analysis of the potential MIC values for the PacifiCorp area and in response the ISO has been working with PacifiCorp to develop analysis in order to provide this information. MIC has been calculated at the projected coincident peak of ISO and PacifiCorp, as currently required by the ISO Tariff. This analysis was based on 2016 test year and 2015 import data provided by PacifiCorp and the calculated coincident peak forecast was developed with 2016 load forecasting information.

Additionally, for stakeholder reference, the latest ISO System MIC values can be found on the ISO reliability requirements page.[6]

The following table includes the MIC values that were calculated for this ISO-PacifiCorp MIC analysis.

Disclaimer: (1) TORs have NOT been used, (2) Pre-RA Import Commitments for other LSEs have not been used and (3) As noted above, a date specific for PacifiCorp integration must be established as related to Pre-RA Import Commitments and all contracts signed before that date will be grandfathered for all LSEs in the existing PacifiCorp footprint.

Table 2: PacifiCorp System Interties MIC values (2016 test year coincident ISO + PacifiCorp peak)

Scheduling Point(s)	Point of Receipt/Point of Delivery (POR/POD)	Net Import MW	Maximum Import Capability (MW)
FOURCORNE345	AZPS-FOURCORNE345	76	1222
ANTE	IPCO-ANTE	0	0
BORA	IPCO-BORA	-21	0
BRDY	IPCO-BRDY	-46	0
KPRT	IPCO-KPRT	475	660
MLCK	IPCO-MLCK	-44	0
JEFF	IPCO-JEFF	0	0
AVAT.NWMT	IPCO-AVAT.NWMT	-4	0
BPAT.NWMT	IPCO-BPAT.NWMT	-130	0
INEL	IPCO-INEL	0	0
FALLRIVER	IPCO-FALLRIVER	0	9

[6] http://www.caiso.com/Documents/ISOMaximumRAImportCapabilityfor2016.pdf

Scheduling Point(s)	Point of Receipt/Point of Delivery (POR/POD)	Net Import MW	Maximum Import Capability (MW)
GSHN	IPCO-GSHN	534	27
BGSY	IPCO-BGSY	0	0
MDWP	LDWP-MDWP	319	124
REDB	NEVP-REDB	42	213
GON.PAV	NEVP-GON.PAV	-38	50
PAVANT	NEVP-PAVANT	0	0
HTSP	NWMT-HTSP	0	86
MLCK	NWMT-MLCK	44	0
YTP	NWMT-YTP	33	4
JEFF	NWMT-JEFF	0	76
BPAT.NWMT	NWMT-BPAT.NWMT	130	5
AVAT.NWMT	NWMT-AVAT.NWMT	4	0
BRDY	NWMT-BRDY	125	0
ANTE	NWMT-ANTE	53	91
JBSN	PACW-JBSN	197	0
POP	PACW-POP	600	0
JBWT	PACW-JBWT	0	0
PACE	SRP-PACE	8	12
BOZ	WACM-BOZ	295	363
DJ	WACM-DJ	57	25
FGE	WACM-FGE	0	0
PACEW	WACM-PACEW	0	0
VNL	WACM-VNL	50	274
WYODAK	WACM-WYODAK	51	1
WYONORTH	WACM-WYONORTH	10	0
YTP	WACM-YTP	13	4
SWR	WACM-SWR	22	47
WSTAR	WACM-WSTAR	13	0
DEER_CREEK	WACM-DEER_CREEK	0	0
GLENCANYON2	WACM-GLENCANYON2	109	285
ANTELOPE	WACM-ANTELOPE	0	0
FON	WACM-FON	0	0
FGE69	WACM-FGE69	0	0
DRC	WACM-DRC	0	0
CALRIDGE	WACM-CALRIDGE	0	0
SHERIDAN	WACM-SHERIDAN	0	0
WYOCENTRAL	WACM-WYOCENTRAL	1	0

Scheduling Point(s)	Point of Receipt/Point of Delivery (POR/POD)	Net Import MW	Maximum Import Capability (MW)
DRYCREEK	AVAT-DryCreek	0	265
MIDC	AVAT-MIDC	33	265
WALLAWALLA	AVAT-WALLAWALLA	0	0
BPAT.PACW	BPAT-BPAT.PACW	1703	2341
GARRISON	BPAT-GARRISON	0	0
Malin230	BPAT-MALIN230	0	0
Malin500	BPAT-MALIN500	-78	296
MCNARY	BPAT-MCNARY	68	0
MIDCREMOTE	BPAT-MIDCREMOTE	409	220
MIDWAY230	BPAT-MIDWAY230	0	0
ALBANY12PAC	BPAT-ALBANY12PAC	7	6
PENDLETONPAC	BPAT-PENDLETONPAC	28	25
SALEMPAC	BPAT-SALEMPAC	53	50
SANTIAMPAC	BPAT-SANTIAMPAC	13	6
YAKIMAPAC	BPAT-YAKIMAPAC	39	56
COOSPAC	BPAT-COOSPAC	67	57
YAMSAYPAC	BPAT-YAMSAYPAC	0	0
RESTON230	BPAT-RESTON230	0	0
JOHNDAY	BPAT-JOHNDAY	-197	0
HERMISTONGEN	BPAT-HERMISTONGEN	0	0
DALREED	BPAT-DALREED	0	0
GOODNOEHILL1	BPAT-GOODNOEHILL1	0	0
JUNIPERWIND	BPAT-JUNIPERWIND	0	0
CARDWELL	BPAT-CARDWELL	0	0
CHEHALISPWR	BPAT-CHEHALISPWR	0	0
KFALLSGEN	BPAT-KFALLSGEN	0	0
WOODLANDTAP	BPAT-WOODLANDTAP	0	0
PONDEROSA500	BPAT-PONDEROSA500	0	0
PONDEROSA230	BPAT-PONDEROSA230	0	0
PILOTBUTTE230	BPAT-PILOTBUTTE230	0	35
MIDC	CHPD-MIDC	147	246
CASCADE	CISO-CASCADE	0	0
CRAG	CISO-CRAG	-67	0
MIDC	DOPD-MIDC	52	93
DS2	DOPD-DS2	0	0
MIDC	GCPD-MIDC	67	196
WAPR.PAC	GCPD-WAPR.PAC	0	0

Scheduling Point(s)	Point of Receipt/Point of Delivery (POR/POD)	Net Import MW	Maximum Import Capability (MW)
ENPR	IPCO-ENPR	-221	1
JBSN	IPCO-JBSN	-135	619
JBWT	IPCO-JBWT	-338	0
M500	IPCO-M500	0	0
HMWY	IPCO-HMWY	-61	0
COLSTRIP	NWMT-COLSTRIP	-23	0
GARRISON	NWMT-GARRISON	0	0
Townsend	NWMT-Townsend	-88	0
JBSN	PACE-JBSN as POD	112	0
POP	PACE-POP	-617	0
JBWT	PACE-JBWT	0	0
BETHEL	PGE-BETHEL	0	0
GRESHAM	PGE-GRESHAM	0	0
MIDC	PGE-MIDC	6	0
PACW.PGE	PGE-PACW.PGE	0	0
ROUNDBUTTE	PGE-ROUNDBUTTE	-7	122
TROUTDALE	PGE-TROUTDALE	0	0
MIDC	PSEI-MIDC	7	0
MIDCREMOTE	PSEI-MIDCREMOTE	0	0
Malin500	PSEI-MALIN500	0	0
MIDC	TPW-MIDC	0	0
Total		3957	**8477**

Please note: These results are subject to change once data is made available for (1) TORs, (2) Pre-RA Import Commitments for other LSEs, (3) A date specific for PacifiCorp integration must be established as related to Pre-RA Import Commitments and all contracts signed before that date will be grandfathered for all LSEs in the existing PacifiCorp footprint and (4) Correct data pooling from PacifiCorp OASIS.

The caveats included here have been mentioned in order to help stakeholders understand that these MIC values provided in the table above are only using PacifiCorp's data and the MIC values presented here may actually be lower than they would be with the inclusion of additional information from other LSEs in the PacifiCorp footprint, including their TORs and Pre-RA commitments, both would potentially increase the MIC values. As noted earlier, this data was not readily available to the ISO for this analysis but the ISO understands stakeholder want to see some information related to MIC and provides these values as a starting point to inform stakeholders about the approximate MIC that might be calculated for the PacifiCorp footprint. This information is for illustrative purposes only and these values are subject to change.

Additionally, the test year studied was for potential 2016 MIC values, which are based upon 2015 import data. The ISO also notes that these MIC values are subject to change based upon observed imports for the year prior to the calculation of any MIC values that would be allocated and enforced in a potentially expanded BAA. Put simply, these MIC values are subject to change pending updated data for any future years.

2016 Test Year Analysis - MIC allocations for PacifiCorp:

The PacifiCorp LSE's load share ratio at the coincident ISO and PacifiCorp peaks was calculated at 18.5%. Therefore the PacifiCorp's LSE MIC allocation under the current ISO tariff would be:

[8,779 (PacifiCorp MIC) + 15,755 (ISO MIC)] X 0.185 (PacifiCorp LSE load ratio share) = **4,539 MW** (PacifiCorp LSE MIC allocation)[7]

Of the 4,539 MW of MIC allocation PacifiCorp's "Pre-RA Import Commitments" are roughly 3,738 MW (1,580 MW in the East and 2,158 MW in the West). At a minimum, the PacifiCorp LSE MIC allocation would cover these Pre-RA Import Commitments.

MIC for all Pre-RA Import Commitments will have priority and be assigned on the branch group of request. The remaining unassigned MIC would be (4,539-3,738) = 801 MW. This remaining MIC allocation of 801 MW will not have branch group priority and the PacifiCorp LSE will have to nominate branch groups of their choice for allocation. These branch groups chosen for additional MIC nominations must have Remaining Import Capability after step 6 of the MIC allocation process, which means the branch groups must not be oversubscribed by existing ETC and Pre-RA Import Commitments of other LSEs. These potential MIC allocation values that would be created under the current ISO tariff demonstrates why the ISO is considering adjustment to the MIC allocation methodology as described above. The current allocation process would essentially create a transfer of a portion of the MIC capability created by the PacifiCorp system to LSEs in the current BAA, based on the current load ratio share allocation methodology.

5.5 Monitoring Locational Resource Adequacy Needs and Procurement Levels

5.5.1 Internal RA Transfer Capability Constraints Background

In order to respect any internal RA transfer constraints that may potentially limit the transfers of RA resources between major internal areas in the ISO BAA the California PUC currently enforces the Path 26 Counting Constraint methodology, which is a multi-step, iterative process to allocate Path 26 capability and prevent the over reliance by LSEs on the limited transfer capability across the Path 26 transmission path when meeting RA requirements.

[7] This value is only for the PacifiCorp LSE and do not include any data or information regarding the other LSEs embedded within the PacifiCorp system. The data for those LSEs was not used in this analysis because it was not readily available to the ISO.

The ISO previously proposed to establish the concept of additional internal RA transfer capability constraints, similar to the Path 26 Counting Constraint, to ensure that any constraints that may potentially limit the transfers of RA resources between major internal areas in an expanded BAA are properly respected in the ISO's related processes. The ISO also identified numerous problems with the proposal to simply extend the concept to an expanded BAA with the potential for additional counting constraints. In order to address these issues the ISO then proposed to examine a zonal RA concept to accomplish the same goal of identifying the major internal constraints and providing LSEs with procurement targets to meet the zonal needs that were identified.

The ISO undertook efforts to develop a proposed zonal RA concept in a manner that would work for all stakeholders, however the ISO has identified that the additional complexity and additional administrative burden for LSEs that would be associated with the previously proposed zonal RA concept is significant enough that it does not warrant the development of a full zonal RA process that would impose zonal RA requirements at this time. The ISO's latest proposal on this locational RA issue is explained in further detail below.

5.5.2 Previously Proposed Zonal Resource Adequacy Proposal

Instead of pursuing the previous proposals to simply extend the Path 26 method concepts to additional constraints in an expanded BAA, and alternatively to develop a full zonal RA process under which the ISO would establish RA zones, zonal import limits, and zonal RA requirements, the ISO believes it is more appropriate to monitor these internal RA transfer constraints as well as the overall locational RA needs across an expanded BAA through its current study processes and additionally develop internal monitoring for evaluation of the locational procurement of RA resources by LSEs in an expanded BAA.

The ISO has evaluated the need for a potential zonal RA process and requirements through the further development of this previously proposed zonal RA concept. The ISO has explored how this zonal RA proposal could be developed without putting onerous requirements or processes in place in addition to the current RA construct. The ISO also was hoping to develop a proposal that would meet the ISOs goals related to managing internal RA constraints and inform LSE procurement. Through this policy development process the ISO has concluded that the additional complexity, and administrative burden for LSEs, that would be associated with the previously proposed zonal RA concept is significant enough that it does not warrant the development of a full zonal RA process that would impose zonal RA requirements on LSEs at this time.

Rather than impose the previously contemplated zonal RA requirements, the ISO believes that it would be more appropriate to only monitor the locational resource adequacy needs across an expanded footprint as is the current practice in the existing ISO BAA today. The ISO also will continue to monitor any internal constraints in an expanded BAA under the current ISO study processes in place today. The ISO proposes to conduct internal monitoring and evaluation of the procurement by LSEs in an expanded BAA before any type of zonal RA procedures and requirements are considered in any stakeholder initiatives in the future.

An example of the type of information that is currently reviewed annually through the annual ISO Local Capacity Technical Report:

Table 3: Summary Zonal Needs[8]

Zone	Load Forecast (MW)	15% reserves (MW)	(-) Allocated imports (MW)	(-) Allocated Path 26 Flow (MW)	Total Zonal Resource Need (MW)
SP26	28401	4260	-7792	-3750	21119
NP26=NP15+ZP26	22199	3330	-4346	-2902	18281

The ISO proposes that it would continue to monitor zonal needs in any expanded BAA, as well as evaluate the level of procurement in locational areas in order to be able to determine if any sort of zonal RA concept should be revisited at a later date. The ISO welcomes stakeholder feedback on this element of the ISO proposal.

5.6 Allocating RA Requirements to LRAs/LSEs

5.6.1 Allocating RA Requirements to LRAs/LSEs Background

This aspect of the proposal addresses two potential issues related to allocating RA requirements to potential new ISO participants. The first is the scenarios of the need for allocating RA requirements to LSEs that may have a state or local regulatory agency that does not wish to assume the role of receiving RA requirements from the ISO and then allocating such requirements to its respective LSEs. The second scenario is where there is more than one LRA, State Commission, or other jurisdictional entity overseeing and/or approving a multi-jurisdictional LSE's procurement decisions. To address these two potential scenarios, the ISO has proposed to create a new mechanism for LRAs and state agencies to elect to defer allocation of RA requirements to the ISO so the ISO can allocate RA requirements directly to the LSEs under the deferring LRA's jurisdiction.

This element of the proposal is not intended to change how LSEs and LRAs in the current ISO BAA receive and/or allocate RA requirements, but instead is only intended to address any potential barriers or issues related to allowing the ISO to directly allocate RA requirements to LSEs to accommodate those utilities whose state commissions/LRAs prefer to leave the allocation of RA requirements to the ISO.

5.6.2 Allocating RA Requirements to LRAs/LSEs Proposal

The ISO has received stakeholder comments indicating a need for further clarity on this issue. The ISO provides the following additional details and clarity on this section of the initiative. There are two intended aspects of this issue as described in the background section above.

The first aspect of the proposal is to create a mechanism that would grant LRAs the choice to defer the allocation of RA requirements to the ISO, in which case the ISO will allocate the RA requirements directly to the LSEs falling under the jurisdiction of the deferring LRA. In other words, the ISO will provide the option for state commissions/LRAs to elect to have the ISO allocate all RA requirements directly to their

[8] 2016 Local Capacity Technical Report Apr 30, 2015: http://www.caiso.com/Documents/Final2016LocalCapacityTechnicalReportApr302015.pdf

jurisdictional LSEs, if they so desire. The ISO proposes this mechanism with the intent of providing additional convenience and accommodation to those state commissions/LRAs that would prefer to defer to the ISO's judgment in allocating RA requirements to individual LSEs.

The second aspect of this section of the proposal is to address the needs of multi-state/multi-jurisdictional LSEs and how they would receive their allocations of RA requirements. The ISO previously proposed allocating directly to multi-jurisdictional LSEs all system, local, and flexibility RA requirements to avoid any related allocation issues that could arise with splitting up LSE requirements based upon the various LRAs/jurisdictional entities that oversee the multi-jurisdictional LSE. The ISO made this proposal for direct allocation in the interests of creating a more streamlined and administrable RA program. Some stakeholders and LRAs, however, raised potential jurisdictional concerns with this approach. The ISO understands those concerns as related to local and state regulatory agencies losing some control over allocation of RA requirements to multi-jurisdictional LSEs.

In recognition of those concerns the ISO will consider a potential alternative under which it always would defer to each LRA/state commission, even for the RA requirements of multi-jurisdictional LSEs, and provide those regulatory agencies the same mechanism to elect either to: (a) receive the RA requirements for all of their jurisdictional LSEs and then allocate them; or (b) defer to the ISO to provide all LSEs under that LRA's jurisdiction with their respective allocations of RA requirements.

Thus, the ISO now solicits stakeholder feedback on one of two options to addressing the question of how to allocate the RA requirements of multi-jurisdictional LSEs.

> **Option 1**: ISO allocates all RA requirements directly to multi-jurisdictional LSEs.
>
> **Option 2**: ISO provides each LRA the opportunity to allocate RA requirements to every LSE under its jurisdiction, even if some of those LSEs are subject to the jurisdiction of multiple LRAs.

The ISO's preferred course remains Option 1 because it is the more straightforward approach to implement in order to be able to calculate and allocate the overall RA requirements for multi-jurisdictional LSEs. The ISO also believes Option 1 still would reserve important functions for the LRAs of a multi-jurisdictional LSE. Those LRAs would still be responsible for determining how any associated costs should be assigned to those particular jurisdictional areas and underlying customers from the procurement necessary to meet the RA allocation. The ISO allocation of LRA-specific RA requirements would not predetermine how those costs were recovered at the retail-rates level and those details would still be determined by the regulatory agencies overseeing those activities. The ISO notes that in other regions, such as MISO and PJM, those ISOs/RTOs directly allocate the RA requirements to all LSEs, which avoids these potential issues, and the multi-jurisdictional LSEs and their regulators work out how to allocate the associated costs amongst their customers. This approach is preferable in the ISO's perspective.

Option 2 would require creating LRA-specific allocations for system, local, and flexible RA requirements. This potential splitting of the calculated requirements by the underlying jurisdictional footprints of a multi-jurisdictional LSE would be complex and potentially would require changes to how those requirements are calculated today. Creating a LRA-specific allocation of system RA to a multi-jurisdictional LSE might be relatively straightforward, based upon a load ratio share of each of the underlying jurisdictional areas of the LSE. The calculation of Local and Flexible RA needs, however, would not be as simple. For

example, the flexible RA needs currently are based on an LSE's overall contribution to the flexibility needs identified by the ISO. Creating LRA-specific allocations would require the ISO to develop some new mechanisms in order to calculate the split needs amongst each area and would not be as simple as a load ratio share due to the locational aspect of the drivers of the flexibility requirements, i.e. tracking the location of the Variable Energy Resources that drive the need for flexibility. The ISO and its stakeholders would also need to determine a methodology for creating LRA-specific local RA allocations in cases where a local capacity area overlaps multiple jurisdictions. Determining what sub-areas of a multi-jurisdictional entity would be causing the need for flexible or local RA procurement also could call into question potential equity and fairness concerns, in addition to concerns of potentially limiting the benefits of allowing a multi-jurisdictional LSE to determine how best to meet its overall RA requirements and work out how to recover those costs amongst all of its LRAs/jurisdictional entities.

The ISO seeks stakeholder feedback on how to best approach this issue and requests stakeholder feedback on the tradeoffs and considerations highlighted above.

5.7 Updating ISO Tariff Language to be More Generic

This element of the ISO's Regional RA proposal addresses the need for the tariff provisions related to RA and the performance of RA resources to be more generic. The current tariff utilizes California-centric language that may not be applicable to entities in an expanded BAA. The ISO believes this is necessary to avoid any unintended barriers or consequences associated with the current tariff language as the ISO expands to more of a regional entity. The ISO believes that this element of the proposal is complete and will provide the details on specific changes to the tariff language to accomplish this proposal during the tariff stakeholder process. The ISO's tariff stakeholder process is conducted after the policy stakeholder process is complete but before the tariff language is filed with FERC.

5.8 Reliability Assessment

The ISO continues to believe that a reliability assessment is necessary to ensure that LSE and LRA procurement programs have accounted for adequate resources to be committed to the ISO markets to allow the ISO to reliably operate the system for an expanded BAA. The proposed reliability assessment will mitigate the potential for undue "leaning" on the system by individual entities. To perform this assessment, the ISO requires the following three elements.

1. PRM targets to evaluate total system-wide and zonal procurement levels;
2. Uniform counting methodologies for assessing the capacity value that each resource type can provide towards meeting the ISOs reliability needs; and
3. Revisions to the current backstop procurement authority and cost allocation tariff language that incorporate the reliability assessment.

The ISO's proposal for each of these components of the reliability assessment is discussed in greater detail below.

5.8.1 Planning Reserve Margin Background

As noted above, in order to conduct the ISO's proposed reliability assessment, the ISO has identified the need to establish a system-wide PRM target to evaluate reliability levels and ensure adequate capacity has been made available to the ISO markets. It is important for the ISO to determine a PRM target through a method that accurately measures the expected level of reliability of the system in order avoid risks to reliability and to mitigate the potential for certain entities to lean on the rest of the system.

The ISO previously provided background on two potential methodologies under consideration: (1) establish a probabilistic (stochastic) PRM translation through a Loss of Load Expectation (LOLE) study, or (2) calculate a simplified deterministic PRM using observed historical data points. The ISO has received feedback from stakeholders on these two options and determined a preferred option. The following section describes additional detail about the proposed PRM method and expected process that will be used to determine the PRM target for an expanded BAA.

5.8.2 Planning Reserve Margin Proposal

The ISO is proposing to develop the option of a probabilistic study to determine a system-wide PRM target because the ISO has determined that the probabilistic PRM methodology is a best practice that is used in many other regions and can provide a robust and accurate assessment of the necessary reserve margins required to maintain a specified level of reliability across an expanded BAA. The specified level of reliability can be measured using an established reliability criterion, such as 1-in-10 LOLE, which will also need to be discussed with stakeholders. The ISO notes that the major considerations in moving in the direction of developing a probabilistic PRM methodology is that probability concepts such as LOLE provide the ability to quantitatively incorporate uncertainty in the assessment of power systems, which cannot be done using deterministic methods. LOLE is a complex probabilistic criterion that can for the dynamic nature of a power system uses statistical methods to address future uncertainties in various system components and accounts for individual unit level variability of characteristics such as outage rates.

Probabilistic (Stochastic) Loss of Load Study Approach to Determine PRM Target:

As noted above, numerous other regions use a probabilistic PRM approach based on a loss of load study. These loss of load studies are usually conducted with powerful analytical software packages that utilize rigorous statistical analysis, such as Monte Carlo simulation. In this method, multiple uncertainties in the system are considered simultaneously, and the output is obtained after a high number of sampling iterations.

Some examples of these software packages used by other regions include PRISM (Probabilistic Reliability Index Study Model) which is the application used by PJM to calculate reliability indices to determine installed capacity reserve requirements. PJM's studies can be performed on a single area (PJM only) basis or on a two-area basis (PJM and adjacent regions). The determination of reserve requirements is done on a two-area basis to recognize the reliability value of interconnection with external regions. Another example can be taken by the MISO region, which utilizes a program developed by General Electric called Multi-Area Reliability Simulation (MARS) to calculate the LOLE for the applicable planning year. GE MARS uses a sequential Monte Carlo simulation to model a generation

system and assess the system's reliability based on any number of interconnected areas. GE MARS calculates the annual LOLE for the MISO system and each LRZ by stepping through the year chronologically and taking into account generation, load, load modifying and energy efficiency resources, equipment forced outages, planned and maintenance outages, Load Forecast Uncertainty, and external support.

The ISO proposes to utilize a similar type of analytical software package and would need to develop the models and cases that would be utilized to complete a similar type of loss of load study. The ISO previously included descriptions of the types of data and inputs that would be necessary to conduct a loss of load study in the revised straw proposal.[9] The ISO would conduct a study using similar inputs and techniques that can be developed with the input of stakeholders. The intended process the ISO proposes to develop a loss of load study is detailed below.

Loss of Load PRM Study Proposed Process:

The ISO provides the following details outlining a potential process for conducting this study in order to inform stakeholders about the expected timeframe and opportunities for input into this PRM process.

Firstly, the ISO will need determine what level of LOLE criterion is appropriate to use when studying the loss of load potential in order to establish the PRM target. In order to develop a PRM target using at probabilistic criterion such as LOLE the ISO must determine what level of LOLE should be met through the probabilistic PRM study. As noted previously many other regions use a 1-in-10 LOLE reliability criterion and this level of reliability is generally set forth by NERC regional entities reliability standards. In the west, WECC has not established any generation reliability criterion standard like many other NERC regional entities have. This step could be finalized through this stakeholder initiative, stakeholders should provide their views on what level of LOLE criterion is preferable, the ISO can provide some further information on this aspect in subsequent proposals.

The next steps of the PRM study process will likely need to take place after this proposal and stakeholder initiative has been finalized and would consist of the ISO procuring a vendor and software package, or consulting with an entity that is able to conduct a LOLE study with the appropriate software that is capable of performing complex probabilistic modeling, such as Monte Carlos simulation. The ISO will need to build the appropriate models and cases, and collect the required inputs and data sources that are necessary in order to conduct the study. This process may be extensive and time consuming, results of this type of study will not be available until all these steps are able to be completed.

Additionally, the ISO notes that any LOLE study of the current system and resource mix if a test year PRM target was conducted would potentially yield differing results from a study conducted at a later date that would utilize the most up to date input data, including the system topology, projected transmission projects, new resource additions, existing unit performance, availability and outage rates, etc. For these reasons, the ISO believes that this LOLE PRM study should occur at some point after the completion of the Regional RA stakeholder initiative but prior to the RA requirements being established for any new PTOs and LSEs joining the ISO BAA. The ISO certainly understands that entities seek certainty on

[9] Regional Resource Adequacy, Revised Straw Proposal at 33-34: http://www.caiso.com/Documents/RevisedStrawProposal-RegionalResourceAdequacy.pdf

issues like the PRM level, however it is not feasible to conduct this sort of study in a limited timeframe and the accuracy of the results depends on good inputs and model design. For these reasons the ISO stresses that this sort of probabilistic PRM approach will yield an appropriate PRM target to meet the specified reliability criterion but the study will not be completed during this stakeholder initiative.

The ISO understands the need for certainty but also believes that the benefits of the accuracy and analytical basis provided by this approach outweighs the complexity and process challenges that a probabilistic approach entail. The ISO would need to conduct an associated stakeholder process in order to establish the inputs, variables, cases, and model development, and such a process would ensure transparency and engagement with stakeholders at the time the study is being conducted. The ISO would also review the results and subsequent report on the study with its stakeholders as well.

The ISO needs to set the appropriate level of LOLE generation reliability criterion as noted above. In previous proposals the ISO has explained how many other regions utilize a 1 day-in-10 years or "1-in-10" LOLE criterion. This LOLE concept was described in the ISO's Revised Straw Proposal[10]. The ISO believes that the 1-in-10 LOLE is an appropriate level to set as the system-wide generation reliability criterion that will be utilized to establish the PRM target. The ISO encourages stakeholders to provide input in order to assist the ISO in determining the preferred level of LOLE reliability criterion that will be utilized in the PRM study process.

The ISO proposes that this LOLE study be conducted on a periodic basis not annually, and be refreshed with significant changes to the ISO system, such as a new PTO joining the ISO BAA. The ISO intends to set a PRM target that would be static with only periodic updates once established under the study process to encourage certainty in consideration of bilateral contracting and other related procurement decisions. Some stakeholders have suggested the ISO consider the appropriateness of monthly variations to the PRM level. The ISO believes that while the suggestion is worthy of exploration, the additional complexity added by needing to run studies on a monthly basis and uncertainty that could be associated with the variably monthly PRM concept as well as the only small incremental reliability improvement that may be associated with the concept leads the ISO to a conclusion that variable PRM targets set monthly would not be appropriate for the PRM proposal at this time.

5.8.3 Uniform Counting Methodologies Background

To conduct the ISO's proposed reliability assessment, the ISO has identified the need to establish uniform counting methodologies for assessing the capacity value that each resource type can provide towards meeting the ISOs reliability needs. Counting methodologies for all resources will allow the ISO to consistently determine the maximum capacity value that a resource can realistically deliver. The various resource type specific methodology below are what is currently used by the ISO.

- Pmax: The maximum power output a resource can reach as established by a Pmax test. The resource's scheduling coordinator requests the ISO to conduct this test.
- Exceedance Methodology: The minimum amount of generation produced by a resource in at least 70% of the studied hours at the time of system peak demand.

[10] Regional RA Revised Straw Proposal at 32, 33.

- Historical Data: The monthly historic performance during that same month during the Availability Assessment Hours[11], using a three-year rolling average. Resources with missing data due to outages occurring during the availability assessment hours will use average values for the same hours on the same calendar day but from other years.
- Technology Factors: For new resources that do not have historical data, the technology factors are used to calculate the QC. For each fuel type technology factors are currently calculated as follows:
    - Wind and solar – exceedance methodology evaluation of similar fuel type.
    - All other fuel types – historical data methodology evaluation of similar fuel type.

5.8.4 Uniform Counting Methodologies Proposal

The ISO proposes to develop uniform counting methodologies that would be applied for resource adequacy showings and the proposed reliability assessment. The counting methodology proposal would provide consistent and transparent methodologies for evaluating the amount that each resource type is able to effectively contribute towards meeting the ISO's reliability needs. The methodologies would be determined through a transparent and open stakeholder process, and the maximum qualifying capacity quantity that a resource owner could offer as RA capacity would be posted a year-ahead to allow LSEs sufficient time to procure RA capacity from resource owners for the following resource adequacy compliance year. Updates to the methodology, which may be needed over time to reflect best practices, would be effectuated through an open and transparent stakeholder process. An example of a methodology that might be used in the future is the effective load carrying capability methodology that is currently under discussion in several forums. The ISO is not proposing to eliminate the ability of LRAs to develop their own resource counting methodologies for developing their RA and procurement programs. However, establishing consistent counting rules that the ISO would use for ISO resource adequacy showings and the reliability assessment will mitigate concerns about over-counting resources by an entity, which can result in leaning on other entities.

Counting methodologies

The ISO's proposed Reliability Assessment and RA showings will require the use of consistent methods for assessing the capacity value that each resource type can provide towards meeting the ISO's reliability needs. The following sections describe the ISO's proposed uniform counting methodologies and the associated resource/fuel types.

A) Pmax

The Pmax methodology is an evaluation of a resource's maximum output which is verified by the ISO. The ISO proposes to apply the Pmax methodology for the following resource/fuel types.

1. Thermal: Nuclear, natural gas, oil, coal, geothermal, biomass, and biogas.
2. Participating hydro
3. Pumped hydro

[11] CAISO tariff section 40.9.3.

B) Exceedance Methodology

The ISO proposes to initially proceed with the exceedance methodology for the QC calculation of solar and wind resources. The ISO understands that various stakeholders have expressed their support as well as highlighted California's legislation for the CPUC to use the ELCC methodology for its resource adequacy requirements.[12] The ISO will continue to look into ELCC and is proposing to initiate a future stakeholder process to determine a transition into a possible ELCC methodology as well as reevaluate any other methodologies to incorporate other best practices as needed.

The exceedance methodology measures the minimum amount of generation produced by a resource during a certain percentage of included hours. The resource is measured based on the output level it can produce in at least a certain percentage (%) of the studied hours. The hours included for study vary seasonally and are based on the time of system peak demand. Though the ISO is aware of the potential disadvantages of exceedance, as described in previous proposals, the ISO is most familiar with the exceedance method and intends to explore a transition into an alternative methodology such as the ELCC at a later date. This transition will give stakeholders and the ISO the benefit of preparing and designing a better product through the various forums including a future stakeholder process.

Exceedance Methodology Calculation

The following section will describe the process of the exceedance methodology in determining a resource's QC value.

1. ***Initial data pull***

   Extract resource's MWh Settlement Quality Meter Data (SQMD) for the past 36 months.

2. ***Isolation of "included hours"***

   Isolate the SQMD by the "included hours" for the past 36 months. The "included hours" are the following:

   - Jan-Mar, Nov & Dec: 4-9 PM
   - Apr-Oct: 2-6 PM

3. ***Initial exceedance QC calculation***
   a. Stack the MWhs in the "included hours" from highest to lowest for each of the past 36 months.
   b. Identify the MWh in the 70th percentile of the "included hours" for each of the past 36 months.
      i. In the case that the precise 70th percentile is between two values, the average, weighted by proximity to the 70th percentile of the two values is used.

4. ***Diversity benefit calculation***
   a. Calculate exceedance for the system wide solar and wind resources. Sum the total production values for all solar and wind resources per hour for each month and stack the

[12] ftp://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0001-0050/sbx1_2_bill_20110412_chaptered.pdf

values and calculate the 70% exceedance. (The value of the system wide exceedance will always be greater than the value of an individual QC value.

$$SystemDiversityBenefit =$$

$$70\%\,Exceedance\left[\sum_{Units} Hourly\,\mathrm{Pr}oduction\right] - \sum_{Units} InitialQC$$

b. Sum the individual resource initial exceedance QC values. For example, the sum of all individual wind initial exceedance QC values (calculation in step 3 above).
c. Subtract the exceedance of the total of the system wide solar and wind resources to the total of individual resource QC values.
d. Each resource will be allocated a proportion of the diversity benefit that was calculated from step c above. The allocation of the diversity benefit will be calculated as follows:
    i. The MWh produced during the "included hours" by the individual resource divided by the MWh produced by the fleet. For example, if the individual resource is a wind resource, the wind resource's total MWh production during the "included hours" will be divided by the entire wind fleets MWh production during the "included hours."

$$\mathrm{Re}\,sourceDiversityShare_{Pass} = \sum_{Hours} \mathrm{Pr}oduction \Big/ \sum_{Hours}\left(\sum_{\mathrm{Re}\,sourcesIncludedInPass} \mathrm{Pr}oduction\right)$$

    ii. Each resource's specific percentage of the benefit will be multiplied to the diversity benefit and then added unto its initial exceedance QC value.

$$\mathrm{Re}\,sourceDiversityBenefit_{Pass} = SystemDiversityBenefit_{Pass} * \mathrm{Re}\,sourceDiversityShare_{Pass}$$

e. The ISO will verify that the final exceedance QC value will not exceed the highest MWh value in each month.

5. ***Final exceedance QC value***
    a. The sum of the initial exceedance QC and diversity benefit will be averaged over three years on a rolling basis.

Example Calculation of Exceedance Counting Methodology

The figures below show an example of the exceedance methodology. Table 4 includes a snapshot of a hypothetical resource's SQMD in MWh for the "included hours" of 4 PM-9PM (months of Jan-Mar, Nov & Dec). The exceedance value is evaluated on an entire month of the "included hours" data. After the data is extracted and isolated to its "included hours," the value of the 70th percentile is identified as shown in figure 1 below.

1. **Initial Data Pull**
   The ISO will compile the hourly data of Resource Solar A for the past 36 months.
2. **Isolation of "included hours"**

The ISO will extract Resource Solar A's hourly production data for the "included hours" for each month for the past three years. Table 4 shows the hourly data for Resource Solar A for May (2:00-6:00 PM).

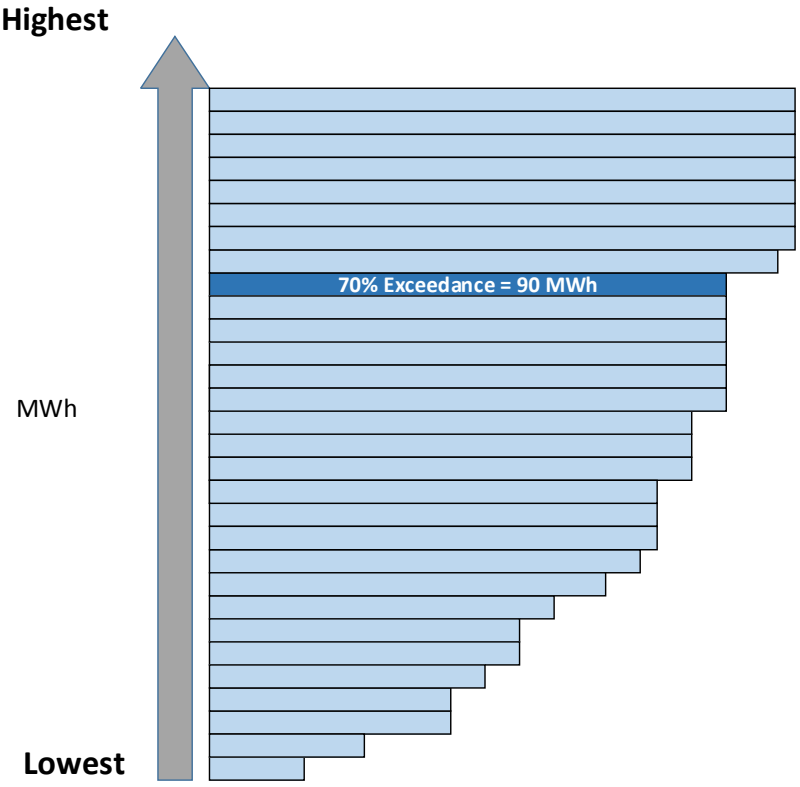
Table 4: Exceedance Method Example Data: Resource Solar A - MWh production for month of May

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
2:00 PM	100	100	75	25	100	55	15	100	25	40
3:00 PM	75	100	95	75	90	65	25	80	50	50
4:00 PM	100	90	80	80	90	70	25	90	50	50
5:00 PM	80	80	80	50	75	75	25	80	50	60
6:00 PM	95	75	60	40	50	80	20	65	25	70
	Day 11	**Day 12**	**Day 13**	**Day 14**	**Day 15**	**Day 16**	**Day 17**	**Day 18**	**Day 19**	**Day 20**
2:00 PM	50	90	76	98	90	90	45	50	75	80
3:00 PM	53	100	82	99	95	97	75	95	75	90
4:00 PM	63	75	90	100	100	100	90	95	80	98
5:00 PM	90	75	80	80	78	80	90	95	75	80
6:00 PM	68	80	95	78	70	80	90	80	62	60
	Day 21	**Day 22**	**Day 23**	**Day 24**	**Day 25**	**Day 26**	**Day 27**	**Day 28**	**Day 29**	**Day 30**
2:00 PM	90	75	90	80	85	90	90	20	15	90
3:00 PM	100	95	95	80	15	95	95	25	25	95
4:00 PM	75	100	100	80	15	100	100	50	50	100
5:00 PM	80	55	60	80	75	60	50	60	50	70
6:00 PM	60	40	45	80	80	60	45	65	50	56

3. Initial exceedance QC calculation

Resource Solar A's hourly production data will be stacked from highest to lowest to determine the 70% exceedance value. Figure 1 shows Resource Solar A's stacked production data in the month of May as well as the exceedance value of 90 MWh.

Figure 1: Solar Resource A - 70% exceedance method visualization



4. **Diversity benefit calculation**
    a. System wide solar and wind production used for this exceedance method example = 2,000 MWh
    b. Solar Resource A: Initial Exceedance QC (90 MWh) + Solar Resource B: Initial Exceedance QC + Solar Resource C: Initial Exceedance QC… + Wind Resource A: Initial Exceedance QC + Wind Resource B: Initial Exceedance QC… = Sum of initial Exceedance QC's (1,200 MWh)
    c. Diversity benefit share: 2,000 MWh – 12,000 MWh = 800 MWh
    d. Diversity benefit for Solar Resource A
        i. Solar Resource A's MWh produced during assessment hours (2PM-6PM) in May = 10,818 MWh
        Solar Fleet MWh produced during assessment hours (2PM-6PM) in May = 1,152,533 MWh
        Solar Resource A's diversity benefit share: 10,818 MWh / 1,152,533 MWh = .0094%
        ii. 800 MWh * .0094 = 7.52 MWh diversity benefit share for Solar Resource A
        Solar Resource A's initial QC plus diversity benefit share:
        90 MWh + 7.52 MWh = 97.52 MWh

5. Solar Resource A's highest MWh value = 100 MWh
97.52 MWh < 100 MWh

6. **Final QC value**

Solar Resource A's QC value including its diversity benefit is averaged over the past 3 years for the month of May = 94 MWh

C) Historical Methodology

The historical methodology is a resource's monthly historic performance during that same month during the Availability Assessment Hours[13], using a three-year rolling average. Resources with missing data due to outages occurring during the availability assessment hours will use average values for the same hours on the same calendar day but from other years. The ISO proposes to use the historical methodology for the following resource/fuel types:

1. Run-of-the-river hydro
2. Qualifying facilities including Combined Heat and Power

D) Four Hour Test

The ISO proposes to evaluate the capacity value of a non-generator resource (NGR) by testing the resource's sustained output over a four-hour period.[14] Additionally, an NGR's NQC shall not exceed the resource's maximum instantaneous discharge capability. Similar to a Pmax test for thermal resources, an SC would submit a request to the ISO to conduct a four hour Pmax test. The test would require an NGR to provide four hours of continuous output to determine its maximum discharge capability in order to establish the NGR's QC value. The ISO understands that conventional generators are only held to a one hour Pmax test but NGRs are limited in its ability to provide a sustained output due to the need to recharge their fuel source. This is the reason that the ISO has determined the four hour test is the preferable option for NGRs.

E) Registered Capacity Value

The ISO proposes to use the registered capacity value methodology for PDR, RDRR, and participating load resources. The methodology will require scheduling coordinators to submit to the ISO the capacity value, based on a sustained output for four hours, in which the ISO will accept and establish as the resource's capacity value. The ISO may conduct performance audits and unannounced compliance testing on PDR, RDRR, and Participating Load resources to verify the deliverability of the resource's registered capacity value.

Performance Audit and Unannounced Compliance Testing

The ISO proposes to conduct performance audits and compliance testing for all resources with a registered capacity value for QC. A performance audit is a review of RA resources that have been given energy dispatches during the past week when an audit occurs. An unannounced compliance test is when ISO operations gives an RA resource an out of market dispatch to verify if the resource can meet its registered capacity value. The ISO will conduct performance audits and unannounced compliance tests on PDR, RDRR, and participating load resources throughout the year. Participating load resources will be

[13] CAISO tariff section 40.9.3.

[14] http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6553

tested through the Resource Performance Verification process for resources providing ancillary services.[15]

The ISO will conduct either a performance audit or unannounced compliance test on a RA resource with a registered capacity value. After the audit or the test, either of the following two scenarios will occur:

1. If the resource fails the audit/test: The ISO proposes to send a warning notification to the SC, its respective LRA, and FERC. The resource will be flagged for six calendar months from the audit/test date in which if the resource fails another audit or a compliance test, the resource's registered capacity value will be lowered for the following RA year. In addition, during the remainder of the year until the lower registered capacity value is in effect, the supplier will need to provide replacement capacity for the difference between its previously stated registered capacity value and its lowered registered capacity value.
2. If the resource passes the audit/test: No actions will be taken by the ISO.

Summary of counting methodologies

The table below summarizes the proposed counting methodologies.

Table 5: Summary of counting methodologies

Resource type	Counting Method
Thermal	Pmax
Nuclear	Pmax
Solar & Wind	Exceedance
Hydro	Pmax and Historical
Storage	Four hour test
PDR/RDRR	Registered capacity value
Participating Load	Registered capacity value
QF and CHP	Historical

Establishing the Net Qualifying Capacity value

The ISO currently receives each resource's Qualifying Capacity (QC) from a scheduling coordinator and uses the submitted QC value to establish a Net Qualifying Capacity (NQC) value for each resource annually with the ability to revisit NQC on a monthly basis. The ISO will use the uniform methods described above to establish the initial capacity value of each resource and then determine the resource's final NQC through the following three criteria.

1) **Testing**
   The ISO will evaluate that the resource's QC value will not surpass the maximum power plant output or Pmax as approved in their Interconnection Agreement.
2) **Performance Criteria**
   Currently under development but not in scope of this initiative.

[15] http://www.caiso.com/Documents/5370.pdf

3) Deliverability to Aggregate of Load

The deliverability of Generation to the aggregate of Load measures the capability of the transmission system given the dispatch of other proximate Generation resources to deliver power output from a particular Generator to Load in the ISO Control Area during peak Demand conditions. A resource whose output is not fully deliverable will have the capacity that it may offer for resource adequacy purposes reduced.

For a detailed description of the current NQC process, please refer to the Reliability Requirements BPM.[16]

The ISO believes that it will simplify the counting of resources and establishing of individual NQC's for resources by developing a process that will only utilize the ISO's proposed uniform counting methodologies in establishing a resource's capacity value. This will allow the ISO to inform the procurement process through the posting of the ISO determined NQCs. The ISO will also utilize the established NQCs in order to evaluate the overall procurement of resources under the proposed reliability assessment.

NQC List Examples Counting Methods:

NQC values for the same type of resource can vary based on location as well as the methodology used. The examples in the below are the NQC values for thermal, nuclear, solar, wind, hydro and QF resources. These examples are included for illustrative purposes, in order to help stakeholders understand the variability of certain resource types and provide some context of how the NQC values for resource using some of the ISO's various proposed counting methods look in use today. The table provides the resource's fuel type, location (northern or southern California), Pmax, methodology that was used to establish its QC, and the monthly NQC value. The ISO publishes the final NQC report on an annual basis.[17]

Table 6: Examples of final NQC values

Fuel Type	Location	Pmax	Methodology	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Thermal	South	47.00	Pmax	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00	47.00
Nuclear	North	1150.00	Pmax	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00	1130.00
Solar	North	550.00	Exceedance	1.31	7.07	33.00	374.63	385.41	400.38	379.24	394.15	363.79	295.28	0.90	0.66
Solar	South	310.00	Exceedance	0.76	3.90	19.30	217.32	217.32	222.36	203.35	205.23	208.48	169.17	0.42	0.32
Solar Thermal	South	133.00	Exceedance	1.04	8.81	20.11	80.38	85.29	106.44	106.92	99.56	97.16	64.23	3.31	1.77
Wind	North	100.00	Exceedance	2.26	8.32	16.55	16.13	32.24	27.81	32.77	29.14	16.27	5.86	2.19	4.03
Wind	South	265.00	Exceedance	7.79	31.60	47.71	41.42	68.81	69.78	35.64	24.42	20.84	14.43	7.66	7.84
Pumped Hydro	North	407.00	Pmax	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00	407.00
Hydro	South	820.00	Historical	773.60	773.60	773.60	773.60	800.60	800.60	800.60	800.60	773.60	773.60	773.60	773.60
QF	South	178.00	Historical	17.26	50.81	64.81	73.20	104.38	61.77	30.01	33.45	27.93	24.41	10.52	23.33

5.8.5 Backstop Procurement Authority

Resource Adequacy ("RA") in the ISO's balancing authority area is based on bilateral procurement overseen by LRAs. Under this framework, LSEs procure capacity through bilateral contracts to meet their RA requirements for system, local, and flexible capacity. The ISO is permitted to engage in backstop

[16] Business Practice Manual for Reliability Requirements - https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability%20Requirements

[17] https://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx

procurement pursuant to its Capacity Procurement Mechanism ("CPM") only in a limited number of defined circumstances to maintain reliability. Importantly, backstop procurement is not automatic or mandatory under the CAISO tariff. Rather, the CAISO has discretion whether to procure backstop capacity if there is a capacity deficiency or potential reliability event. For further information regarding the CPM mechanism going forward, stakeholders should refer to section 43A of the ISO tariff.[18] The ISO notes that in the near future the ISO will begin procuring CPM capacity pursuant to a competitive solicitation process. That will allow the ISO to procure the lowest cost resource(s) to meet identified reliability needs that require backstop procurement.[19]

5.8.6 Modifications to Backstop Procurement Authority and Capacity Procurement Mechanism Proposal

As noted in the ISOs previous revised straw proposal, the ISO proposes to conduct a reliability assessment (see section above regarding the reliability assessment). If the ISO determines that there is a shortage of capacity based on the reliability assessment, the ISO proposes to follow the standard practice of notifying stakeholders of the shortage, providing load serving entities an opportunity to cure the shortage, and if load serving entities do not cure the shortage then the ISO may engage in backstop procurement to cure the shortage. Importantly, the ISO will continue providing the same level of transparency and protections against over-procurement that exist under today's backstop procurement framework. The current ISO tariff language does not expressly acknowledge the ISO performing a reliability assessment; therefore, the ISO will need to revise the tariff to recognize that a reliability assessment may identify a shortage that the ISO needs to cure and authorize the ISO to procure backstop capacity as a last resort to cure the shortage.

Specifically, the ISO proposes to revise Section 43A of the ISO tariff for the following four categories of CPM designation to recognize a potential shortage that could result from the reliability assessment: (1) insufficient RA resources in a LSE's annual or monthly RA plan; (2) deficiency in local capacity area resources in a LSE's annual or monthly RA plan; (3) collective deficiency in a local capacity area after accounting for all procured RA resources; and (4) cumulative deficiency in the total flexible RA capacity in the annual or monthly flexible RA capacity plans or in a flexible capacity category in the monthly RA plans of LSEs. These four categories of CPM designation are affected because applying the ISO PRM or resource counting rules that are used in the reliability assessment may result in a shortage of one of these four types of RA capacity, *i.e.*, system, local or flexible RA capacity. Only the category of CPM designation would be affected. Other CPM tariff language regarding reporting requirements, transparency, opportunities to cure, duration of designation, etc. would not change.

The ISO does not propose any changes to the tariff language related to the following three categories of CPM designation: (5) a "Significant Event" occurs that threatens reliability and there are insufficient RA resources available to address the problem; (6) reliability or operational need requires the ISO to "Exceptionally Dispatch" non-RA capacity; and (7) capacity that is at risk of retiring in the current RA compliance year and will be needed for reliability by the end of the calendar year following the current RA

[18] The CAISO's CPM filing and tariff language approved by FERC is available at: http://www.caiso.com/Documents/May26_2015_TariffAmendment_CapacityProcurementMechanism_Revisions_ER15-1783.pdf

[19] This revised straw proposal does not discuss the mechanics of the competitive solicitation process. Stakeholders seeking additional information regarding that process should refer to section 43A of the ISO tariff.

compliance year. These three categories of CPM designation are unaffected by the addition to the tariff of a reliability assessment.

6. Next Steps

The ISO will discuss this revised straw proposal with stakeholders during a meeting on June 2, 2016 in Portland, OR. Stakeholders are asked to submit written comments by June 15, 2016 to initiativecomments@caiso.com. Please use the template available on the ISO website at the following link to submit your comments:
http://www.caiso.com/informed/Pages/StakeholderProcesses/RegionalResourceAdequacy.aspx

Appendix A – Stakeholder Comments and ISO Responses Matrix

This appendix contains written stakeholder comments that were received on May 4, 2016 on the Regional Resource Adequacy ("RA") Revised Straw Proposal that was posted on April 13, 2016, and on which was the subject of a stakeholder meeting on April 21, 2016.
The table below lists the acronyms used for the names of the stakeholders that submitted written comments.

Acronym	Name of Stakeholder
AWEA	American Wind Energy Association
BPA	Bonneville Power Administration
CDWR	California Department of Water Resources
CLECA	California Large Energy Consumers Association
CMUA	California Municipal Utilities Association
CPN	Calpine Corp.
CPUC	California Public Utilities Commission
ICNU	Industrial Customers of Northwest Utilities
LSA	Large-Scale Solar Association
MCE	Marin Clean Energy
NCPA	Northern California Power Agency
NIPPC	Northwest & Intermountain Power Producers Coalition
NRDC	Natural Resources Defense Council
ORA	Office of Ratepayer Advocates
PAC	PacifiCorp
PG&E	Pacific Gas & Electric
PPC	Public Power Council
SCL	Seattle City Light
SCE	Southern California Edison
SDG&E	San Diego Gas & Electric
SVP	Silicon Valley Power
SWPG	SouthWestern Power Group
UAMPS	Utah Associated Municipal Power Systems
UTC	Washington Utilities & Transportation Commission
VEA	Valley Electric Association, Inc.
WGG	Western Grid Group
WPTF	Western Power Trading Forum
WRA	Western Resource Advocates
XES	Xcel Energy Services

The matrix below provides the written stakeholder comments, as well as California ISO ("ISO") responses to those comments.

Topic	Stakeholder	Question/Comment	ISO Response
1 **Load Forecasting**	BPA	How would the ISO adjust the PRM used in the Reliability Assessment if an LSE wants to use a methodology more stringent than a 1 in 2 forecast? When CAISO establishes suggested criteria for load forecasting, it is important to recognize that one forecasting methodology does not fit all. BPA supports the ability of an LSE to create its own load forecast. However BPA does not see anything wrong with the CAISO establishing a set of suggested criteria for load forecasting, as long as the criterion isn't binding. BPA supports the ability to update load forecasts on a monthly basis.	The ISO will conduct its proposed reliability assessment based on the PRM level that has been established through the proposed methodology and subsequent study. The ISO is proposing to require 1 in 2 load forecasts submitted by individual LSEs and there should not be more stringent or extreme load forecasts submitted because the ISO is attempting to capture the average weather and load patterns for the system wide load forecast. Individual LSEs and their LRAs could choose to set procurement targets above the ISO PRM target if they prefer to do so, the ISO would not be involved in that decision.
	ICNU	In the most recent RA stakeholder meeting, there was some discussion to the effect that, under the Federal Power Act, local regulatory authorities ("LRAs") will maintain authority over LSE resource adequacy determinations. Regardless, ICNU maintains a concern that the practical effect of certain elements of the ISO's load forecasting proposal could diminish traditional LRA authority over LSE load forecasting. For instance, the ISO "proposes to establish criteria that will trigger a review of individual LSE forecasts." […] If the ISO then determines that "an LSE forecast diverges unreasonably from … peak loads," then "[t]he ISO would have the ability to consider adjusting load forecasts or requesting LSEs submit revised load forecasts." […] This appears to indicate that the ISO would have authority to determine that an LSE forecast approved by an LRA was unreasonable. In that case, an ISO requirement that an LSE adjust or revise load forecasts could potentially impact LRA determinations and ultimately implicate ISO backstop procurement authority. Likewise, the design of the ISO's revised load forecasting proposal—to "safeguard against the potential for *unreasonable* forecasts … and *deter manipulation* of load forecasts" […]—implies that present LRA oversight of potential new PTOs is	The ISO proposes these review criteria in order to allow the ISO to review forecasts that have significant variation compared to historical performance. In conducting a load forecasting aggregation the ISO must ensure the ability to review forecasts. The ISO does not believe that this is in conflict with the principle of allowing LRAs to continue their existing procurement programs. The ISO is proposing to receive hourly load forecasts. If the ISO is able to move forward with this proposal then there will be no need to conduct any coincidence factor calculation. The ISO will simply compare each LSEs hourly load forecast information to the ISO system wide forecasted coincident peak in order to determine the amount that each LSE's forecast would contribute to the system-wide forecasted

Topic	Stakeholder	Question/Comment	ISO Response
		insufficient. Taken at face value, this approach would seem in direct tension with a "key principle" identified by the ISO in its original RA straw proposal, which had been "to develop an approach that will allow state regulatory commissions and load service entities to continue their existing procurement programs." […] More specifically, ICNU has several concerns with the proposed load forecasting process. Foremost, ICNU believes it would be appropriate for the ISO to allow for maximum flexibility for LSEs to perform load forecasting in a manner consistent with the individual needs of LSEs and in conjunction with customary LRA review and approval processes. The proposed alternative, having the ISO specify the criteria type and processes that should be used in load forecasting, seems less efficient and implicates concerns over diminished state regulatory authority. Regarding the coincidence factor, ICNU is generally unsupportive of the ISO's proposed use of a coincidence factor to adjust the load forecasts of the respective LSEs. As noted above, ICNU supports the use a "stand-alone" analysis, which would focus on the amount of import and export capability assigned to the respective zones. From ICNU's perspective, a better way to view the system coincident peak load savings is as a resource, rather than as an offset to load. Under a stand-alone analysis, the coincident peak load savings would effectively be allocated between the sub-regions as an import capability, based on existing intertie capabilities. This is in contrast to the ISO's proposed methodology, which would reduce the loads of the respective zones by each zone's share. The use of the proposed coincidence factors to adjust the RA loads of an LSE would be problematic for several reasons. Foremost, none of the options proposed by the ISO recognize that transmission limitations restrict the amount of coincident peak savings that can be achieved in a regional ISO. According to the E3 Benefits Study, for example, approximately 900 MW in peak load savings was attributable to a regional ISO including PacifiCorp, yet only 776 MW of that savings was assumed to be usable due to transmission constraints. […]	coincident peak. Under this approach it will be unnecessary to make any coincidence factor adjustments because the ISO will have all necessary information provided through the hourly load forecasts. The ISO agrees with the ICNU statement that rather than adopting a bright-line threshold for determining whether an LSE's load forecast requires some sort of plausibility adjustment, it is more appropriate to weigh all facts and circumstances surrounding the forecast error before taking remedial action. This statement is the ISO's proposed review process. The ISO only will use the review criteria as trigger to establish the ability to conduct a review. The ISO has not proposed to automatically conduct some plausibility adjustment, but rather the ISO will conduct a review process and have a discussion with the parties involved to discern the reasonableness of the forecast and allow the entities involved to explain and or revise their forecasts.

Topic	Stakeholder	Question/Comment	ISO Response
		In addition, it is not clear precisely how the system coincident peak load savings will be used in the overall zonal RA framework. There does not appear to be any term in the proposed zonal RA construct that would apply the coincident peak load savings towards the amounts that must be procured by utilities. Lastly, ICNU notes a potential concern with the ISO's proposal to use a 4% divergence threshold to trigger a performance review. The ISO presented survey results indicating that, for peak forecast error, more entities experienced error at 4% or above than within any other error range—which may actually point to 4% being a normative result. […] Rather than adopting a bright-line threshold for determining whether an LSE's load forecast requires some sort of plausibility adjustment, ICNU believes it is more appropriate to weigh all facts and circumstances surrounding the forecast error before taking remedial action. For example, a dramatic, unanticipated change in weather could skew the forecast error and may be appropriately considered when evaluating the reasonableness of a forecast.	
	AWEA, Interwest Energy Alliance, Renewable Northwest [*Joint Comments*]	The ISO's proposed approach seems reasonable as it would allow the practices currently employed in California to continue, while also providing a path through which new PTOs, which may not have a state run load forecasting program, can provide their own load forecast information. The ISO's proposal to review the LSE load forecast submittals for reasonableness should relieve concerns about inaccurate LSE load forecast submissions.	The ISO appreciates the comments in support of this aspect of the ISO proposal.

Topic	Stakeholder	Question/Comment	ISO Response
	PG&E	The CAISO should acknowledge its responsibility to ensure load forecasts are developed using a consistent methodology. […] PG&E has three concerns with the proposed CAISO load forecasting structure: a) PG&E does not believe the CAISO's divergence threshold will be meaningful enough to avoid unjust or unreasonable costs allocated to undeserving ratepayers. The Revised Straw Proposal discusses how the CAISO intends to validate LSE forecasts through a 4% divergence threshold in an LSE's average year-over-year change in the previous 3 years of normalized peak load data. […] PG&E is not convinced that using a 4% divergence threshold for further evaluation or providing the accuracy of each LSE's load forecast after the fact will have a meaningful effect on the RA compliance period and on the costs that may be incorrectly assigned to undeserving ratepayers. The current structure depends on the CEC's process, which uses an independent system forecast to compare LSE forecasts and evaluate deviations. The use of different load forecasting methodologies will make it difficult to determine whether load forecast errors are due to common errors that the CAISO can improve on by providing simple guidance to LSEs or whether errors are due to special circumstances associated with one LSE choosing to follow a different methodological practice that does not align with the rest of the LSEs. These difficulties will limit the ability to use statistical analysis to better forecast load in the future, which could greatly lower ratepayer costs in the short and long run. b) The CAISO should seek to address any known inconsistencies between the CPUC/CEC methodologies and the CAISO's existing or proposed load forecast adjustment rule. There are likely to be several differences between the CAISO's proposed approach to load forecasting that will differ from California's existing CPUC/CEC process. For example, the Revised Straw Proposal indicates that the CAISO currently allows entities to adjust submitted load forecasts prior to the start of the Month Ahead RA processes.4 Currently, the only load forecast adjustments the CEC and CPUC rules allow are related to load migration. Changes in underlying economic or weather assumptions between the annual load forecasting data and month ahead forecasting are not allowed under these rules to limit	The ISO understands that PG&E does not believe the proposed review criteria and published forecast error would be sufficient to protect against unreasonable costs, however the ISO disagrees and believes the proposal allows necessary flexibility for LSEs to conduct their own load forecasting. The ISO believes that the proposal for the ISO to conduct reviews and benchmark the accuracy of individual forecast submittals will provide adequate protection against PG&E concerns. The ISO agrees with PG&E's statement that the only monthly load forecast adjustments should be based on load migration and has clarified this in this proposal. The ISO disagrees with PG&E's statement that the proposal allows LSEs to use inconsistent counting rules for load modifying resources and is inconsistent with the counting rules proposal. The ISO proposal has simply stated that LSEs should have the flexibility to decide how their load modifying resources such as demand response be designated under their particular load forecasting purposes – this means that LSEs should have the ability to decide if they would like to designate their demand response programs as supply resources, subject to RA counting methodologies, must offer obligations, and other RA resource requirements, if they are shown as a resource used to meet their RA obligations. Alternatively, if LSEs would prefer

Topic	Stakeholder	Question/Comment	ISO Response
		manipulation. PG&E understands that the CAISO is unlikely to avoid all inconsistencies between the two processes on its first try. However, PG&E finds this particular example is important enough for us to ask the CAISO to address what types of monthly load forecast adjustments it is proposing to allow, and how monthly load forecast adjustments will be reviewed by the CAISO. c) The CAISO's proposal to allow LSEs to use inconsistent counting rules for load modifying resources calls into question the CAISO's statement that it must have consistent counting rules for resources in its Reliability Assessment. In its Revised Straw Proposal, the CAISO has chosen not to define how LSEs must include Demand Response, Additional Achievable Energy Efficiency, and Distribution Generation in its hourly load forecast. The CAISO argues that entities conducting load forecasts in an expanded BAA should retain the flexibility to treat adjustments to their load forecasts how they choose and to adopt whatever methods best represents the needs of their unique situation. PG&E understands that the CAISO believes its accuracy metric will capture inaccuracies in these various adjustments. As PG&E stated in its Straw Proposal comments […], PG&E supports the CAISO's need for consistent counting rules for its Reliability Assessment. PG&E continues to agree with the CAISO's argument that "…establishing consistent counting rules that the ISO would use for ISO resource adequacy showings and the reliability assessment will mitigate concerns about over-counting resources by an entity, which can result in leaning on other entities." […] PG&E believes this argument logically extends to the counting rules for load modifying resources such as Energy Efficiency, Demand Response, and Distributed Generation. The CAISO should align these counting methodologies to limit the view that there could be discrepancies in the treatment of resources. The CAISO should also make clear whether pumping load from pumped hydro storage should be included in the load forecast. As PG&E stated in its comments in the Straw Proposal […], an inconsistent load forecasting methodology has the same impact as inconsistent counting rules, which the CAISO has identified as a structural […] flaw that promotes […] leaning.	to keep those programs as load modifiers, and report them to the ISO as load reduction on the demand side in their load forecast submittals, they should have that flexibility. The ISO disagrees that supply side counting rules for PDR and RDDR should be extended to create some new categories of counting resources for load modifiers that are not subject to any such ISO RA resource requirements and the ISO believes that is not inconsistent to do so. The ISO requests clarification on PG&E's statement that there would be any discrepancy in the treatment of load modifying resources compared to supply side PDR and RDRR resources, and the ISO notes that the proposal for counting of PDR and RDRR is a registered capacity value, which is similar to any LSE's own valuation of their load modifying resources and programs that would be included in reductions to their load forecasts. The ISO does not believe it is appropriate for the ISO to dictate how LSE's should have to treat their respective LMR resources and programs in regards to designation as a supply or demand side resource. The ISO proposes that pumping load from pumped hydro storage should be not be included in the submitted load forecasts.

Topic	Stakeholder	Question/Comment	ISO Response
	SCL	Seattle City Light supports CAISO's taking a flexible approach towards LSEs and LRAs having a robust role in load forecasting.	The ISO appreciates the comments in support of this aspect of the proposal.
	XES	CAISO should develop a methodology that enables it to aggregate the various LSE forecasts but should leave the individual forecasting to the individual LSEs. Some LSE's are subject to regulatory review and the ISO should not be able to override an approved forecast by a regulatory authority. Even if the ISO becomes the monitoring and compliance authority for the entire RA process, the jurisdictional oversight and the obligation to serve will incent the individual LSEs to develop accurate forecasts for use in the RA process.	The ISO agrees with the comments in support of the proposal for load forecasting.
	CPUC	The CAISO's proposal […] is confusing. On the one hand, CAISO says that the CEC would continue to determine the load forecast for LSEs in the current CAISO BAA, on the other hand, it states that going forward each LSE would submit its load forecast directly to the CAISO. This is inconsistent with current California practice […]. While it may be consistent with how LSEs overseen by other LRAs or states currently operate, it conflicts with California's current RA program and therefore we do not support this proposal. CPUC Staff request that CAISO provide the same deference to California that it provides to other LRAs and LSEs that may potentially join the CAISO and defer to our existing practices and rules for submitting and validating load forecasts.	The ISO proposal's intent is that it would be necessary to receive forecasts for each individual LSE, not specifically from each LSE. The CEC could still conduct its load forecasting process and supply those individual forecasts to the ISO which would allow for this process to maintain the consistency of the current California load forecasting process. The ISO clarifies that this proposal is not in conflict with the current California RA program and the ISO will continue to provide the same deference to California that it provides to other LRAs and LSEs that may potentially join the ISO and defer to our existing practices and rules for submitting and validating load forecasts.
	CDWR	[…] CDWR has a number of more specific concerns with the CAISO's proposed approach to load forecasting. Many of those concerns stem from the fact that CDWR does not fit into the model of a typical utility with retail customers. CDWR moves water, and its loads depend on the amount of water that needs to be moved, hydrology conditions, environmental restrictions and other factors that do not closely align with the weather-	The ISO's proposed forecasting review process and divergence criteria to trigger a review ability is only intended to initiate the ISO's ability to perform a review if the ISO feels it is necessary. For uniquely situated LSEs such as CDWR the ISO would have the

Topic	Stakeholder	Question/Comment	ISO Response
		normalized model intended to forecast the use of heating, cooling and lighting by residential, commercial and industrial customers. It may be possible to resolve the concerns through specific exemptions, or by the recognition that CDWR forecasts will not fit into the model applied to others. CDWR notes specific concerns below: CDWR is very concerned with the proposed "actual historical trend" based Load forecast and divergence limit. This approach would be problematic for CDWR because of the hydrology driven uncertainty that is a pronounced character of CDWR load. CDWR's current forecasts to CEC do not include an hourly load forecast because divergence would be so common that such a forecast would not be useful. […] CDWR would appreciate an additional clarification regarding CAISO's expectations for CDWR load forecasting. In particular, how does the CAISO envision the hourly forecast will be generated for CDWR load? CDWR believes that entities with unusual load profiles, such as CDWR, should be provided with an exemption from the requirement that the CAISO could consider adjusting the LSE's forecast or "requesting LSEs to submit revised load forecasts, if an LSE forecast diverges unreasonably from the LSE's weather normalized peak loads, but only in cases where the LSE cannot demonstrate that its forecast is reasonable." CDWR does not oppose the concept of tracking unreasonable variances; however, due to uncertainties associated with hydrology, water demand, environmental requirements, and various other operational constraints, CDWR's future operation or forecast load may not necessarily converge with the historical weather normalized peak loads. For example, for the	flexibility to work with those sort of unique entities in that process and the ISO understands that a "one-size-fits-all" approach to load forecasting may not work for some LSEs. The ISO would prefer to receive hourly load forecasts for LSEs but the ISO has proposed to leave the development of those forecasts up to those LSEs. The ISO seeks feedback on this proposal for hourly load forecasts from other stakeholders as well and will revisit the need for other arrangements if it is apparent that would be necessary. The ISO does not intend to exempt any LSEs from any aspects of this load forecasting process and reserves the right to adjust load forecast submittals, however the ISO understands there is a need for flexibility for LSEs with unique needs and would not unnecessarily adjust a load forecast and would discuss any review with the entities involved.

Topic	Stakeholder	Question/Comment	ISO Response
		month of August during the period from 2006 and 2015, CDWR's load ranged anywhere from 255 GWh to 967 GWh. […] Currently, CDWR does not produce hourly load forecasts one year in advance, and accuracy of such forecasts at hourly granularity would not be attainable, nor could it be guaranteed. As mentioned above, CDWR's loads are highly dependent on hydrologic conditions, Sacramento-San Joaquin Delta water quality and environmental requirements, water demand, Feather and Sacramento River environmental requirements, and can fluctuate widely on hourly, daily, and monthly basis. Therefore, CDWR is very concerned with the proposed hourly load forecast in advance requirement and the feasibility of such a requirement as applied to CDWR's operations. • Weather Normalized Peak and Load Forecast […] CDWR's input includes a wide range of hydrology scenarios, water demand, environmental constraints, and planned pump outages. Given that CDWR's unique load profiles do not align well with the generalized load forecast approach reflected in the Revised Straw Proposal, CDWR believes that CAISO should consider CDWR's unique operational constraints and specifics of CDWR's forecasting abilities in developing regional RA requirements. The ISO specifically seeks stakeholders' feedback on the following questions: Q: Would it be appropriate for the ISO to specify the type of criteria and processes that load forecasting entities should use to conduct their load forecasts? CDWR response: CDWR believes that its existing forecasting methodology should remain intact. Given that it is not feasible to predict future hydrological conditions with	

Topic	Stakeholder	Question/Comment	ISO Response
		sufficient accuracy, CDWR would be unable to produce accurate hourly forecasts a year in advance, as currently proposed in the Revised Straw Proposal. Q: Alternatively, would it be appropriate for the ISO to allow flexibility for LSEs to conduct load forecasts in a manner that they determine and fits their individual needs?CDWR response: The ISO should allow CDWR to forecast with the level of granularity based on its own criteria driven by what's attainable a year in advance. […] As emphasized above, CDWR's loads are highly dependent on natural hydrologic conditions, water demand, and environmental requirements. Due to the uncertainty in hydrology and water demand, CDWR cannot always guarantee the accuracy of its forecasts. Therefore, CDWR believes that it should be exempt from the forecasting accuracy benchmarking process. • Coincidence Factor Methodology Options The CAISO has not provided pros and cons of utilizing these two methodology options or sufficient details to allow CDWR to evaluate these methods. CDWR will provide comments when such details become available. CAISO's proposal to calculate coincident load factor for each LSE in the expanded BAA would likely yield undesirable results for CDWR because of high degree of divergence of forecast and actual load, as described in the load forecasting section above. As far as coincident load factor for CDWR is concerned, the current method adopted by CEC for CDWR should continue. • Reasonableness Review and ISO Adjustment Authority The proposal states,	

Topic	Stakeholder	Question/Comment	ISO Response
		"Importantly, the ISO would adjust submitted forecasts only in cases where a LSE's non-coincident peak forecast diverges unreasonably from average year-over-year weather normalized peak trends when comparing the LSE's non-coincident peak forecast with the LSE's weather normalized peak trend, and the LSE cannot demonstrate that its forecast is reasonable." CDWR again notes that its forecast of future load may not converge with historical pattern as CDWR's pumping load demand is not weather normalized. • Load Forecasting Review Criteria […] […]As stated above, CDWR's cannot guarantee that there will not be significant forecast divergence, and CDWR should not be required to adjust its forecast which depends greatly on hydrology conditions and water demand. • Plausibility Adjustment Currently, CEC receives annual and monthly demand forecasts from CDWR and then submits those forecasts to CAISO without making adjustments. CDWR believes that any adjustment of CDWR's forecasts by CEC would be inappropriate, as CDWR's forecasting is based on hydrology conditions and water demand rather than the standard forecasting methods considered by CEC. Because of uniqueness of CDWR's operation, the existing forecast reporting arrangement should continue.	
	SCE	[…] SCE recommends a load forecasting workshop hosted by CAISO and assisted by the California Energy Commission to review what standards for load forecasts need to be established and what issues should be left to the local organization to establish. […]	The ISO agrees that it would be beneficial to hold a working group meeting or call on load forecasting and will hold such a forum.

Topic	Stakeholder	Question/Comment	ISO Response
	CLECA	The Stakeholder Comments and ISO Responses Matrix (Matrix) states that the process of allocations by the CPUC to its jurisdictional LSEs will be "similar" to the current process involving the CEC and that the LRA may, at its discretion, opt to have the CAISO perform the allocations. This is positive; CLECA has recommended revisions to the current CPUC-CEC process in the CPUC's RA docket; to the extent those are adopted by the CPUC, they should subsequently be incorporated here. The Coincidence Factor adjustment needs to be made using system wide peak for the BAA; this may be problematic. Indeed, several issues associated with the current Coincidence Factor adjustment by the CPUC and CEC are pending before the CPUC currently. For example, the existing CPUC-CEC process relies on weather-normalization with 4 years of load data and 20 years or weather data. If using weather normalized data as starting point, should weather normalized data for LSEs also be used? This issue is before CPUC now. As the Revised Regional RA Proposal is considering use of the current CPUC-CEC process for the Coincidence Factor adjustment, it should be informed by the CPUC's resolution of pending issues. The Revised Regional RA Straw Proposal also suggests consideration be given to the use of a new power coincidence system factor method to determine the coincidence factor. CLECA requests a comparative analysis be performed to inform this consideration. The analysis should show the results of this method for the current BAA and PacifiCorp. Did this proposed method come from another jurisdiction? Is it used anywhere else? What is its history and where did the idea to use it come from? Has it been successful in terms of enabling the prevention of shortfalls in resource adequacy, being accepted as fair and reasonable by the LSEs? The Revised Regional RA Straw Proposal's reasonableness review of LSE's forecasts would be triggered by a 4% divergence threshold in an average year-over-year change in the previous three years of normalized peak load data. Using three years, however, may be problematic. SDG&E has raised the valid point that installation of behind-the-meter resources has been growing and changing the load curve dramatically. Additionally, over the	The ISO is proposing to receive hourly load forecasts. If the ISO is able to move forward with this proposal then there will be no need to conduct any coincidence factor calculation. The ISO will simply compare each LSEs hourly load forecast information to the ISO system wide forecasted coincident peak in order to determine the amount that each LSE's forecast would contribute to the system-wide forecasted coincident peak. Under this approach it will be unnecessary to make any coincidence factor adjustments because the ISO will have all necessary information provided through the hourly load forecasts. The ISO believes that comparing to historical forecast error is appropriate and it would be very difficult to create a useful and meaningful review trigger based on some sort of projection as suggested. The three years of historical load forecast errors would be averaged and would simply be a review trigger, which the ISO would use to determine if an ISO review of the load forecast submittal is warranted so the proposal is appropriate.

Topic	Stakeholder	Question/Comment	ISO Response
		course of the next several years, the load curve will also be impacted by new, retail time-of-use rates. Declining load growth in general may be expected, partly due to growth of distributed energy resources behind-the-meter and partly due to appliance saturation. Accordingly, it is reasonable to posit that the further back one goes, the less representative the historically-based forecast is. Three years may be too far back, with the significant changes currently ongoing. Additionally, there may be significant Community Choice Aggregation growth that could be very impactful on the individual LSEs' load shapes.	

Topic	Stakeholder	Question/Comment	ISO Response
	NCPA	Development of Load Forecast In response to CAISO's question regarding the level of load forecast flexibility that should be required, NCPA believes that it is appropriate and necessary for the CAISO to allow flexibility for LSEs to develop their own load forecasts in a manner that best fits their individual needs. Individual LSEs are likely to be exposed to unique conditions that have a material impact on the development of load forecasts. For example, the local economy and associated variables within a given service area may be dramatically different from general macroeconomic factors that CAISO would otherwise likely rely on for developing a system wide forecasting methodology. These types of unique factors will have a significant influence on load forecast development. A common, system-wide forecasting methodology would not be able to factor in these type of unique variables. The individual LSE will always be most familiar with its own load patterns and the unique factors that may influence such loads. It will therefore always be best situated to develop the most accurate forecast. Reasonableness Review and CAISO Adjustment Authority The CAISO has provided no basis justifying why it should supersede the judgment of the Local Reliability Authority (LRA) in establishing load forecasting methodologies and load forecasts for LSEs. NCPA strongly believes that each LRA should be solely responsible for managing how its jurisdictional LSEs develop their respective load forecasts. The CAISO should not make any adjustments to LSE load forecasts. The CAISO is not a regulatory authority and is not a utility; rather, the CAISO is responsible for managing the day-to-day operations of the grid within its BAA. To the extent that the CAISO identifies that a particular LSE's load forecasts are systematically over- or under-stated, the CAISO should notify the appropriate LRA, and allow the LRA to work with the respective LSE to identify the source of the divergence. If CAISO nevertheless proceeds with its proposal to review and adjust an LSE's forecast, the proposal should be	The ISO appreciates the comments in support of the proposed flexibility for LSE load forecast submittals. The ISO has not proposed that it would somehow supersede the LRAs load forecasting, rather, the ISO believes that it is appropriate to create review criteria in order to safeguard against potentially unreasonable load forecast submittal because those forecasts will be the basis for the system-wide forecast that establishes the system wide RA need and it is appropriate for the ISO to create criteria in order to potentially trigger the ISO's ability to review the submitted forecasts. The ISO only will use the review criteria as trigger to establish the ability to conduct a review. The ISO has not proposed to automatically conduct some plausibility adjustment, but rather the ISO will conduct a review process and have a discussion with the parties involved to discern the reasonableness of the forecast and allow the entities involved to explain and or revise their forecasts.

Topic	Stakeholder	Question/Comment	ISO Response
		revised to clearly state that discussions with the LRA will precede any CAISO proposal to modify an LSE's forecast. […]	
	NIPPC	NIPPC supports the ISO proposal which provides LSEs flexibility in preparing their load forecasts while also requiring LSEs to submit their modifiers and adjustments to the ISO to facilitate review. NIPPC does not have specific comments on the details of the proposed load forecasting methodology. […]	The ISO appreciates the comments in support of this proposal for load forecasting.

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	ORA	[…] ORA concurs with the ISO proposal to utilize 1-in-2 load forecasts for weather normalized peak load in the method adopted by the California Energy Commission (CEC). The ISO seeks feedback on whether to use ISO specific criteria and processes for LSE load forecasting or to allow the flexibility of independent LSE forecasts. ORA supports the use of specific criteria, however, a body that is not mandated to prioritize specific criteria, such as cost or reliability, should develop forecasting criteria and processes with input from the LSEs and the ISO. That body should not be the ISO itself. In general, ORA favors allowing California's unique policies and programs to continue under the regional RA program. This necessitates forecasting resources in a way that gives full credit to the unique contributions of specific energy efficiency, demand response and other customer programs. Such forecasting may be best achieved with a local authority calculating the forecast for California. However, local forecasting would require strict adherence to rules to mitigate capacity leaning and assure that each LSE contributes fairly to system reliability. This approach could become unwieldly if numerous participants join the regional ISO. Local forecasting also necessitates stricter enforcement than a more standardized approach. ORA therefore supports a standardized approach to simplify forecasting and reduce potential capacity leaning. A standardized approach, however, should be conducted by a body that functions similarly to the CEC to objectively balance both the reliability concerns of the ISO and the cost concerns of local authorities. This body should have authority over forecasting to allow for a variety of stakeholder input and a consensus outcome acceptable to all impacted by forecasts. The current process in California with a body which does not favor either cost concerns or reliability concerns allows for a balanced approach and minimizes conflicts between varied interests and prevents protracted litigation. The Revised Straw Proposal presents two potential options for calculating the coincidence factor. The median of five monthly peaks as used by the CEC is compared to the Power Systems coincidence factor methodology. The	The ISO continues to believe that it's appropriate to allow for flexibility for LSE load forecasting submittal and does not intend to seek out independent third party to create load forecasting criteria. The ISO appreciates the suggestion to conduct load forecasting through an external third party, however the ISO believes that a load forecasting aggregation methodology conducted by the ISO utilizing the submitted LSE level forecasts should glean a workable load forecasting process that is similar to the process already in place in the MISO region as noted in the previous proposal's background information. The ISO is proposing to receive hourly load forecasts. If the ISO is able to move forward with this proposal then there will be no need to conduct any coincidence factor calculation. The ISO will simply compare each LSEs hourly load forecast information to the ISO system-wide forecasted coincident peak in order to determine the amount that each LSE's forecast would contribute to the system-wide forecasted coincident peak. Under this approach it will be unnecessary to make any coincidence factor adjustments because the ISO will have all necessary information provided through the hourly load forecasts. The ISO believes that it is appropriate to create review criteria in order to safeguard against

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		California Public Utilities Commission (CPUC) RA proceeding is currently examining the CEC methodology in order to promote understanding of the application of that methodology. While the ISO presented the basics of the Power Systems methodology, ORA seeks more information detailing the differences between the CEC's use of five month peaks and the Power Systems coincidence factor methodology, and requests some examples of results using the two methods. Comparing the differences between the CEC's use of five month peaks and the Power Systems coincidence factor methodology in a workshop with the opportunity for the give and take of open stakeholder dialogue could result in a consensus regarding which method is more appropriate for an expanded ISO, or at a minimum, clarify and narrow the disagreements. ORA therefore respectfully recommends that the ISO consider conducting such a workshop ahead of the final draft proposal for regional RA. Given the proposed timeline, the workshop would be best held in mid or late May. The Revised Straw Proposal indicates that the ISO will perform a reasonableness review of LSE forecasts and have the authority to adjust LSE forecasts that the ISO deems unreasonable. In California the CEC, a body which is not required to value either reliability or costs more highly, performs the reasonableness review and maintains sole authority to adjust LSE forecasts. In addition, a California-specific body such as the CEC understands California's complex programs in great detail, is mandated to support California's policy goals, and must be responsive to California stakeholders. Such a state-specific body is better than a regional one to serve each state with regard to overseeing these functions. State-specific oversight would allow this entity to balance the competing considerations of reliability, cost, and adherence to environmental goals. California stakeholders, as well as those from other states, are vested in individual state goals and programs to address unique concerns.	potentially unreasonable load forecast submittals because those forecasts will be the basis for the system-wide forecast that establishes the system wide RA need and it is appropriate for the ISO to create criteria in order to potentially trigger the ISO's ability to review the submitted forecasts. The ISO only will use the review criteria as trigger to establish the ability to conduct a review. The ISO has not proposed to automatically conduct some plausibility adjustment, but rather the ISO will conduct a review process and have a discussion with the parties involved to discern the reasonableness of the forecast and allow the entities involved to explain and or revise their forecasts.
	UAMPS	Using a 4% divergence threshold for all LSE's may put smaller entities at a disadvantage over larger ones. Loads in smaller entities can fluctuate more due to weather and specific load characteristics of the LSE. Larger entities can spread fluctuations over their total load better, absorbing and normalizing	The ISO understands the comment that the review criteria may trigger review of smaller entities who may have more variable loads on a percentage basis. The ISO only will use the

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		changes into their load. The ISO should offer some leeway when reviewing small LSE's.	review criteria as trigger to establish the ability to conduct a review. The ISO has not proposed to automatically conduct some plausibility adjustment, but rather the ISO will conduct a review process and have a discussion with the parties involved to discern the reasonableness of the forecast and allow the entities involved to explain and or revise their forecasts. This review process would allow for the flexibility that has been suggested.
	Six Cities	The Six Cities continue to support CAISO's proposal to develop load forecasts for purposes of resource adequacy assessment based on load forecasts initially developed by participating LSEs and/or Local Regulatory Authorities, subject to review and potential adjustment for consistency and reasonableness […].	The ISO appreciates the comments in support of this load forecasting proposal.
	PAC	[…] PacifiCorp continues to support the ISO's general framework on this item, but believes that the coincidence factor for determination of the coincident load to each LSE needs to be reviewed more thoroughly using longer historical time periods. It may be that the 1-3 year history the ISO is proposing to use is reasonable, but that decision should be based on testing that theory not simply adopting a method without supporting analysis. The methodology ultimately adopted by the ISO would directly influence coincident peak load benefits for LSEs in the expanded BAA. PacifiCorp will be considering these benefits when developing a risk adjusted business case for participation in a regional ISO. Also, with the increases in solar penetration, both utility scale and distributed generation, peak load times have the potential to rapidly shift to different hours within the day. Historical data can be important, but the ISO will also need to consider how increasing penetration of solar resources will impact the coincidence factor on a forecast basis. PacifiCorp supports the ISO's proposal to instruct the LSE to adjust its load forecast if it believes that it is unreasonable based on actual peak data and	The ISO is proposing to receive hourly load forecasts. If the ISO is able to move forward with this proposal then there will be no need to conduct any coincidence factor calculation. The ISO will simply compare each LSE's hourly load forecast information to the ISO system wide forecasted coincident peak in order to determine the amount that each LSE's forecast would contribute to the system-wide forecasted coincident peak. Under this approach it will be unnecessary to make any coincidence factor adjustments because the ISO will have all necessary information provided through the hourly load forecasts. Increasing penetration of solar resources should be captured in the submitted hourly load forecasts so there is no need to project

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		after a thorough review with the LSE. […] Due to the complexity of the load forecast submitted by each LSE, which is developed utilizing weather, economic, and class level load data, PacifiCorp believes that the LSE should be responsible for implementing a proposed adjustment to its load forecast.	coincidence factors that take account of solar resources or other load modifications that are already included in the load forecasts.
	SDG&E	[…] Given the ISO's proposal for Zonal RA requirements, SDG&E questions whether the coincidence factor should be calculated based on each zone rather than the system as a whole. The ISO acknowledges that different zones peak at different hours. Yet the proposed methods do not consider the various peaking needs for each of the zones proposed by the ISO. SDG&E also requests the ISO to detail whether it will use the same method for the coincidence factors of Local RA requirements? The ISO proposes that existing LSEs in the current ISO Balancing Authority Area ("BAA") continue to submit load forecasts to the California Energy Commission ("CEC"). Then the ISO expects the CEC to submit the respective LSE data to the ISO. SDG&E wishes to understand which load forecast the ISO will use, the one which the CEC has already adjusted based on the CEC's coincidence factor methodology based only on the existing ISO BAA territory or the unadjusted forecast? If it is the former, how will the ISO incorporate the adjusted forecast into the ISO's coincidence factor methodology and process? Would the adjusted forecast skew the results? If it is the latter, how does this affect the CEC's role in calculating the coincidence factor for existing LSEs within the current ISO BAA? Does the ISO propose to receive the combined hourly load forecast of all LSEs from the CEC or individual LSE load forecasts from the CEC? […] If the ISO is planning and setting requirements based on coincident peak, does it make sense to benchmark a LSE's requirements based on non-coincident peak? If the CEC has adjusted the LSE's forecast based on its methodology but the forecast is still above the ISO's proposed 4% threshold, will the ISO have authority to adjust that LSE's forecast on top of the CEC's adjustment? Will the ISO adjust the LSE's forecast to exactly 4% or would it be a different value?	The ISO has decided not to move forward with zonal RA requirements. The proposal that the ISO prefers to receive hourly load forecast submittals would make it unnecessary to calculate a coincidence adjustment for individual LSEs. The ISO understands that there are still many unanswered questions about how the proposed load forecasting process would interact with the current CEC process, the ISO believes that these are important questions to consider but does not have all of the details determined at this time. The ISO intends to hold a load forecasting working group to discuss many of these important considerations and technical details. The ISO will use this working group to inform upcoming proposals on load forecasting. The ISO intends to reserve the right to make adjustments to LSEs load forecasts submittals for all LSEs and does not plan to always make the same level of adjustment, rather only adjustments that were warranted would be made, which may not always be exactly 4%. The ISO also notes that the 4% variation/divergence band is simply intended to

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		SDG&E does not believe ISO should compare forecasts to historic normalized data. Historical normalized data often times do not capture new load patterns adequately or timely. The CEC's bi-annual Integrated Energy Policy Report ("IEPR") process incorporates new load patterns. SDG&E recommends that the ISO investigate if other state agencies, within the ISO's proposed expanded footprint, also have similar processes for forecasting load for their state. If the total coincident peak for all LSEs' load forecast is within the threshold of the forecasts developed within those processes, then there should be no adjustment.	trigger the ISO review ability and is not an intended adjustment guide or value. The ISO understands the comments that historic data may not capture new load patterns but the ISO disagrees that that means the ISO shouldn't benchmark load forecast submittals against historic normalized data. The ISO needs to review the accuracy of forecasts in a manner that relies on actual observations, not projected potential load patterns.
	SCE	The CAISO needs to strike a balance between establishing forecast standards and allowing flexibility to organizations providing forecasts. Without sufficient standards, developing an integrated forecast and coincident peak may be difficult because of differences in standards. The CAISO's proposal of weather normalized 1 in 2 load forecasts which include expected load modifiers from demand response, energy efficiency, or behind the meter generation is a good starting point. […] The current load forecast from individual load serving entities is confidential as it could reveal their position in the market. The CAISO mentioned that they would publish load forecast accuracy measures. The release of load forecast data needs to adhere to the current confidentiality standards.	The ISO appreciates the comments by SCE on the ISO load forecasting proposal. The ISO agrees that some areas may require some defined criteria. The ISO does believe that the ISO will be able to conduct a load forecast aggregation of individual LSEs forecasts even if there are some differences in the treatment of certain aspects of those underlying load forecasting submittals. The ISO understands the concerns over confidentiality of load forecasting data and the ISO commits to adhere to all confidentiality standards and ensure that no confidential information is made public.
	WRA, WGG, NRDC, Utah Clean Energy	In our previous comments we supported the following components of the Straw Proposal: (1) participants in the RSO market will continue to develop their load forecasts as they currently do; (2) all hourly load forecasts will identify demand response, additional achievable energy efficiency, and distributed generation; (3) the RSO will review LSE forecasts and make adjustments if an LSE forecast diverges unreasonably from the LSE's actual	The ISO appreciates the continued support of those aspects of the load forecasting proposal. The IOS will strive to provide open and transparent processes for review and adjustment aspects of the proposal as indicated in the comments.

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	[*Joint Comments*]	peak loads or historical usage and the LSE cannot demonstrate their forecast is reasonable; and (4) the RSO will use these forecasts to develop coincident system load forecasts. We continue to favor this approach. • Transparency We appreciate CAISO's response to our comments that load forecasting be robust and transparent and that the accuracy of forecasts be made public. We fully support CAISO's proposal to publish the results of load forecast accuracy after the fact, "specifically identifying the load forecast error percentages (%) for all of the submitted load forecasts comparing to their weather-normalized peaks." We believe providing this information mitigates bad behavior and builds trust that the ISO's processes will lead to efficient and fair outcomes. • Load Forecasting Requirements A theme in these comments is the need to develop probabilistic methods and metrics; we believe a Regional ISO should employ state-of-the-art methods in assessing and protecting reliability. With this in mind, we support including the level of detail in load forecasting requirements needed for the Regional ISO to develop probabilistic metrics including a Loss of Load Expectation (LOLE) method for determining PRM. • Load Forecasting Review and Adjustment Authority We support the ISO being given the authority, through its tariff, to adjust LSE forecasts that appear unreasonable and for which the LSE is unable to demonstrate that a forecast out of line with its peak trend is reasonable. Allocations of capacity requirements are dependent on these forecasts, and unreasonably low forecasts can lead to leaning and potential resource insufficiency. However, transparency is the key to trust. Authority for the ISO to adjust LSE forecasts should only be exercised in an open and	

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		transparent manner through well-developed and well-understood processes. • Load Forecasting Review Criteria We support the ISO using an identified criterion to trigger a review of an LSE's load forecast for reasonableness, and, given the information provided in the Revised Straw Proposal, use of a 4% divergence threshold in an LSE's forecast from an average year-over-year weather normalized peak trend appears to be a reasonable trigger criterion. However, we also believe the processes that follow are of ultimate importance. Once a review has been triggered, an open and transparent review process is paramount. Details explicating the review process should be provided in the next revision. • Monthly Load Forecast Adjustments We support allowing load-forecasting entities to update their forecasts in the month-ahead timeframe. One would expect month-ahead forecasts to be more accurate than forecasts developed year-ahead. Providing transparency into the accuracy of forecasts after the fact, as CAISO has proposed, will assist in revealing and mitigating leaning and gaming. • Coincidence Factor Methodology Options We find both the Median of Five Monthly Peaks methodology and the Power Systems Coincidence Factor methodology to be rational approaches to correlating LSE coincident and non-coincident peak loads to the ISO's peak conditions. Since the ISO would apply the same coincidence factor formula equitably to all LSEs, we stand neutral on the choice of methodology.	
	SVP	SVP shares NCPA's stated concerns (in its comments in response to the initial issues paper, the first straw proposal and the Revised Straw Proposal) that individual LRAs will lose the essential local control over their programs	The ISO understands that there are still many unanswered questions about how the proposed load forecasting process would

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		on which the RA program has been built if the CAISO uses uniform load forecasting and counting methodologies throughout the entire region. With regard to the specifics of the proposal, Silicon Valley Power (SVP) would like to have better clarity on how the current California Energy Commission (CEC) load forecast process might be amended in the modified Regional Resource Adequacy regime being developed by the CAISO. Also, will the CAISO's divergence band/threshold be utilized on CEC-adjusted coincident peak values, or the original LSE-submitted non-coincident peak forecast information? Furthermore, SVP seeks clarification as to whether the proposal to publicly post forecasts and forecast errors is intended to be shown at the LSE or Local Regulatory Authority level. The Revised Straw Proposal indicates that the purpose of publishing the load forecast accuracy is to "benchmark the accuracy of submitted forecasts." SVP seeks clarification as to what CAISO means by benchmarking in this context. […] Load Forecasting Coincidence Factor: SVP questions the need to consider changing from the CEC's median of five monthly peaks to a power systems formula. What are the problems with the median of five monthly peaks method that justify a change?	interact with the current CEC process. The ISO believes that these are important questions to consider but does not have all of the details determined at this time. The ISO intends to hold a load forecasting working group to discuss many of these important considerations and technical details. The ISO will use this working group to inform upcoming proposals on load forecasting. The proposal does not intend to post actual load forecasts, which would be in violation of confidentiality standards, the proposal is only to post the load forecast error (%) and would be done at a LSE level. The intent of the "benchmarking" through posting of these forecast errors for individual LSEs is so that the ISO can reveal LSEs forecast errors and compare them publicly against other LSEs accuracy, which would have the effect of revealing when certain LSEs have been inaccurate in their forecast submittals.
	CMUA	While CMUA is not concerned about the current Load Forecasting process in the context of the current CAISO BAA, CMUA seeks symmetry in an expanded footprint. CMUA is concerned that the load forecast for California LSEs is subject to regulatory oversight, while the LSE load forecasts in other jurisdictions are not. Further, CMUA is not convinced that either a nontransparent exchange between the CAISO and a non-California LSE, or after-the-fact reporting, both of which may be excellent ideas in their own right, are adequate to replace regulatory oversight for a portion of the co-optimized system, but not all of it. CMUA would be willing to consider either of these formulations as part of uniform load forecasting processes across any expanded CAISO footprint. Modifications to the California process to	The ISO will strive to conduct any review and adjustment in a transparent manner. The ISO does not believe that uniform load forecasting process across an expanded BAA is necessary. The ISO points to the experience of the MISO region where there are many LSEs that all submit their own load forecasts without the direct oversight of their state regulators or other state energy forecasting agencies. The MISO process yields accurate and reasonable forecasts used for their RA purposes. The ISO

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		allow direct LSE submission of load forecasts to the CAISO should be considered, or state or LRA oversight of non-California LSE load forecasts should be contemplated.	intends to hold a load forecasting working group to discuss many of these important considerations and technical details. The ISO will use this working group to inform upcoming proposals on load forecasting.
	UTC	The UTC supports the ISO's proposal to use existing methods load serving entities (LSEs) use for load forecasting because such arrangements have not led to under forecasting or resource inadequacy. The load forecasting methods Pacific Power uses for Washington load have proven sufficient for meeting reliability standards in its operation of its western balancing area. The UTC proposes one modification to the load forecast review procedure proposed by the ISO. The Revised Straw Proposal proposes that LSEs justify their load forecast to the ISO if the ISO rejects the LSE's load forecast. The UTC proposes that for LSEs outside the existing ISO boundaries that are regulated by a state commission or local regulatory authority (LRA), the ISO should request the state commission or LRA review the LSE's forecast as a first step. Under this approach, the ISO would submit its findings and conclusions to the state commission or LRA, which would then review the LSE load forecast to make a determination about its validity. This additional step would allow the LRA to provide direction to the regulated utility about its load forecast.	The ISO believes that the individual LRAs and state commissions and their jurisdictional utilities should perform whatever review processes they already have in place prior to the submittal of any load forecasts to the ISO. The ISO does not intend to limit that ability for existing regulatory review of the LSE load forecasts in any manner. The ISO review process would include any of the respective entities responsible for LSE load forecasting so if the LRA or State Commission had a role in overseeing the LSE's submitted load forecast then they would be involved in that review conversation but the ISO does not intend to include an additional step where the LRA would approve or do separate additional review of the ISO findings, rather the ISO intends for that process to be more of a conversation amongst the interested parties to determine if the forecast under review should be accepted or if the ISO should request a revised/adjusted forecast submittal.
	BPA	Has the CAISO observed or considered the possibility that the highest import days may not happen when load is greater than 90%? Weather conditions, market conditions, and unit outages could cause higher imports at time when	The RA construct is built around the concept that resources are needed and must be

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2 **Maximum Import Capability** **(MIC)**		load is less than 90%. The MIC amount should be set based on the maximum import at any time, regardless of the load percentage. In the proposed language change to the MIC calculation, please clarify whether the highest total import level is based on scheduled or actual flows. Also, how are capacity tags and dynamic tags treated in the MIC calculation? The concept of "branch groups" is unclear in the straw proposal. Please provide more information on what branch groups are. How are new branch groups to the ISO determined? Once set, are the boundaries able to move? The proposed MIC calculation proposes to modify the current language in the Reliability Requirements BPM, removing the reference to the CAISO's load to "90% of the annual peak load for each relevant simultaneously constrained part of the grid." […] What is the definition of "simultaneously constrained part of the grid"? Is this meant to refer to the same concept as the "zones" the CAISO is proposing in section 5.3 of the Revised Straw Proposal? If so, the CAISO should add a reference to the zones in the sentence. If not, the CAISO should provide more detail as to what is meant by the phrase "simultaneously constrained part of the grid." In Step 4 of the MIC calculation, BPA is concerned about seasonal timing of the peak that is used to assign the pre-RA MW amounts. The 90% load figure is likely to mean the peak will occur during the summer, when California and PacifiCorp experience their peaks. However, other utilities, including some of BPA's customers, have winter peaks. Setting the pre-RA amount based on a summer amount might have the effect of constraining a winter peaker's MIC to below its system peak. How will the cut-off date be established for Pre-RA Commitments? Is there a methodology, or will stakeholders have an opportunity to participate in its development? […] Today, LSEs in PAC's BAs are meeting their respective load obligations using existing resources and are doing so consistent with existing requirements. However, if PAC becomes a PTO, the RA Straw Proposal would appear to place a number of new capacity obligations on Scheduling	deliverable to the aggregate of load at peak periods. 90% is the lower end of peak load. MIC is calculated based on schedules (public data available on OASIS) and it is give out at Branch Groups (BG) or scheduling points (unique mapping between them). Changes to scheduling points are allowed and done through a public process. Simultaneous constrained part of the grid will be determined through real-time observation and technical studies. They are not the same as zone. Currently both SP26 and NP26 zones peak in the summer and they are included within a single simultaneously constrained area. This proposal addresses the winter peak issue since that will most likely be a different simultaneously constrained area. The Pre-RA Commitments cut-off date will need to be determined through some discussion with affected entities in the potential New PTO footprint. There is no established methodology for this discussion. The ISO understands BPA's concerns that the RA construct may impose new obligations on

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		Coordinators/LSEs within PAC's BAs. BPA is concerned that the RA proposal will force certain utilities into a market that will require them to carry significantly more resources than they were previously required to carry, which will be costly for those utilities and their customers. BPA, therefore, recommends that the CAISO grandfather current service arrangements and apply the RA proposal on a prospective basis only.	LSEs and the requests to grandfather current service arrangements.
	ICNU	ICNU is generally unsupportive of the proposed MIC framework. While the 13-step process may provide some protection from value shifts from low-cost to high-cost regions, ICNU does not necessarily agree that it is the ideal methodology. From a new PTO's perspective, the impact of adopting the detailed 13-step process is difficult to understand, let alone quantify. Many of the steps appear to be tailored to the specific needs and characteristics of each of the existing LSEs within the ISO, which may not necessarily be appropriately applied outside of the existing footprint. From ICNU's perspective, the RA design ought to ensure that there is no value shift with respect to the RA resources used to serve loads today, as compared to the RA resources that will be used to serve load in a regional ISO. If a utility in the Pacific Northwest is relying on the low cost hydro resources and low-cost power markets in the region, for example, the value of that low cost capacity should not be shifted away from the Northwest utility as a result of joining the market. Thus, the use of a "stand-alone" analysis seems to be the strongest option to prevent these sorts of value-shifts over time, and accordingly, ICNU recommends that the ISO explore such an option.	The ISO believes that the MIC process will work for an expanded BAA and the ISO has detailed the process in previous proposals, additionally the ISO has offered to explain this process in detail to any stakeholders who wish to have offline discussions and meetings on any RA subjects. Therefore the ISO does believe that this process will be a barrier for new entrants. If the ICNU believes that some things appear to be tailored to meet the needs of the current BAA and would not be appropriate in an expanded BAA for those potential new entrants, then the ISO encourages ICNU to provide additional detail on these aspects that are specifically troubling and the ISO will be able to address those issues at that time. The ISO agrees with aspects of the value-shifting comment by ICNU and has included a new aspect of the MIC proposal in order to split the calculation and allocation of MIC based upon TAC sub-regions. Please see the MIC section in this proposal.

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	CPN	Calpine requests further clarification of the CAISO's MIC proposal. As Calpine understands the proposal, the CAISO would allow MIC to be determined based on historical imports during different sets of hours for different parts of an expanded CAISO BAA. It is unclear how this approach is consistent with a system level requirement for all LSEs to procure sufficient capacity to meet the system-wide peak. For example, it is unclear how the ability to import power into Wyoming in the winter would help the CAISO meet system level requirements in the summer. (Calpine recognizes that MIC reflects only the potential to import into the CAISO and cannot be used directly for RA compliance without an associated resource or non-resource-specific offer to satisfy the RA must-offer obligation.)	The change will increase MIC from values that may be used at system-wide peak in order to accommodate other non-simultaneous non-system-wide peaks across the expanded footprint.
	MCE	MCE acknowledges that some limited changes to the current MIC allocation process may be necessary to accommodate new market entrants and take advantage of the non-simultaneous peak loads that would occur in different areas within the expanded balancing authority area. However, as the ISO notes in the Revised Straw Proposal […], it is absolutely critical that when designing these new rules the ISO protect the pre-existing arrangements and contractual obligations that already exist between entities on particular interties. At a minimum, the ISO needs to ensure that pre-existing contracts for RA capacity are unaffected by any changes the ISO may require to the MIC methodology.	The ISO's intention is to continue to assure that all Pre-RA Import Commitments can be counted for RA until they expire. The current arrangements that have been protected will not be affected by the MIC proposal.
	AWEA, Interwest Energy Alliance, Renewable Northwest [*Joint Comments*]	From a high level, the ISO's proposal seems reasonable and appears to help ensure the benefit of regional diversity will be captured under the regional RA methodology. The Joint Commenters look forward to more in-depth discussions on this and other topics.	Thank you for your comment. The ISO appreciates the support for the MIC proposal.

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	PG&E	PG&E would benefit from more information on why the Maximum Import Capability methodology should account for CAISO non-simultaneous peaks. The CAISO proposes to change the methodology for how Maximum Import Capability is determined to account for the possibility that "a PTO that joins the ISO has a need to serve its peak load that occurs non-simultaneous with the rest of the system and when there are no simultaneous constraints between certain areas of an expanded ISO BAA." […] PG&E appreciates the added detail the CAISO provided on the […] (MIC) process as well as the need for the proposed methodological change. The CAISO indicates that without the change, imports may be artificially constrained, and imports may be able to contribute for more than has been historically seen at the CAISO System coincidental peak since the imports have been aligned with the needs of the region and not the CAISO. PG&E continues to be confused by this aspect of the proposal. Since the RA construct is built around the simultaneous CAISO peak, we would appreciate more information from the CAISO on this change. Particularly: a) Why is a PTO's peak load that occurs non simultaneous with the rest of the system relevant to this initiative and to the MIC calculation for purposes of RA? b) Wouldn't the CAISO expect these import levels to be self-correcting considering that imports, prices, and load might adjust once the PacifiCorp regions become a part of the CAISO optimization? In addition to more information in this section, PG&E requests that the CAISO explicitly define that an intertie referred to in the MIC section of the proposal is a point that the new regional ISO footprint shares with an external BAA. […]	Certain areas of the expanded grid, for example PaciCorp West, do not peak in the summer, their imports can be rather low at ISO simultaneous peak and that region may not have enough internal resources to serve peak winter load if MIC is establish at relatively low summer numbers. Or the LSEs in the area may be forced to use high cost internal resources as RA in the winter months when plentiful other resources are available outside the area due to low MIC or their branch groups (scheduling points) established at summer peak values. This issue will not be self-correcting due to load and import patterns.
	WRA, WGG, NRDC, Utah Clean Energy	[…] If CAISO considers the timeline to develop a robust stochastic approach infeasible for this initiative, then we recommend it propose a placeholder approach and combine the tweak of the Reliability Requirements BPM with a clear plan to develop a probabilistic assessment of MIC.	The ISO appreciates the suggestion and believes that the proposed process, as detailed in the proposal above will allow sufficient time for development of a probabilistic PRM approach, however the ISO believes that the

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	[*Joint Comments*]		current MIC calculation proposal to continue the use of historical observation for an expanded BAA is appropriate. Currently, the ISO does conduct a forward looking MIC calculation for scheduling points/interties where state and federal policy goals required an increase from historical levels. The ISO will evaluate the need for further modifications as necessary.
	SCL	Seattle City Light encourages CAISO to consider the Intertie ratings, rather than highest deliveries during high load periods, as part of the basis for determining MIC. Because the historic use will be less than total possible use, import capability could be unnecessarily restricted. Furthermore, ratings may be managed to ensure that Interties are reliable, which would have the added advantage of producing both reliability and economic benefits. Seattle City Light encourages the CAISO to continue to work with the Bonneville Power Administration and other intertie path operators to improve intertie availability and utilization in a safe and reliable manner.	The MIC process has been established in order to determine what capacity is simultaneously deliverable from all interties into certain areas. Intertie ratings are not simultaneously deliverable to the aggregate of load.
	XES	An LSE's firm transmission service rights from an external network resource should be allocated solely and fully to that LSE's RA credits and any shared MIC allocation calculation should be decremented accordingly. For example, if the historical MIC on an intertie is 1000 MW, and an LSE inside CAISO has 150MW of firm transmission service sourcing at an external generator (designated as a network resource and accredited for 150 MW), that LSE should receive the full 150 MW of credit towards its RA obligation. This allocation should occur regardless of the zone the LSE is located, and the remaining MIC calculation allocated to the remainder of the zone should start at 850 MW for that tie. If the ISO design does not respect the transmission rights and allocates RA rights across all LSE's (by either lowering the total obligation of the zone of the LSEs or simply allocating the MIC pro-rata to the LSEs), then the LSE that holds the transmission service rights has effectively subsidized all of the other LSEs in the ISO (or zone) for the use on that path.	All Existing Transmission Contract (ETC) and Transmission Ownership Rights (TOR) will be respected in the MIC calculation and assigned to the LSE that owns them. ISO intention is to continue to assure that all Pre-RA Import Commitments can be counted for RA until they expire.

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		Also, we request CAISO provide examples of how the calculation of MIC will change if the footprint of the ISO expands. An import location today may soon be an internal node on the system, which will make historical usage information less reliable.	
	CDWR	CDWR requests that the ISO run a study for MIC allocations to LSEs with expanded BAA and provide results to LSEs to see the potential impact to LSEs due to integration. CDWR supports ISO's consideration of existing contractual rights (ETCs and TORs) and pre-existing commitments (Pre-RA Commitments) under the current MIC process to allow existing arrangements and practices to continue without negatively impacting potential new entrants.	The ISO has provided additional information on MIC values for an expanded BAA in this proposal. The ISO is unable to conduct a study of how allocations would result because that outcome depends upon the various actions of individual LSEs nominations on the various interties throughout the various steps of the MIC process. The ISO believes that it has provided analysis on MIC to the extent possible at this time.
	NIPPC	NIPPC supports the ISO's proposal to revise the existing methodology used to calculate the MIC MW values to reflect the different peak time periods in which non-coincident peaking areas without commonly known constraints experience their own maximum simultaneous imports. […]	The ISO appreciates the comments in support of the proposal.
	ORA	The Revised Straw Proposal notes that the ISO is currently conducting an analysis to apply the current MIC methodology to the ISO and PacifiCorp combined balancing authority (BA) footprint. ORA recommends expanding the analysis beyond the proposed footprint to best consider adaptations for other possible entrants beyond PacifiCorp in an expanded BA footprint. Changes to the current California structure to accommodate an expanded BA footprint should be designed to create a durable structure that best fits the expansion beyond PacifiCorp as envisioned by the ISO.	The ISO understands the suggestion, however, at this time the ISO believes that it would not be feasible to extend a similar analysis to other potential new areas unless the ISO were provided with scheduling data from those areas. The ISO believes the current method is durable enough to be utilized by any expanded BAA entities that may join at a later time and if additional modification are deemed necessary at a later time the ISO would conduct a stakeholder process to effectuate any needed adjustments.

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	PPC	Thank you for the opportunity to submit comments. PPC appreciates the CAISO's goal of permitting LSEs' existing transmission and commercial arrangements to continue should regional expansion occur. This is a very important aspect of regional expansion. To accomplish that goal, we expect that the CAISO will propose revisions to its tariff that will allow the continued use of current transmission and commercial arrangements in expansion areas. The definition of "Existing Transmission Contracts (ETC) or Existing Contracts" is a key provision in section 40 and would need to change to accommodate the continued use of exiting transmission contract rights in demonstrating deliverability of imported resources in the resource adequacy process. Section 40.4.6.2.1 of the CAISO's tariff contains a provision for acknowledging and preserving ETC rights as part of its process for determining import capability available for an LSE for resource adequacy purposes. These rights are limited by definition to rights in existence on the CAISO Operations Date, which is March 31, 1998. This provision, of course, was not written with CAISO expansion in mind, but its application would significantly damage the ability of LSEs to continue existing commercial arrangements. We request that the CAISO include its plan to make such changes in the next version of the Straw Proposal. We also request that the ISO publish exactly how existing transmission and commercial arrangements will be "considered" in the MIC allocation process. CAISO should be explicit that parties to those transmission and commercial arrangements will be credited for the full reserved demand or MW value for PORs and PODs set out in the contracts and permitted to rely on those rights to demonstrate deliverability and qualification of capacity resources.	The ISO has previously already identified the need to set a new Pre-RA Commitments cut-off date in the previous RRA proposal and has recognized that new date would be necessary for entities in an expanded BAA footprint. Every year before MIC allocation process is started the LSEs are asked to fill in a template with all their ETC, TOR and Pre-RA Import Commitments in order to assure proper credit during the process.
	WPTF	WPTF understands the ISO is proposing consideration of a zonal system RA requirement if the import capability into a zone does not fully satisfy the zonal system RA needs. While this method may have some promise WPTF encourages the ISO to provide more information about the interaction between the current import capability allocation process (MIC) and the proposed zonal requirements. WPTF believes that some method of allocation process of import capability is still needed, and that following such an	The ISO has decided to forego creation of zonal RA requirements as described in this proposal.

Topic	Stakeholder	Question/Comment	ISO Response
		allocation it would be inappropriate to allocate the residual zonal need pro-rata with no consideration for the MIC allocation that was already obtained by an LSE. Consider the following example: two LSEs have equal shares of load in two zones, and one LSE requests and receives all its MIC for import into one zone, whereas the other LSE asks for and receives its MIC allocation split evenly between the two zones. If each zone had equal import capability and had equal residual needs, would it be appropriate to allocate the residual two each LSE 50/50? It would seem to make more sense to allocate the residual zonal requirement within a zone based at least somewhat on the relative shares of MIC. That is, while the LSE that split their MIC to deliver evenly to each of the two zones may be content to receive some residual requirement in each zone, the LSE that concentrated their MIC in one zone might expect to receive no residual zonal RA allocation to that zone for which they have a MIC allocation to deliver. If they also were allocated residual in both zones pro-rata then their MIC to the concentrated zone would be in a sense "wasted". In some fashion if the MIC is to be retained then the zonal requirement should be aligned with the MIC allocation. Alternatively, some method could be envisioned that would allocate the residual zonal requirement wherein LSEs may be able to express preferences for the zones in which they prefer to take the residual requirement. The goal should be to allow LSEs to the greatest extent possible the ability to align their RA service and their resource portfolio. A simple pro-rata allocation of the zonal requirement would not do so.	
	UAMPS	Before determining Maximum Import Capability or Internal RA Transfer Capability Constraints, a stakeholder process must be completed to convert the transmission rights on the PacifiCorp System from a contract path to a flow basis in order to identify currently held rights that will have to be recognized before any allocation process.	The ISO is currently in the process of identifying those contracts and conversions that would be necessary outside of this stakeholder initiative.

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	PAC	[…] PacifiCorp supports the ISO's proposal to allocate MIC based on different peak time periods. PacifiCorp continues to assess the ISO's current MIC calculation methodology and the impacts it would have on PacifiCorp's ability to meet its RA obligations using wholesale firm market purchases. In particular, PacifiCorp is evaluating the implications of the proposed zonal resource adequacy proposal and how that may impact MIC calculations. An additional element of the MIC the ISO needs to address is the potential use of MIC to import external resources that are pseudo-tied to the expanded regional ISO BAA. PacifiCorp uses third-party transmission to pseudo-tie several of its thermal, wind and hydro resources into its BAAs. Under the current tariff, these PacifiCorp-owned resources would be counted as external resources by the ISO and would require the use of allocated MIC to qualify for RA purposes. These external resources could not be substituted for internal resources if an internal resource went on forced outage during any given RA month. Similarly, PacifiCorp would also not be able to use bilateral transactions to meet its RA obligations for internal resource outages. This framework could cause barriers for regional expansion for entities like PacifiCorp, which operates a system that is non-contiguous and is interconnected to multiple third-party transmission systems and external markets. From a reliability perspective, it is unclear why a pseudo-tied resource, or a bilateral transaction, would not qualify as a substitute for an internal resource under the RA program. It would be helpful for PacifiCorp to better understand the ISO policies on internal versus external resources and the reliability implications of using a pseudo-tied resource or bilateral transaction as a substitute for an internal resource. Absent these considerations, PacifiCorp is concerned that incremental costs may be incurred to meet future RA obligations.	The ISO appreciates the comments in support of the MIC proposal. The ISO has considered the concerns raised by PacifiCorp related to the substitution of internal resources with external resources and has added a new item to the scope of the proposal intended to open a process for potentially revising these requirements to avoid barriers for new entrants and allow for substitution of internal resource with external resources, if the external resource is able to take on all of the associated obligations that the internal resource was meeting.
	Six Cities	The Six Cities generally support CAISO's proposal to apply the currently effective methodology for determining and allocating MIC at Scheduling Points between the outer boundaries of the expanded CAISO BAA and external BAAs, other than adjusting for circumstances where there are no	The ISO appreciates the comments in support of the proposal.

Topic	Stakeholder	Question/Comment	ISO Response
		simultaneous constraints […]. The Six Cities specifically support the principle that pre-RA commitments should be protected in […] MIC […].	
	SDG&E	[…] SDG&E believes that the ISO's current historically-based study is overly conservative in that it does not anticipate significant changes in loads, resources and operations which could result in greater MIC. Instead, as SDG&E has long-recommended, the MIC should be based on forward-looking power flow/stability studies. These studies would establish the MIC given anticipated changes in future loads, resources and operations; changes which could result in import levels and patterns which differ considerably from historical levels and patterns.	Currently, the ISO does conduct a forward looking MIC calculation for scheduling points/interties where state and federal policy goals required an increase from historical levels.
	SCE	SCE is concerned that the CAISO's current methodology to measure feasible maximum import capability (MIC) is no longer the best measure with an increasing amount of solar generation. The methodology needs to measure expected capability and availability. Per the straw proposal, the CASIO uses the highest import level when the peak load is within 90% of the annual peak. In the past, maximum imports were generally correlated with peak gross load and would be a good proxy. In the future, the current methodology may no longer be a good proxy for import capability. Currently, there can be up to 10,000 MW of simultaneous wind and solar during the day. This has a significant reduction to both CAISO generation and imports during the daytime hours. With a growing CA solar fleet, the current methodology to select the maximum imports when load is 90% of annual peak may no longer be the best measure of import capability. While this has been sufficient in the past, it should not be considered appropriate in the future as renewables is displacing imports. SCE recommends the CAISO look at imports during hours when net load is 90% of annual net load peak or another methodology to measure import capability. CAISO is proposing to calculate a MIC value for "each relevant simultaneously constrained part of the grid." Does this mean the proposed	The ISO is aware of the system peak shift issues and will monitor it in the future. Currently the ISO believes that the methodology still captures the highest imports at the correct hours of stressed system conditions. A change could be proposed if this issue becomes critical. For the "simultaneous constraint" comment please see the ISO response to BPA's question above.

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		RA zones described in the Internal RA Transfer (section 5.3.1) or does this use a different definition?	
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	We appreciate the response to our concerns in the revision. In particular, we appreciate CAISO's response to our request for analysis and for clarifying that existing contractual rights will be protected. With regard to the actual calculation of MIC for a Regional ISO, we remain unconvinced that the only change needed is a tweak to a note in the CAISO Reliability Requirements Business Practice Manual that would add a phrase to allow the use of non-simultaneous base case studies. Many commenters raised valid concerns that the current MIC calculation, which relies on two years of historical data may artificially limit import capacity, depending upon a variety of economic and weather-related factors. CAISO's response that the current method is sufficient because CAISO staff has flexibility in selecting data that has a sufficient level of MIC is not satisfying. This response does not address the underlying concern that relying on historical behavior does not adequately determine actual import capability, particularly as import patterns may change with an RSO, and it underscores the potentially arbitrary nature of deterministic approaches. We therefore urge CAISO as part of this initiative to develop a robust stochastic approach to the determination of MIC, in a parallel fashion to consideration of methods for developing probabilistically determined metrics for a reliability assessment more generally. There are very good reasons to start moving toward these methods: use of the grid is changing with the addition of clean energy resources, these changes are accelerating, and expansion of a regional system operation will change them even more. That is the desired result: change in the use of the grid that is more efficient, less	The ISO understands the request to develop a stochastic approach to determining MIC values. At this time, the ISO continues to believe that the current MIC calculation methodology will provide adequate levels of MIC required to meet the changing needs of the grid and a changing resource mix. The ISO has provided additional analysis of the PacifiCorp system MIC capability in this proposal and believes this will demonstrate that existing arrangements will be protected. The ISO also understands that there are very good reasons to use probabilistic assessments where appropriate and the ISO will monitor the need for revisiting the MIC methodology in the future but anticipates that the current method will be sufficient to set appropriate MIC values for interties in an expanded BAA.

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		environmentally damaging, and more reliable. Historically determined values and approaches will be less and less useful as grid changes accelerate. […]	
	SVP	SVP reiterates its prior comments that it is important to ensure that the MIC continue to allocate capacity based on existing contractual rights and commitments. SVP understands that the Revised Straw Proposal would only change one element of the Maximum Import Capability process, using regional peak loads rather than system peak load, and seeks confirmation that the change will not affect capacity allocations based on existing contracts and commitments.	No changes are envisioned regarding RA protection for existing ETC, TOR or Pre-RA Import Commitments.
	CMUA	CMUA's general observation is that the CAISO is wrestling with the appropriate issues associated with possible MIC methodology modifications. As we did when the current MIC allocation was developed, the municipal community supports preservation of existing arrangements and commercial expectations. As the CAISO notes, however, there are quite a few issues and additional empirical analysis still under development, including information on what MIC values would be for PacifiCorp branch groups and also the establishment of a Pre-RA Commitment Date. These were key issues that were addressed when the current MIC methodology was derived and agreed upon, and they must be addressed here also before any RA proposal can be considered complete.	The ISO agrees with the comments by CMUA.
	WPTF	[…] WPTF urges the CAISO to develop a method to allocation MIC or zonal requirements on a multiyear basis. The single year MIC allocation process impedes commercial contracting efficiency and should be designed out in any new regionally expanded RA design.	The ISO does not believe that it is essential at this time to explore with stakeholders making the MIC a multi-year element. The current MIC methodology can work for an expanded BAA. Multi-year MIC has been identified in the ISO Stakeholder Initiatives Catalog as a potential future stakeholder initiative and if there is broad support in the future to take that on then that could happen. As for zonal requirements,

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			as explained in this proposal, the ISO is no longer proposing a zonal requirement.
	SWPG	As part of the Regional RA design, SWPG strongly urges the ISO to determine a method for providing long term allocations of import capability and, if relevant, zonal requirements. Allocating the ability to import RA to meet RA needs on a year-by-year basis has been an impediment to an efficient bilateral market since the inception of the RA program. The CAISO has carried a multi-year MIC allocation process in its stakeholder catalog for several years and with a high ranking by stakeholders. It would be unfortunate if the ISO considers broad revisions to the RA program for a regional design without also adding a mechanism for multi-year certainty.	The ISO does not believe that it is essential at this time to explore with stakeholders making the MIC a multi-year element. The current MIC methodology can work for an expanded BAA. Multi-year MIC has been identified in the ISO Stakeholder Initiatives Catalog as a potential future stakeholder initiative and if there is broad support in the future to take that on then that could happen.
	UTC	The ISO identifies additional work it must perform to determine the Maximum Import Capability (MIC) on the multiple intertie points created by Pacific Power's proposal to become a participating transmission owner (PTO). The UTC recommends the ISO further extend its schedule and provide additional workshops. These workshops should be dedicated to the review and vetting of the use and results of its proposed MIC methodology. While the MIC methodology and its network modeling may have worked well in California, unique circumstances in the hydropower-based Pacific Northwest, such as the Northwest Power Pool (NWPP) reserve sharing agreement, require careful consideration of the application of the MIC methodology to ensure it meets the needs and concerns of areas beyond California. […] The UTC has strong concerns about the potential impact of this MIC proposal to the extent it may artificially restrict capacity that is available to import into the zones the ISO proposes to create in its Revised Straw Proposal. The ISO has identified one particular circumstance in which its current MIC methodology would artificially restrict capacity in zones that may lead to unnecessary increases in RA compliance costs. The UTC urges the ISO to	The ISO understands the UTC's request for additional time and workshops on MIC, the ISO will evaluate the need for such considerations in the future. The ISO believes the current MIC calculation proposal will allow for adequate levels of MIC in an expanded BAA. The ISO has identified new issues for consideration under the MIC allocation methodology as detailed in the proposal above. The ISO will take the necessary time to engage with all stakeholders and fully develop the MIC proposal.

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		take sufficient time to develop the MIC methodology, and as stated earlier, schedule additional workshops and engage fully with stakeholders in all affected Western states to minimize adverse consequences of the proposed MIC.	
3 **Internal Transfer Capability Constraints:** **Zonal RA**	BPA	In general, BPA would like to see more detail regarding the interaction between the MIC calculation and the Zonal RA construct. There is an intervening BA and Transmission Provider (Idaho Power Company) in between PAC's two BAs. While BPA serves public utility customers in both BAs, Federal generation is much closer to the PacifiCorp West BA. BPA would like to understand how the MIC calculation would play out in this type of situation. The Internal RA Transfer Capability proposal determines the Zonal Import Limit for PAC's BAs. The two components of this calculation are the MIC (discussed above) plus the "internal transfer limits" which is defined as "the total of any internal transfer limits into the specified zone." […] How is the "internal transfer limit" proposed to be calculated? In addition, what protections will be provided to ensure that existing users that must import capacity to the zone will be able to continue to count such capacity in the zonal RA? The MIC's 13-step process ensures that existing users of the interties will be able to continue to count capacity that was previously imported into the zone. Will a similar "13 step" process be used to allocate "internal transfer" capability between zones?	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	CPN	The CAISO's proposal to implement zonal RA procurement requirements seems generally reasonable. Important aspects of the proposal require clarification. In particular, Calpine requests additional detail on how the internal transfer limit components of zonal import limits would be determined. For example, MISO uses power flow modeling to determine capacity import and export limits (CILs and CELs) between zones with separate resource adequacy requirements. Does the CAISO envision a similar approach for California?	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

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		In addition, while Calpine is not necessarily opposed to netting, Calpine does not understand the need for CAISO administered netting. To the extent that individual LSEs' RA procurement does not match their zonal RA obligations, they can trade bilaterally to meet their zonal RA obligations.	
	MCE	On a conceptual level, MCE does not oppose the ISO's proposal to develop a zonal RA concept under which the ISO would establish RA zones, zonal import limits, and zonal RA requirements for each RA zone and the LSEs serving load in each of the defined RA zones. But it is essential that the ISO thoroughly consider the impact that a zonal RA approach could have on all different types of LSEs, including community choice aggregators. For instance, MCE is concerned that a zonal RA approach could put CCAs at a competitive disadvantage to the larger California Investor Owned Utilities ("IOUs"). CCAs cover a relatively-small geographic area and exist entirely within the boundaries of the larger IOUs. If a zonal RA approach allowed the IOUs access to cheaper RA capacity resources from a larger geographic area that could be used to meet the IOUs' RA requirements, CCAs with smaller footprints may not be able to access these same capacity resources. Assuming that RA resources in California will be more expensive than potential out-of-state RA options, CCAs such as MCE could unfairly be put at a competitive disadvantage if they are not able to access these out-of-state resources to meet their RA obligations. As the ISO continues to develop its zonal RA proposal, MCE recommends that the ISO continue to focus some of the fundamental requirements that underpin the RA market, including that LSEs must adhere to regional capacity boundaries and transmission constraints when contracting for RA and that RA value should be accounted for where the load is actually located. MCE looks forward to continuing to work with the ISO on these important issues.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	ICNU	In general, ICNU appreciates the ISO's openness to a zonal RA framework. While ICNU understands that a zonal framework represents a change relative to the existing ISO framework, it is generally of the opinion that a zonal RA	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO

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		framework is a better way to perform RA in a regional ISO. Zonal RA seems to be more consistent with a cost allocation framework based on sub-regional transmission segregation, such as that currently being evaluated in the Transmission Access Charge Options initiative process. Notwithstanding, ICNU generally recommends that the ISO and other regional stakeholders look to the zonal "stand-alone" RA framework that the Midcontinent Independent System Operator ("MISO") has developed over the past ten years or so. ICNU is concerned that the proposed zonal framework, including the use of netting credits, might diminish any protection that a zonal RA framework would otherwise provide to a new PTO. Finally, in moving to a zonal RA framework, ICNU recommends that the ISO consider maintaining the pre-existing Maximum Import Capability ("MIC") allocations within the California zone for existing load serving entities ("LSEs"). The existing allocation framework has been tailored largely in response to the specific needs and characteristics of the respective LSEs, and those considerations ought to be retained in a zonal RA framework. For example, a party that had pre-existing rights for imports counted towards MIC allocations in the ISO should continue to be credited with such a benefit within the zonal framework. […] ICNU recognizes that the RA rights of LSEs within the existing footprint also need to be preserved, if a regional market is to be implemented successfully. ICNU believes that it may be appropriate to retain the existing allocation and path counting methodologies for MIC RA between existing California LSEs in a zonal "stand-alone" framework. […] In order to address internal RA transfer capability constraints, ICNU supports the ISO's proposal to develop a zonal RA concept, rather than extending the current Path 26 method. ICNU appreciates the contemplation of zonal planning reserve margin ("PRM") targets within a zonal RA construct, as an alternative to merely establishing a single, system-wide PRM for a regional ISO. ICNU is also generally supportive of the establishment of two distinct PacifiCorp zones within a regional ISO, as a reflection of significantly distinct	has explained reasons for the change to this element in the proposal above.

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		factors between PAC West and PAC East sub-regions. Notwithstanding, ICNU is generally concerned about several aspects of the proposed framework, and believes that a "stand-alone" model, similar to what the MISO uses, may be a more appropriate template to design a zonal framework, rather than the seven-step process in the revised RA straw proposal. One of the problems with the seven-step zonal RA process is that internal RA transfers appear to be double-counting both step 3 and step 6. In step 3, for example, MIC is increased by the internal transfer limits into a specified zone. As a result of the netting credit in step 6 however, an LSE could potentially acquire additional RA from outside its specified zone, above and beyond the transmission limitations. This effectively double-counts the transmission constraint by allowing the LSE to acquire more RA from outside of its zone than the transmission system would otherwise allow. In addition, ICNU believes that the concept of a "netting" credit is problematic within a zonal framework. Basically, it allows a utility to acquire RA outside of its zone, without having to account for transmission needed to transfer the RA resource from one zone into another. Under a system of sub-regional transmission rates, an LSE should only be allowed to acquire a resource in another zone if it has acquired transmission capability in and from that zone. Thus, the use of netting credits would allow an LSE to access RA in other sub-regions without bearing the costs associated with those other sub-regions.	
	VEA	VEA is concerned about the zonal requirement design and offers these narrow initial comments herein to ensure the ISO gives particular consideration to the relationship between the import capability allocation ("MIC"), pre-existing rights of parties, and the determination of the RA requirement of a load serving entity ("LSE"). VEA urges the ISO, should it continue to consider a zonal RA requirement, to ensure that the zonal requirements are aligned with the import rights allocated through the MIC process, or any such similar process to which the	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

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		ISO proposes to transition. LSEs need to have the ability to continue to ensure that deliveries from their particular owned or contracted sources can serve their RA needs. If LSEs are allocated MIC but then are assigned a zonal RA requirement that exceeds (1) their overall RA requirement (2) less the RA that could be supported by their MIC allocation, then the ISO will be undermining the MIC allocation intent. VEA also urges the ISO to ensure that any party that had pre-existing rights for imports counted toward MIC allocations should be credited with such benefits in any zonal RA obligation determination. For example, VEA, in its FERC-approved Transition Plan, was granted rights to satisfy its RA obligations by importing up to 150 MWs of energy from Mead – the interconnection point to which VEA has longstanding contracts for energy delivery. VEA has counted on these imports to meet the bulk of its RA needs. If, in accordance with its regional RA proposed design, the ISO finds a residual zonal need and allocates a pro-rata share to VEA, and VEA is not allowed to meet the requirement through imports using its MIC capacity, the value of VEA's FERC-approved transition rights will be diminished. VEA encourages the ISO to consider alternative allocation schemes that may result in better alignment between the MIC and the residual zonal allocation. For example, the ISO could determine the gross (rather than net) zonal need, allocate it to LSEs, and allow those LSEs to satisfy the requirement through imports using MIC capacity as well as through in-area purchases. This would in effect allocate the residual need by prorating it inversely to the MIC capacity held by LSEs. In any event, the zonal requirement should not be blind to the MIC allocation various LSEs hold. VEA appreciates the ISO's further consideration of its zonal RA requirement design.	

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	PG&E	PG&E seeks to better understand the need for a Zonal RA requirement and asks the CAISO to provide empirical evidence showing a link between Zonal RA and NERC reliability requirements. PG&E requests that the CAISO provide justification for the proposed Zonal RA requirements. We would appreciate a stronger emphasis on the operational and reliability concerns the CAISO has identified that leads it to propose these requirements. PG&E recommends that, if the CAISO believes RA Zones to be necessary, the CAISO define a reliability-based detailed study process to determine boundaries of RA Zones and carry out this process to determine what Zonal RA requirements would exist under this study before seeking approval for it as part of this regional initiative. We are particularly skeptical of the need for RA Zones considering the complexity that these requirements would place on an already complex RA Program. Some of the complications arise based on whether RA Zones take on the issues that Local RA regions currently face. These include whether: 1) Demand Response resources must respond in a specific period of time to meet zonal contingencies 2) Initial Zonal RA requirements will be based on line ratings or expected flows during peaking periods. 3) Expected non-RA flows of resources external to the RA Zone but internal to the CAISO are counted as "netting" the Zonal RA requirement. 4) Zonal constraints are coincidental and how these impact RA Zone boundaries 5) Import counting criteria might need to be different for each of the RA Zones These are only some of the considerations which PG&E hopes to avoid by better understanding the drivers of the Zonal RA section of this proposal. By clearly identifying the reliability concerns associated with this section of the proposal, stakeholders will be more likely to be able to propose effective measures to address any real underlying reliability concerns that are not being addressed through the current RA framework. […]	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
	PG&E	[…] PG&E believes that it will be difficult to resolve […] [zonal] issues in a timely manner and that they may interfere with the CAISO's current goal of submitting its regional RA proposal to the CAISO Board of Governors by the end of August.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	ORA	[…] The ISO states that it will continue to build the new zonal concept in subsequent proposals; however, the current schedule only includes one more revised straw proposal ahead of a final proposal. This timeline does not allow for adequate development and sufficient stakeholder involvement. […]	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	NCPA	Zonal Resource Adequacy Requirements In general, NCPA does not object to the concept of a zonal resource adequacy process that is designed to ensure system capacity is properly distributed throughout the CAISO footprint to maintain reliable operations of the grid; provided, however, NCPA strongly believes that any proposed zonal design must ensure that LSEs are not negatively impacted simply due to where their load is currently served. The current CAISO proposal contains very little information about how the proposed zonal design would: 1) Avoid unfairly imposing costs on LSEs located in zones that lack sufficient RA resources, especially areas where it is unlikely that significant amounts of new renewable resources will be built 2) Avoid stranding RA assets, where an LSE in one RA zone might already have invested in owned or contracted RA generation in another zone, with no way to assure deliverability to the zone where its load is located; 3) Use netting to assist LSEs with these difficulties. Existing Transmission Constraints In some ways, a zonal design for RA is similar to the concept of Local RA already embedded in the CAISO Tariff. Under the local RA program, LSEs may purchase Local RA resources in any of the Local Zones, and those purchases are credited against the LSE's Local RA obligation, regardless of the Local RA zone in which the LSE load is located. The reason this	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

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		structure was adopted in the first place is that the transmission constraints that created the Local RA zones were not the result of economic investment decisions by load and resources responding to LMP price signals, but artifacts of the time when large utilities engaged in integrated resource planning under the authority of the CPUC. Decisions as to which resources to locate where, and which transmission upgrades to build, were made based on good utility practice and based on identifying the result that would afford customers the lowest overall cost of service (averaged across an LSE's entire rate base) even if that approach resulted in load pockets or clusters of generation. CAISO concluded, and FERC agreed, that it was better to spread the costs of Local RA procurement over all load in the CAISO BAA, because all load had benefited from the decisions that created transmission constrained load pockets in the first place. Transmission is not cheap to build and a zonal design under which LSEs are required to meet different system capacity PRM targets may create a direct and immediate disadvantage for those LSEs who are not able to resolve the applicable zonal constraint. For example, in most cases significant transmission infrastructure investments are required to reduce or eliminate zonal constraints. There are only a limited number of entities that have the authority or the capability to address such limits. Depending on how the zonal constraints may influence such entities' commercial position, they may or may not have a compelling reason to make the necessary investments to address the constraint. Nevertheless, load should not be punished for transmission investment decisions based on an earlier paradigm. Based on this, among other concerns held by NCPA, NCPA believes that each zone should have an equal system PRM target. Potential for Stranded RA Assets Any zonal design must also take into consideration historic procurement, so that existing resource commitments are not stranded due to program changes. The resource adequacy program has been in place for several years. Many LSEs have invested in generation ownership or long term bilateral contracts with resources to provide RA service. The program has	

Topic	Stakeholder	Question/Comment	ISO Response
		worked very well in part because LSEs have made such investments. While the resource adequacy program is ever evolving, each time the CAISO decides to make changes to the program, CAISO must be sensitive to how such changes may impact and/or strand long term investments. CAISO must give consideration to LSEs that may be located in one zone but that may have ownership or contract rights to RA resources in a separate zone. The proposed changes to the program must not result in stranded long term resource investments. Further, any zonal mechanism must address the issue of where RA generation capacity might be acquired in the future. For example, it is likely that a number of LSEs may be contemplating meeting their growing RPS obligations with solar facilities located in the south, and they will wish to use those resources to meet their RA obligations. If they cannot get those resources delivered across the constraint, that could adversely affect resource choice for LSEs located in zones with fewer or less economic renewable options. The result could be over-procurement and added costs for ratepayers. Netting Concept Must Be Fully Explained In response to questions during the stakeholder meeting, CAISO indicated that it was considering some sort of netting arrangement where LSEs with load in one zone and RA resources in another could somehow net those obligations to avoid over-procurement. However, CAISO offered few details as to how that program might work. It is possible that some zones will have more desirable resources than others, and NCPA fears that netting can only be a successful concept if there are desirable RA resources in all zones. Given the likelihood that new renewables will be built in specific areas (such as the desert for new solar), an equitable distribution of desirable resources may not be the case. The CAISO must provide substantially more information about its netting concept.	
	SCL	The Zonal RA concept is an interesting one that deserves additional development and detail. Seattle City Light encourages CAISO to fully develop	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO

Topic	Stakeholder	Question/Comment	ISO Response
		the proposal including how it will interact with all other aspects of regional resource adequacy. Additionally, CAISO should consider eliminating the planning distinction between constraints on Imports or Internal Transfers. Transmission constraints occur, and various planning efforts consider what actions, if any, are justified. These planning efforts eliminate the need for CAISO to make distinctions between internal and external constraints.	has explained reasons for the change to this element in the proposal above.
	XES	We request the ISO explain how it will treat an internal LSE that holds firm transmission rights to serve its zonal load from an external generator that is a designated network resource compared to the treatment of an LSE in the same zone that has no transmission service across the same intertie. […] CAISO has requested feedback on how the criteria and guidelines for creating the RA zones. We would reiterate our comments from above that CAISO should carve out external and internal designated network resources with associated firm delivery rights that are serving zonal loads. For an internal example, if today an RA generator in PACE is serving an LSE in the existing ISO, the firm transmission rights that make the PACE source deliverable as RA to the ISO should be carved out of the new internal RA transfer calculation once the ISO expands. By adding PACE to the ISO, the RA generator, with firm transmission rights to the load, should not be at risk for being stranded and unable to serve as RA (for its full amount) to the load simply because the ISO expanded and the generator and load are in different zones. This practice is consistent with the contract-path methodology used in the West and supporting analysis has already demonstrated that the generator is deliverable to that LSE through the transmission service evaluation. An additional study on transfer capability from the generator to a zone, to serve the load inside the zone, seems redundant and unnecessary. On a related issue of sufficient operating capability, if CAISO has concerns about contingency reserve deliverability in real-time, then it should perform a separate contingency reserve deliverability study, similar to what other RTOs	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
		have performed in order to establish general zonal resource procurement targets for ancillary services. In order to determine the RA zones, we recommend CAISO use an evaluation of expected sub-regional markets and not rely solely on geographic features or legacy Balancing Authority boundaries. The legacy boundaries do not necessarily represent the relevant electrical capability of the system. Also, similar to the MIC comments, Xcel requests CAISO provide examples of how the internal RA Transfers Capability constraints will affect the RA process and results.	
	CPUC	Although the details of zonal requirements have not been fleshed out, CPUC Staff have significant concerns over how zones would be implemented and whether such requirements are necessary for reliability. In particular, we oppose CAISO's proposal, which implies that the CPUC would no longer set the RA restrictions around North-South of Path 26. In Decision D.07-06-029, the CPUC adopted the Path 26 counting constraint as part of the resource adequacy (RA) program requirements applicable to our jurisdictional LSEs. The Path 26 counting constraint accounts for the limited transmission transfer capability across Path 26 and relies on information regarding existing contracts for its implementation. This is a purely intra-California issue, and so there is no reason why the CPUC's jurisdiction over this allocation should be removed due to an expanded balancing authority. In general, zonal RA requirements will add unnecessary complexity to an already complex RA program structure. A simpler alternative should be sought. For example, the same reliability benefits could be achieved for less cost if the CAISO were to evaluate portfolios when they are submitted in the year ahead, and work with the LRA or LSEs if it forecasts that the deliverability of resources within an LSEs portfolio is limited due to zonal constraints. Rather than institute an additional new Resource Adequacy product – the CAISO should conduct an assessment and work with the parties, LRAs, and LSEs to determine if further procurement is necessary and prudent to address zonal constraints. For California, this would mean that once annual filings are made for the RA year, CAISO can review the	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
		procurement of CPUC jurisdictional LSEs and inform the CPUC if they find that procurement would lead to potential problems due to the north-south path of 26 constraint. Then CPUC and CAISO can work together to determine if and how LSEs would need to alter their procurement. This is consistent with current practice.	
	CDWR	[…] CDWR has the following questions/comments with respect to the proposed […] [Zonal Import Limit] formula: • Would an internal transfer from one zone to another zone be considered an import under the proposed formula? CDWR is uncertain whether an internal transfer is supposed to be the same as an import. • Will the Zonal RA Requirement (ZRA) be based on zonal coincident peak load or BAA coincident peak load for an LSE? If based on zonal coincident peak, then will the ISO calculate coincident, peak factors for each zone for each LSE? If a single LSE has loads in various zones, will it be required to file separate requirements for each zone? Further, […] CDWR has the following questions/comments with respect to the proposed [Zonal RA] formula: • How is the Load share ratio calculated? Please provide details of calculation. • Who will create the zonal load forecast and how will such forecast be derived? Step 6 describes the process to establish LSE specific Netting Zonal Credit (NZC). The netting concept should include a scenario in which the same LSE may have load and resources in all zones (for example, CDWR has loads and resources in both north and south of path 26). A numerical example on how the values are calculated would be helpful in understanding the concept.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	ORA	[…] As noted on page 29 of the Revised Straw Proposal, "There are numerous considerations to discuss related to this zonal RA proposal." ORA agrees and encourages the continued development and refinement of this concept. […] As noted in the presentation materials on page 63, many stakeholders have requested data and specific results about MIC values under the proposed concept. More information must be provided by the ISO	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
		for stakeholders to understand and respond to ISO transfer constraint proposals. […] Creating a new zonal capacity category is a major change in the RA framework and the additional LSE requirements will add to ratepayer costs. A new capacity product involves many complex issues such as counting rules for zonal capacity, annual studies and the approval process for the study results, and allocation of zonal requirements. Even more complex may be the potential need for development of new zonal resources in a multi-state area. Stakeholders will need to know how zonal forecasting will be developed and how the costs of new resources will be assigned. These are important issues and raise significant cost implications. One additional iteration of the straw proposal does not allow adequate time for stakeholders to participate in development of a zonal concept and contemplate the impacts. ORA requests that the potential cost of zonal requirements be included in analysis of this new conceptual requirement.	
	LSA	Conduct further analysis to ensure that the proposed Zonal RRA structure would actually address the concerns raised by the earlier-proposed Path 26 methodology. […] CAISO indicated during the meeting discussion that it does not yet know whether the new approach might also impair current Path 26 counting rights and, if so, whether there should be some kind of transitional/grandfathering mechanism to mitigate or avoid that problem. In addition, PG&E and others expressed concerns that the new approach might not be any less complex than the prior one. LSA asks that CAISO provide further details (including examples) comparing the new approach to the prior one, to illustrate its concerns with the latter and demonstrate the benefits of the former.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	SWPG	The relationship between the current MIC process (especially if internal paths such as path 26 continue to be allocated current to how they are today) and the proposed zonal requirement is unclear. Said otherwise, a full MIC requirement would seem to constrain the imports to a zone so as to	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO

Topic	Stakeholder	Question/Comment	ISO Response
		effectively satisfy zonal requirements. If the ISO plans to modify the MIC process because of complexities under a regional market, we ask that further information about these modifications be made available. SWPG encourages the ISO to consider developing a zonal requirement methodology which allows LSEs to ensure that their out-of-state resources can satisfy their RA needs. Having a process that allocates MIC across the interties, and also allocates import capacity to meet zonal requirements (on a prorata basis) may result in a misalignment of the allocated MIC and the residual needs (e.g., the creation of a residual need even given a large MIC allocation to a zone) for an LSE. It would be beneficial for the ISO to consider a means by which an LSE can express a preference for satisfying how their system RA is counted while the ISO also ensures that zonal requirements are met.	has explained reasons for the change to this element in the proposal above.
	PAC	[…] without understanding how the zonal process would work, it is difficult for PacifiCorp to provide meaningful feedback to the ISO on how it would go about establishing the zones. The proposed RA zones and associated Zonal Import Limits would effectively establish separate MIC allocations for each of the two current PacifiCorp BAAs. PacifiCorp will need to further evaluate the potential impacts of this new approach and the limitations it would impose on using a resource in one zone to meet RA requirements in the other zone in which PacifiCorp operates. […] PacifiCorp is interconnected with multiple third party transmission owners, which has implications on how PacifiCorp's resources are counted towards RA. Additionally, if entities adjacent to or interconnected with PacifiCorp join the ISO, the PACW and PACE zones may no longer be appropriate delineations. Instead of creating additional RA zones, a reevaluation and redefinition of existing zones may be required. The current RA process at the ISO is a complex process. Adding a "zonal" layer to the requirement that has implications on the load forecast, planning reserve margin calculations, local capacity requirements, MIC allocations, etc. will add additional complexity and it is unclear what the reliability	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

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		improvement would be relative to the current process. Understanding the reliability implications, either improvement or lack of improvement, in its zonal RA proposal is needed. For example, the ISO has proposed a netting process, but has stated that this would be a "voluntary participation" in the zonal netting process. At this time, it is unclear what value proposition might lead an LSE to volunteer for the netting process? Further clarification is needed from the ISO on its Zonal RA process.	
	Six Cities	The discussion during the stakeholder meeting on April 21, 2016 identified a number of significant questions regarding the Zonal RA concept, including: • How netting of RA resources across internal constraints and allocation of related benefits will work, • How requirements for Flexible RA will be distributed among the RA Zones, • How Zonal RA requirements will affect MIC and the allocation of MIC, and • How Zonal RA requirements will affect potential implementation of backstop procurement. Information regarding these fundamental elements is necessary to support even a preliminary analysis of the likely impacts of the Zonal RA construct. Consequently, the Six Cities are unable to express any substantive position at this time regarding CAISO's proposal for Zonal RA requirements. […]	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	SDG&E	SDG&E believes the Zonal RA concept has some value in the expanded BAA. SDG&E requests the ISO to provide descriptive examples of the proposal and the interactions with other portions of the RA program such as outage replacement, cost allocation of backstop authority and existing Path-26 constraints. It is unclear to SDG&E whether System RA requirements are necessary if the ISO were to adopt Zonal RA requirements. The change to the zonal RA requirements from Path-26 constraints needs further development. Instead of limiting how much capacity LSEs may procure capacity in a location, ISO may be requiring LSEs to procure certain capacity in a specific location. While this concept seems to be similar to Local RA only on a larger scale, the	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
		new requirement may cause market power concerns. The ISO's zonal netting proposal may ultimately cause market participants to build resources within certain zones and not invest in transmission upgrades which would benefit multiple zones. It is also unclear to SDG&E if flexible RA requirements would need to be adjusted based on zonal coincident ramps. Would zonal constraints apply toward flexible capacity procurement? If flexible RA requirements are based on the maximum three hour ramp of the entire BAA, it would seem that flexible capacity should not be constrained. SDG&E requests the ISO to discuss how the zonal RA framework would fit on top of the RSI Phase 2 proposals for separating Local and System attributes. Adding another attribute on top of the current RA framework may create unintended consequences. Therefore, SDG&E would like the ISO to provide additional details in the next draft of its regional RA proposal and meeting.	
	SCE	The proposal introduces a zonal RA concept which introduces additional complexities and costs versus benefits that need to be evaluated. SCE cannot form an opinion of a Zonal RA construct until understanding the following issues. 1) How are RA Zones defined? The proposal does not provide detail on how RA Zones are defined. Is it based upon transmission constraints, the service area of Participating Transmission Owners with load, boundaries with neighboring balancing authorities, or agreements with other balancing authorities? For example, based upon PacifiCorp joining CAISO suggest four zones: PAC West, PAC East, North of Path 26, and South of Path 26. How were these zones determined for reliability purposes? Furthermore, what is the difference between the concept of a RA Zone and a Local Reliability Area? 2) How does GHG Compliance interact with Resource Adequacy?	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
		The current design of the Energy Imbalance Market includes a do not sell to California flag which will prevent that resource from serving load in California. The do not sell flag was included as an option for those entities that do not wish to comply with CA's cap and trade program, or for renewable resources that have a requirement to sell output to local jurisdiction customers. While the CAISO has not proposed a GHG methodology for the DA market under the integration of PacifiCorp, SCE is concerned about how a mechanism similar to the current EIM mechanism would work within the RA paradigm. Can any generation unit selecting the no not sell to CA flag provide system-wide RA? Would a unit selecting a do not sell to CA flag be limited to only providing RA to their local area or zone? In terms of replacement, if a unit offering system-wide RA no longer is available, can it be replaced by a unit using the do not sell to CA flag? These are just a few of the issues that need to be resolved with the interaction of the GHG compliance program and RA. The next proposal should address the relationship between Resource Adequacy and the GHG compliance mechanism. 3) Accounting for Internal RA Transfer Constraints SCE supports CAISO moving away from the original proposal to use the Path 26 methodology to account for intra-BAA transfer constraints. However, as CAISO notes in their presentation, there are numerous details that need to be discussed and developed for the new zonal RA concept. SCE specifically has comments on the concept of netting benefits between resources across a constraint.	

Topic	Stakeholder	Question/Comment	ISO Response
		The CAISO needs to clarify if netting will be done on a monthly or annual basis. SCE believes monthly netting makes the most sense at this time because it matches the length of final monthly RA showings, but there are additional details that need to be developed. The timeline and process for netting during monthly showings will need to be developed to make sure it is feasible. Additionally, the netting process for annual showings, if it will exist, needs to be defined including a description of if and how it will translate to monthly showings. While SCE can imagine there being benefits to having the netting process be voluntary, SCE does have some concerns since it could artificially constrain the resources that are available to meet zonal RA requirements. If a resource is procured and shown for RA within a certain zone, but not volunteered for netting, will the CAISO assume that the resources can't meet load within that zone? If this is the case, LSEs/LRAs within the zone will need to procure more resources than are actually needed to meet load within the zone. Finally, SCE requests that CAISO clarify replacement obligations for resources depending on their location and if they were considered a netting benefits resource.	
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	[…] In our previous comments, we: (1) supported ensuring that any constraints that could potentially limit the transfer of RA resource between major internal areas of the ISO be identified and accurately recognized in RA determinations; (2) requested that CAISO identify paths where constraints will arise in a footprint that initially incudes CAISO and PacifiCorp; (3) observed that since all RSO participants would be allocated room on all contested lines on a pro rata load ratio share, any individual RSO participant may or may not have sufficient capacity on any one line to access their RA resources; and (4) requested that the Revised Proposal explicate the allocation and its impacts more fully using examples.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
		It appears, at least initially, that the zonal approach addresses the issues we previously raised. However, consideration of the approach raises additional questions regarding internal limitations, their determination, and their impact on zonal RA requirements. For the next revision please provide examples of how the "total of any internal transfer limits" is determined. Please explain how the approach would blend with determination of MIC using probabilistic methods. […] We will further evaluate this approach in the next revision.	
	SVP	It appears that the newly-proposed zonal methodology may be better than applying the existing Path 26 methodology to all internal interfaces. However, the proposal outlined in the Revised Straw Proposal is conceptual and before SVP can properly assess the potential effects of the new zonal methodology, the CAISO must provide significantly more information on how the zones, the zonal PRM targets, and internal transfer limits would be developed or established – as well as how the proposed "netting credits" would be defined and calculated. Also, as stated by NCPA in its comments on the Revised Straw Proposal, it is necessary to understand how the zonal design would avoid unfairly imposing costs on LSEs, avoid stranding RA assets and use netting to assist LSEs in these efforts. […] It is important that LSEs' existing qualifying RA resources do not lose their applicability/countability under the CAISO's proposed zonal methodology. Existing RA resources located outside of an LSE's native load zone(s) must continue to count toward meeting system, local and flexible RA requirements as they do today. LSEs should not be harmed by zonal changes rendering existing useable RA resources less useable solely due to a move toward regionalization.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.

Topic	Stakeholder	Question/Comment	ISO Response
	CMUA	The CAISO's introduction of the Zonal RA Proposal appears to be a major policy shift, and one that requires considerable additional attention and discussion. At first blush, the establishment of zones raises the question about whether this new requirement would cut into the potential value of creating the larger and diversified BAA footprint. It would appear to subject CMUA members to new obligations within the current CAISO BAA footprint. It may concentrate generation capacity ownership artificially beyond the high concentrations already existing in certain of the proposed Zones. Further, it is unclear why the CAISO has concluded that these Zones would be fixed and not subject revision as the system topology changes, which would potentially undermine the reason for the Zonal RA Proposal. Moreover, the CAISO does not provide much detail on why it has selected a load-ratio share methodology for assigning Zonal RA requirements. In short, this Proposal requires quite a bit more detail and discussion.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
	UTC	The UTC supports the ISO's move toward a zonal approach for addressing RA transfer capability constraints recognizing, however, that a zonal approach is not without pitfalls. The development of a zonal method will entail extensive effort in both design and network modeling capability. The UTC encourages the ISO to develop a transparent and collaborative process for the development of the zonal approach with a sufficient procedural timeline to evaluate the zonal model's operation and results prior to any presentation to the ISO Board.	The ISO has decided to forego the creation of zonal RA requirements at this time. The ISO has explained reasons for the change to this element in the proposal above.
4	ICNU	ICNU is generally concerned about the ISO's proposal, to the extent that it would supersede the authority of the states to perform inter-jurisdictional cost allocation for ratemaking purposes. While the ISO appears to indicate that it would oversee allocation of RA requirements to the states only if the respective LRAs make such an election, it is unclear whether the ISO's new authority would be used to allocate RA requirements among states of a multi-jurisdictional utility. Accordingly, allocation of RA requirements to LRAs and LSEs may implicate significant jurisdictional concerns.	The ISO does not believe that its proposal would supersede the stats authority to perform ratemaking cost allocation decision. If there are significant jurisdictional concerns that remain after review of the ISOs latest proposal on this element the ISO encourages ICNU to explain in more detail what aspects of the proposal cause those concerns.

Topic	Stakeholder	Question/Comment	ISO Response
Allocating RA Requirements to LSEs/LRAs	AWEA, Interwest Energy Alliance, Renewable Northwest [*Joint Comments*]	AWEA and Interwest encourage the ISO to actively seek input from the state regulatory agencies on the proposal for the ISO to directly allocate RA requirements to LSEs. While AWEA and Interwest understand that the ISO is attempting to address instances where a multi-jurisdictional LSE is overseen by multiple state regulatory agencies or where a regulatory agency does not which to allocate RA requirements, the ISO should ensure that this proposal adequately addresses any concerns the state and local regulatory agencies may have. It will be especially crucial to ensure this proposal adequately addresses concerns from state regulatory agencies in the PacifiCorp states.	The ISO appreciates the comments on this aspect of the proposal and agrees that the concerns of jurisdictional entities should be adequately addressed.
	XES	Xcel supports the ISO proposal to create a mechanism where LRAs or state agencies could voluntarily elect to defer allocation of RA requirements to the ISO.	The ISO appreciates the comments in support of this element of the proposal.
	CDWR	The ISO proposes to create a new mechanism for LRAs and state agencies to defer allocation of RA requirements to the ISO so the ISO can directly allocate RA requirements to LSEs. CDWR believes that this is a reasonable approach.	The ISO appreciates the comments in support of this element of the proposal.
	PAC	PacifiCorp supported this recommendation in its comments on the ISO Straw Proposal, but also raised the issue of how the ISO would allocate its requirements with multi-state utilities. The ISO agreed that a multi-jurisdictional utility would be problematic for them, since they cannot identify the local, flexible and now zonal requirements on a jurisdictional basis, however, it did not change its initial proposal. PacifiCorp would like additional clarification from the ISO on how a “multi-jurisdictional LSE” will be treated differently than a single state LSE, either inside or outside the state of California.	The ISO has provided additional detail on this aspect of the proposal.
	Six Cities	[…] the determination and quantification of RA requirements allocated among LRAs and LSEs must be based on consistent rules applied throughout the expanded BAA.	The ISO agrees with the comment.

Topic	Stakeholder	Question/Comment	ISO Response
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	[…] We continue to support the proposal to allow allocation of local and flexible capacity requirements either directly to load serving entities or to their local regulatory authority for reallocation to the load serving entities in their jurisdiction.	The ISO appreciates the supportive comments.
	CMUA	Subject to seeing the details of implementation of this approach, CMUA does not oppose this concept of elective direct submission of requirements to LSEs.	The ISO appreciates the comments in support of this element of the proposal.
	UTC	The UTC does not oppose the ISO's proposal to allow state commissions and LRAs the option to defer allocation of RA requirements to the ISO so it can directly allocate RA requirements to LSEs. The UTC understands this option may accommodate different practices of LRAs and states agencies. Although it does not oppose the proposed option, the UTC reserves judgement on the ISO's proposal to bypass state commissions and LRAs by allocating all system zonal, local, and flexibility RA requirements directly to multi-jurisdictional LSEs. However, the Revised Straw Proposal provides only a few sentences on the concept. The UTC encourages the ISO to explain how it intends to implement this conceptual approach at its workshops and how such an approach would affect jurisdictional roles.	The ISO has provided additional detail on this element in this proposal.
5	ICNU	Revising certain California-specific terminology in the ISO tariff seems appropriate for purposes of establishing a regional ISO.	The ISO appreciates the comments in support of this element of the proposal.
	XES	Tariff language should be broad enough to address the potential for additional LSEs outside of the state and for non-jurisdictional entities.	The ISO agrees and appreciates the comments in support of this intent of the proposal.

Topic	Stakeholder	Question/Comment	ISO Response
Updating ISO Tariff Language to be More Generic	ORA	A regional RA tariff would require revised tariff language that applies to other entities and is not specific to California. The process to revise the current ISO tariff should allow for stakeholder input on the final tariff language in advance of submittal to the Federal Energy Regulatory Commission (FERC), including provisions limiting the operation of the new tariff until the occurrence of the appropriate triggering event (such as PacifiCorp's approval of the Memorandum of Understanding).	The ISO's tariff revisions process will allow opportunity for stakeholder input. The effectiveness of the revisions are discussed in the effective date section of the ISO's proposal contain within the introduction.
	PAC	PacifiCorp continues to support this recommendation, as it is important for any ISO tariff revisions to accommodate participating entities that operate in states in addition to California and necessarily outside of the exclusive jurisdiction of the CPUC.	The ISO appreciates the comments in support of this element of the proposal.
	SCE	SCE supports making the tariff more generic and less California centric.	The ISO appreciates the comments in support of this element of the proposal.
	PAC	PacifiCorp continues to believe it is important that the California Independent System Operator's (ISO) tariff be structured to enable load serving entities (LSEs) that participate in an expanded regional organization to continue their use of existing resource planning practices with minimal disruption and that the local regulatory authorities (LRAs) of LSEs maintain their role in establishing resource planning guidelines and processes.	The ISO's Regional RA proposal is structured to enable LSEs that participate in an expanded regional organization to continue their existing resource planning and procurement practices and that the LRAs of LSEs maintain their role in establishing resource planning guidelines and processes.
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	[…] We continue to support the proposal to update tariff provisions to make language more generic.	The ISO appreciates the comments in support of this element of the proposal.

Topic	Stakeholder	Question/Comment	ISO Response
	CMUA	CMUA urges the CAISO to exercise discretion and make changes only when necessary or the need truly compelling. We look forward to reviewing actual Tariff language changes at the appropriate time.	The ISO agrees with the comment and appreciates the need for stakeholder review of tariff revisions.
6 **Reliability Assessment** (Generally)	CPN	Calpine generally supports the CAISO's proposal to perform a reliability assessment in order to prevent undue leaning of an LSE or LRA on other LSEs or LRAs to assure reliability.	The ISO appreciates the comments in support of this element of the proposal.
	CDWR	CDWR continues to oppose CAISO's proposal to establish generic PRMs and Resource Counting Criteria rather than deferring to those established by the LRAs. The current system has worked well for ten years.	The ISO understands CDWR's opposition, but the historical adequacy of the current process does not translate into an automatic adequacy in the future and the ISO believes that these revisions are necessary for the reasons outlined in previous proposals.
	NIPPC	NIPPC supports the proposal to consider system, zonal and local resource adequacy requirements.	The ISO appreciates the comments in support of this element of the proposal.
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	In our initial comments, we supported the proposal to conduct a reliability assessment using common metrics. We also supported the ISO retaining backstop procurement authority in the event that insufficient capacity has been secured. We continue to support these elements of an overall proposal to transform the CAISO into a Regional ISO. However, we also recognize that linking a reliability assessment to backstop procurement authority does shift some authority, in effect if not in intention, from local regulatory authorities and state commissions to the ISO, particularly over the longer-run. Therefore, we believe the technical rigor and transparency of the ISO processes will be important considerations to public utility commissions in their regulatory proceedings to come, and the methods selected through these processes must be broadly viewed as providing sufficient reliability and fairness in treatment across the ISO. The use of probabilistic methods best achieves these criteria. While deterministic approaches are faster to develop and implement, these	The ISO appreciates the comments in support of this element of the proposal. The ISO also appreciates the thoughtful suggestions on alternative approaches that could be considered give the timeframe that the proposal has been developed under. The ISO will consider the need for these suggested approaches and the need for additional time as necessary.

Topic	Stakeholder	Question/Comment	ISO Response
		methods tend to have arbitrary components, and local regulatory authorities and state commission may be less willing to allow their authority to be diminished if the method selected has arbitrary elements that are not technically supportable, particularly on issues on which they have already ruled. We therefore believe it is vital that probabilistic metric development move forward as quickly as possible while remaining accessible to the many stakeholders across the region that could be affected. However, achieving technical rigor and garnering broad support in the timeframe allotted to the current initiative could become a challenge. If it does, we believe the solution is to use a placeholder approach for the determination of certain metrics in parallel with the development of probabilistic metrics. Specifically, if, rigorous methods with sufficient detail cannot be developed in time for the FERC tariff filing, we encourage CAISO to propose a reliability assessment that initially uses the PRM and capacity counting conventions that are currently used in LSE planning processes with a clear plan to transition to probabilistic metrics as quickly as possible. This approach is consistent with our recommendation regarding the development of a probabilistic approach to determining MIC.	
	SVP	SVP shares NCPA's stated concerns (in its comments in response to the initial issues paper, the first straw proposal, and the Revised Straw Proposal) that the CAISO's proposal will infringe on Local Regulatory Authority control over planning reserve margin and resource counting methodologies for their jurisdictional load serving entities. Because the existing system has functioned well and there is no indication of a need to change, SVP does not support the methodologies proposed. […]	The ISO understands the comments in oppositions but believes there is a need to develop reliability assessment provisions for the reasons outlined in previous proposals.

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6(a) **Reliability Assessment:** **PRM**	BPA	• Has the CAISO considered using monthly PRM values? It may not be prudent to assume that the same amount of reserves are needed in May as are needed in August or December based on unusual weather events and forced outage rates. This is especially true when the supply stack shifts due to water conditions throughout the year. A growing hydro stack pushes thermal units off the margin, effectively expanding supply and limiting the impact of forced outages. Flexible Capacity is calculated on a monthly basis, and BPA recommends that PRM be calculated on a monthly basis as well. For instance, requiring PAC to carry over 1,000 additional MWs of PRM for an 8,000 MW load seems high by industry standards. • The ISO uses Operating Reserves Requirements in its Building Block example, but more broadly, how are ancillary services rights treated in the PRM? Also, does the CAISO tariff transfer ancillary services obligations from the PTO to the load under the PRM of the RA Standard?	The ISO has only indicated an intent to develop a probabilistic approach to determining PRM levels. This concept will need to consider if monthly variations to PRM are needed for the reasons suggested by BPA but the ISO has not yet determined if that is necessary or appropriate at this time. The ISO is not proposing to move forward with a deterministic PRM approach at this time.
	CPN	The revised straw proposal includes two different approaches to establishing PRMs for the reliability assessment, a "probabilistic" approach based on an LOLE analysis and a "deterministic" approach based on traditional rules of thumb. Based on recent analysis in other markets, the two approaches seem to yield roughly similar results. LOLE studies for MISO and ERCOT suggest that PRMs slightly below the PRMs based on traditional rules of thumb are sufficient to meet a typical reliability standard, such as 1-in-10. In addition, the ERCOT analysis demonstrates that the reliability and other benefits of a PRM relative to the cost of procuring capacity to meet the PRM is relatively flat over a range of PRMs, i.e., the specific choice of PRM may not matter much as long as it is in an acceptable range.	The ISO appreciates the comments and has considered these issues in the proposal.
	ICNU	As noted, ICNU supports the proposal to develop zonal PRMs within a larger zonal RA construct. In prior comments, ICNU had expressed concern with the potential rate impacts on customers of PacifiCorp and other potential new PTOs resulting from a single, melded PRM for a regional ISO. For example, ICNU noted that PacifiCorp has recently operated under a PRM level that is considerably less than what the ISO uses—possibly resulting in around $400	The ISO is no longer proposing to develop zonal RA requirements, as described in this proposal above, and thus will not be establishing zonal PRM targets.

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		million of additional costs to PacifiCorp customers, if PacifiCorp were required to operate under the much higher PRM of the ISO. […] In establishing zonal PRM targets, ICNU would support the continued use of mechanisms currently used by LSEs and LRAs. Doing so would be in accordance with the original "key principle" advanced by the ISO, i.e., designing a modified RA structure "that will allow state regulatory commissions and load service entities to continue their existing procurement programs." […] For instance, PacifiCorp's 2015 Integrated Resource Plan uses a 13% PRM which, as ICNU has commented in public processes, is itself likely too high. Moreover, ICNU pointed out in prior comments that the use of a lower PRM within new PacifiCorp sub-regions should not result in the receipt of any incremental capacity from the existing ISO sub-region, due to transmission constraints—thereby mooting "leaning" concerns from stakeholders within the existing ISO. […] To the extent that a regional ISO must develop PRM targets independently, ICNU generally recommends the use of a probabilistic option presented in the revised RA straw proposal. ICNU generally takes the position that Loss of Load Expectation ("LOLE") days/year is an appropriate measurement. ICNU has not determined the appropriate target for such a study (e.g., 1-day-in-10 years or 1-in-5). However, ICNU agrees that such a methodology could be controversial, as it would be based on any number of different inputs and modelling assumptions. Accordingly, an important aspect of such an approach would be to develop a transparent model, where the model is accessible to stakeholders and the inputs are well understood.	
	AWEA, Interwest Energy Alliance, Renewable Northwest	The more detailed discussions around how this methodology will be conducted will be critical. The Joint Commenters look forward to future discussions and urges the ISO to continue to pursue RA methodologies that capture the benefits of regional expansion and allow reduced RA requirements to be realized, while maintaining the high level of system reliability.	The ISO appreciates the comments on this aspect of the proposal, the details of the proposed probabilistic study are provided at a high level and will be further developed, the also ISO intends to provide a more detailed description of how a LOLE study would be performed in subsequent proposals.

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	[*Joint Comments*]		
	PG&E	PG&E recommends that the CAISO propose a probabilistic […] (PRM) structure. While PG&E appreciates the simplicity that a deterministic PRM could create, we believe that a planning reserve margin is sufficiently important to require at least an initial study to assess the relative reliability change associated with a new BAA joining the CAISO. While a consistent PRM has benefits in long term planning, the CAISO should look to maintain the balance between accuracy and consistency. PG&E urges the CAISO to also conduct a PRM study when an external BAA decides to join the existing BAA. PG&E believes this study should occur before the integration of BAAs in order to properly understand the impacts of the integration on reliability. […]	The ISO appreciates the comments in support of this element of the proposal and agrees with PG&E's recommendation which is reflected in this proposal. The ISO agrees with PG&E's suggestion on the timing of a PRM study.
	SCL	Seattle City Light encourages CAISO to move towards using a probabilistic loss of load study as the basis for establishing the PRM. A probabilistic study utilizes more available data than the status quo, and provides a more comprehensive planning model. Such a study raises new questions, particularly what probability to use as a threshold. The status quo does not and cannot answer this question although the risk remains present. Only the probabilistic approach can begin to identify the sources of uncertainty, and over time will allow utilities to reduce or manage that risk.	The ISO appreciates the comments in support of this element of the proposal and agrees with SCL's recommendation.
	XES	[…] ISO/RTOs can be used to gain efficiencies in the RA process via the calculation of aggregated sufficiency margins and overseeing compliance. We believe that the appropriate mechanism to establish an RA margin for a combined region is through use of an LOLE analysis, which is the technique used in SPP and MISO. We are concerned that the deterministic method, which seems to be preferred by CAISO, would not result in sufficient diversity benefits to the RA margin and would leave potential efficiency improvements unrealized for the expanded region.	The ISO appreciates the comments in support of this element of the proposal and agrees with Xcel's recommendation.

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		[…] Xcel supports the use of an LOLE calculation under the consolidated footprint. This method is an industry best practice used in other regions and it has generally reduced RA margin criteria, while preserving the reliability of the system. We have concerns about the use of a deterministic approach because it may not result in the most efficient reduction in the applicable RA margin criteria.	
	CDWR	An LSE may use demand response resources such as participating load for RA. The demand that is acting as a supply resource and that is bid into the CAISO market for RA compliance should not be subject to PRM. For example, an LSE uses 20 MW demand as participating load to provide RA out of its total demand of 100MW. Assuming PRM of 115%, the LSE's RA obligation should be, (100-20) x 1.15 plus 20 MW supply from participating load = (100-20) x1.15+20 = 112MW supply RA showing. In this case the LSE's effective PRM will be 112% instead of 115%. In this example, the LSE did not exclude 20 MW demand from total of 100 MW in RA demand forecast. Validation of LSE's RA plan in this case would have to be made against the effective PRM of 112% for that month. No reserve should be required for a resource providing reserve. The ISO offers two options to calculate planning reserve margin (PRM). It is not clear to CDWR that a new methodology for calculating PRM is a necessary element of a Regional RA plan, which is supposed to include "musts" for regional expansion. However, if CAISO wishes to continue to explore the comparative effects of a Loss of Load Expectation (LOLE) based probabilistic method and a simple deterministic method, CDWR believes that the ISO should run some studies comparing both methods, if possible, to see results prior to making a decision on adopting a particular option.	The ISO believes that the question of how demand modifying resources should be treated under RA obligations should be considered in the load forecasting working group that the ISO is conducting after this proposal is presented to stakeholders and the ISO will explore how this situation should be treated in regards to establishing RA obligations for LSEs utilizing DR resources however the ISO does not have a detailed proposal on that issue at this time. The ISO believes that it is necessary to determine a PRM target for the system in an expanded BAA and has decided that a probabilistic approach is the most accurate and appropriate method to utilize.
	CLECA	The Revised Regional RA Straw Proposal considers the use of a deterministic Planning Reserve Margin (PRM) versus a probabilistic PRM. This raises some questions: First, can the CAISO complete probabilistic analyses in a timely manner? This question is posed respectfully and informed by the difficulties experienced by SCE and CPUC staff in terms of performing such studies. One option may be to start with	The ISO has described how the timing of a probabilistic PRM assessment would need to be conducted in the proposal. The ISO appreciates the suggested transitional

Topic	Stakeholder	Question/Comment	ISO Response
		deterministic analysis and then switch over – would this be possible? What would be consequence of that switching? If the analysis has to exclude all non-firm imports and exports, what impact does this have? Since it is expected that California will increase its exports of renewables, is that exclusion a reasonable assumption? These questions should be addressed in the stakeholder process and in the next revision of the straw proposal.	mechanism but does not believe that is necessary at this time. The reason that non-firm exports are excluded from the PRM study is due to the fact that non-firm exports would be curtailed in any reliability situations so those exports should not be a reduction to the pool of available resources studied in a PRM analysis.
	NCPA	NCPA supports use of a deterministic approach for developing the planning reserve margin. NCPA does not support us of a probabilistic approach at this time. As CAISO describes in its revised straw proposal, a probabilistic approach relies heavily on the use of random variables and assumptions (each of which may have a material impact on the output of the analysis). As is the case with any modeling exercise, the output of the model is only as good as the assumptions that are input into the model, and NCPA fears that a probabilistic approach will make the search for the perfect the enemy of the good. The probabilistic model appears to substantially increase complexity and potential expense, with no guarantee of improved outcomes. The existing resource adequacy program, which is based on a deterministic type approach, has worked very well for many years. Especially in light of the CAISO's intent "to only change those tariff provisions that require modification to make RA work in the context of an expanded BAA," CAISO has presented no compelling evidence to justify why a more complex, less transparent process would be more appropriate than the existing approach that has worked well. The goal should be to keep the methodologies as simple as possible, consistent with acceptable outcomes.	The ISO believes that a probabilistic study is the correct direction to proceed based upon the evidence of its use as a best practice in many other regions and the fact that it is a robust evaluation that can account for the variable nature of the electric system, which is not possible using a deterministic approach. The ISO disagrees that there is no guarantee of improved outcomes through the use of a probabilistic assessment, this approach is more accurate than a deterministic approach that does not consider future uncertainty or probability of random events that may occur on the electric system which his possible through a probabilistic approach. The ISO disagrees with the comment that the goal should be simplicity. The ISO believes that the goal should be accuracy backed by justifiable supporting evidence, and these appropriate goals are achieved through the use of a probabilistic assessment.

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	NIPPC	NIPPC encourages the ISO to adopt - in the near term - a simplified deterministic Planning Reserve Margin calculation. For the purposes of exploring regional expansion of the ISO footprint, NIPPC believes a straightforward transparent deterministic calculation is superior to a more complex probabilistic mechanism. As states and stakeholders consider net benefit assessment studies it will be valuable to have the individual components as transparent as possible to simplify efforts of third parties to duplicate the results and perform sensitivity studies. This stakeholder process is not the appropriate mechanism to explore improvements to the ISO's existing processes. To the maximum extent possible, the ISO should continue to use existing processes in order to contain costs associated with expanding the ISO footprint.	The ISO believes that a probabilistic study is the correct direction to proceed based upon the evidence of its use as a best practice in many other regions and the fact that it is a robust evaluation that can account for the variable nature of the electric system, which is not possible using a deterministic approach. The ISO believes that this stakeholder process is the correct place to establish a PRM methodology and that it is appropriate to determine a system wide PRM level for the proposed reliability assessment.
	ORA	The ISO requests stakeholder feedback on two possible methods of determining a planning reserve margin (PRM). ORA favors an approach that balances reliability with ratepayer costs. The CPUC has stated that it does not support reliability at all costs and in the CPUC's Long-term Procurement Planning proceeding probabilistic modeling is being developed to report on Loss of Load Event (LOLE) and Expected Unserved Energy (EUE) which can more accurately assess reliability and allow for consideration of costs. Clearly, the probabilistic approach is far more complex than a deterministic approach and for year-ahead RA procurement, a hybrid or simplified approach may be more practical. Much more discussion and interactions with stakeholders should occur to arrive at a minimal PRM that provides an acceptable level of reliability.	The ISO appreciates ORA's comments on PRM and will continue the dialogue with stakeholders in developing the appropriate LOLE criterion which is the driver for the PRM target that would be established under a probabilistic assessment.
	WPTF	WPTF supports the consideration of a loss of load expectation (LOLE) type criteria for setting the RA requirements. Such a method would likely more accurately reflect the resources and resource mix needed to support the grid. An LOLE methodology may also be more robust to sub-regional differences in that a consistent methodology could be adopted that may produce different results depending on the region to which the methodology is applied. WPTF recognizes that there may be an increased effort to establish and implement	The ISO appreciates the comments on the PRM method and agrees with WPTF's recommendation to utilize a probabilistic approach.

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		such a methodology, and that it may require a somewhat higher level of effort to apply each cycle even once implemented. Because of this WPTF may be supportive of an initial deployment of a Regional RA requirement based on a fixed planning reserve margin followed soon thereafter by a transition to an LOLE-based methodology.	
	UAMPS	After the stakeholder process identified in our response to Topic 2 is complete and zones are identified based on a flow-based study, UAMPS would recommend that a simplistic/deterministic zonal approach could be initially used to determine PRM for regional integration. In approximately 3 to 5 years, after enough zonal information is gathered, the PRM calculation should change to a probabilistic zonal LOLE approach.	The ISO appreciates the comments but is no longer proposing to develop zonal RA requirements so there will not be separate zonal PRMs established.
	PAC	[…] PacifiCorp understands the need to establish a minimum PRM for an expanded BAA as a means to ensure reliable operation. PacifiCorp further supports developing a minimum PRM through a transparent stakeholder process; however, PacifiCorp recommends the ISO consider adopting some basic principles that will define the scope of this effort. One of these principles should be a commitment to establish a PRM that considers the incremental cost of achieving incremental improvements in reliability. A cost criterion was not proposed in the ISO's revised Straw Proposal. In developing this analysis, the ISO should identify the types of reliability measures it will report and use to inform selection of a PRM level (i.e., expected unserved energy, loss of load hours, loss of load events, etc.), the types of uncertainties the method will consider (i.e., unforced outages, load, generation from variable energy resources, hydro generation levels, etc.), and how it will develop resource portfolios for different PRM levels. Further, it is not clear whether minimum PRM levels will be established for each month, or whether a single PRM level will be calculated for a given year and applied to all months. In addition, it will be important to understand how costs associated with a PRM may disproportionately affect each LSE within the ISO BAA depending on the contribution to coincident system peak and further, the "zonal PRM" may have additional cost implications.	The ISO has provided additional detail on the proposed study process that will need to occur prior to new PTOs joining the ISO BAA. The ISO appreciates the questions and comments on the PRM proposal and has attempted to address as many issues as possible in the PRM section of the proposal. The ISO understands the concern about regulatory treatment of capacity procurement and believes that the ISO proposal minimizes the risks of that outcome through the utilization of a probabilistic PRM method that will have analytical basis that justifies the resulting PRM target and associated procurement levels.

Topic	Stakeholder	Question/Comment	ISO Response
		If the ISO establishes a planning reserve margin that creates a "shortfall" for an LSE that is inconsistent with the direction that it has received from its LRA, the LSE could be placed in the position of having to procure additional capacity that may not receive positive regulatory treatment for cost recovery.	
	Six Cities	The Six Cities agree that CAISO must develop a system PRM for the purpose of conducting reliability assessments and, if a Zonal RA approach is adopted, determine zonal PRMs for the purpose of establishing Zonal RA requirements. As a preliminary matter, the Six Cities recommend further detailed consideration of a probabilistic method (e.g., LOLE) for determining PRM. The discussion at page 31 of the Revised Straw Proposal suggests that a probabilistic approach is likely to produce more accurate and equitable results than a deterministic approach. Although the Revised Straw Proposal expresses concern that a probabilistic method will require assembly of substantial data, it appears that most, if not all, of the required data, as described at page 33 of the Revised Straw Proposal, will be developed and/or collected anyway for other purposes, such as transmission planning or resource availability assessment.	The ISO appreciates the comments in support of this element of the proposal. The ISO agrees with the Six Cities comment that most of the required data inputs for a LOLE study are most likely readily available for the majority of inputs and the ISO believes that developing the models and inputs required would not be a barrier to completion of the study.
	SDG&E	SDG&E supports a probabilistic LOLE study approach to calculating the PRM.	The ISO appreciates the comments in support of this element of the proposal.
	SCE	The zonal approach creates a new set of issues that must be evaluated and have the costs versus benefits considered. The proposal needs additional detail on how the zonal PRM will be implemented and if there are limitations on the amount of resources that are eligible to be counted outside a zone. Because of resource diversity, the system PRM will be lower than zonal PRM values. For example, consider a winter peak zone and a summer peak zone. Under this arrangement, there are resources in each zone that can help serve the other zone's peak, therefore the system PRM will be lower than the zones' PRM. Yet, if they are not allowed to share resources, then additional capacity must be purchased. This implementation will reduce the benefits of regional expansion as parties have to contract additional resources based upon regional PRM values. There is a difficult balance that needs to be	The ISO is no longer proposing zonal RA requirements nor zonal PRMs. The ISO greatly appreciates the additional information regarding the additional information provided on the history of the PRM methodology and determination under the CPUC's proceedings. The ISO proposes to utilize a probabilistic method due to the benefits of that approach versus a deterministic method. The ISO's initial proposal is in concurrence with SCE's

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		resolved to allow resource sharing, but not to the point where one region is paying for the reliability of another region. It is not clear that the zonal PRM concept best achieves that balance. In terms of methodology to calculate a PRM, the CAISO is seeking feedback on using a stochastic or deterministic methodology. The currently CPUC adopted value of 15-17% was based upon stochastic models from the 2002-2004 period. In 2008, the CPUC opened an Order Instituting Rulemaking to investigate if the PRM should be revised. The proceeding was closed in 2010, without changing the PRM value or methodology. During the workshops of the proceeding, one of the issues discussed was the impact of renewables and whether they change the PRM. To answer this question, SCE performed a PRM analysis looking at stochastic renewables and load which a conclusion of a PRM of 16% to achieve one outage in 10 years. The analysis over the last 15 years shows that PRM is rather stable and does not substantially change from year to year. As the system grows larger, the stability will increase since no one resource or LSE's load will change the PRM result. Because of the stability of PRM over time, the costly complexity of calculating a PRM using stochastic methods, and the CAISO deterministic method likely producing similar results to the stochastic methods, therefore, SCE supports using the simpler approach. This will reduce costs for the CAISO as well as stakeholders that have to review the CAISO methodology and results. In addition, SCE recommends the PRM values not be established annually, but evaluated periodically such as when new transmission owner join or some other system change that would reviewing the reasonableness of the PRM. The periodic use of stochastic method can be used to validate that the simple approach continues to function properly. The CAISO needs to provide more detail on the implication of the PRMs by zone. Would each zones LSE's have different procurement obligations or would there be some form of weighted averages to get a single system PRM that applies to all LSEs?	suggestion that the study only need be conducted periodically, potentially being refreshed when new PTOs join the ISO BAA and not on an annual basis.

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	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	For all of the reliability-related reasons identified in the Revised Proposal as well as for the reasons discussed above, we support the development of a Loss of Load Expectation method for determining PRM. Its use allows zones to have differing PRMs while achieving an equivalent level of reliability. In addition, it lends itself to developing a probabilistic assessment of MIC. We encourage CAISO to move forward with its development as quickly as possible.	The ISO has decided to forego development of zonal RA requirements at this time for the reasons detailed in the proposal above.
	XES	Xcel supports the use of an LOLE calculation under the consolidated footprint. This method is an industry best practice used in other regions and it has generally reduced RA margin criteria, while preserving the reliability of the system. We have concerns about the use of a deterministic approach because it may not result in the most efficient reduction in the applicable RA margin criteria.	The ISO appreciates Xcel's comment on the use of an LOLE methodology and agrees with the recommendation which is reflected in the ISO's proposal.
	SVP	SVP understands CAISO's proposal to indicate that using a new methodology - the probabilistic LOLE study - and changing from the simplified deterministic PRM calculation might create greater levels of accuracy in developing the planning reserve margin targets for purposes of assessing system reliability under LSE and LRA procurement programs. SVP observes that the LOLE appears to be a more complicated method that would be difficult for market participants to replicate, resulting in a less transparent process. Given that the West appears to currently be experiencing a resource surplus (and with forecasts for this situation to continue for some time), transitioning to a full LOLE methodology may be addressing a problem that we do not currently have, and the added complexity may not be justified under the circumstances. If a LOLE based methodology is to be further considered, and given the CAISO's expressed concern about its increased level of detail and analysis, it would be helpful if the CAISO could develop an example, from data for a select prior period, using both the LOLE and the simplified deterministic PRM	The ISO believes that a probabilistic study is the correct direction to proceed based upon the evidence of its use as a best practice in many other regions and the fact that it is a robust evaluation that can account for the variable nature of the electric system, which is not possible using a deterministic approach. The ISO disagrees that there is no guarantee of improved outcomes through the use of a probabilistic assessment, this approach is more accurate than a deterministic approach that does not consider future uncertainty or probability of random events that may occur on the electric system which is possible through a probabilistic approach. The ISO believes that it is not feasible to conduct an example LOLE study for

Topic	Stakeholder	Question/Comment	ISO Response
		methodologies. The stakeholders could review the results to analyze whether the better planning capabilities justify the increased complexity of analysis.	stakeholder comparison, the nature of the analysis requires detailed modeling that would not be timely.
	UTC	The ISO requests feedback on two alternatives for determining the planning reserve margin (PRM): a deterministic PRM approach or a probabilistic PRM approach using a loss of load expectation model (LOLE). The UTC strongly prefers the use of a probabilistic approach such as the LOLE. The UTC recognizes the LOLE approach is more complicated and will take the ISO longer to develop. The Commission believes a probabilistic method will result in a more accurate assessment of the resources needed for a given level of reliability, which in turn will likely lead to a lower cost system. Further, probabilistic approaches are or are becoming the industry standard outside of California. As the Revised Straw Proposal states, PJM, ISO-NE, NYISO, MISO, and IESO all use an LOLE approach. In addition, utilities and agencies in the Pacific Northwest use or are developing probabilistic approaches to PRM. Pacific Power uses three probabilistic methods to evaluate its PRM: Expected Unserved Energy (EUE), Loss of Load Hours (LOLH), and LOLE. The Northwest Power and Conservation Council (the Power Council) uses a Loss of Load Probability (LOLP) approach in its resource adequacy assessment of the Pacific Northwest region and is considering the use of EUE and LOLE methodologies. Puget Sound Energy (PSE) has adopted the Power Council's LOLP approach and is working to identify the best application of the EUE approach. We believe that the evidence is clear, both in the Pacific Northwest and in other regions, that the use of a probabilistic approach is becoming a standard method. Accordingly, the Commission believes that the ISO should	The ISO appreciates the comments in support of the LOLE probabilistic analysis for determining a PRM target. The ISO agrees with the recommendation of the Washington UTC and is proposing to develop a LOLE study approach. The ISO also agrees with the observations of the Washington UTC that a probabilistic approach to setting PRM levels is clearly considered an industry best practice and has the benefit of accuracy to support that status.

Topic	Stakeholder	Question/Comment	ISO Response
		adopt a probabilistic approach to achieve least-cost planning in developing a PRM throughout the regional ISO.	
6(b) **Reliability Assessment:** **Uniform Counting Methodologies**	BPA	The Revised Straw Proposal lists a number of methods for assessing the capacity value of resources that can be applied to the ISO reliability needs. […] The methods all presume the purchaser owns the resource supplying the RA capacity. How are power sales contracts or WSPP agreements that do not list specific resources treated? Can these be counted toward the RA value? If not, why not? While BPA supports maintaining uniform counting methodologies for resources, using historical data to determine the capacity of a run of river hydro project may have some complications. The Straw Proposal calls for the use of a rolling three-year average for these projects, but the capacity of run of river hydro is determined by the amount of precipitation during a given year, which varies significantly from one year to another. To have more stable capacity numbers for run of river hydro, it would probably be prudent to use a larger historical data set.	The proposed counting methods are applicable to resource types regardless of those resources ownership. The ISO intends that contracts sourcing from resources within the ISO BAA would be subject the counting rules for the respective resource types. In this example by BPA the ISO assumes that BPA is referring to external resources as the sourcing for the mentioned contractual arrangements. The ISO has a non-resource-specific system resource designation that can be used for external systems of resource such as BPA's hydro system. This proposal has opened a dialogue on what type of external resource should qualify as RA resources in which the ISO will explore these issues further. The ISO understands that run of the river hydro resources depend on the amount of precipitation during a given year. The ISO will consider using a larger data set for this methodology.
	CPN	Calpine strongly supports the use of ELCC to determine the capacity counting of renewables in the reliability assessment. The exceedance methodology fails to capture saturation effects associated with increasing penetrations of a specific renewable generating technology, e.g., it does not capture the fact that for a system with a modest amount of solar generation, solar output may occur in peak loads hours which are also the hours of highest system stress, but as solar generation fills early afternoon hours, the	The ISO understands Calpine's concerns with the exceedance methodology. The ISO is proposing to use the exceedance methodology with the purpose of enabling the ISO to establish a counting methodology that has been established and potentially transitioning to a methodology such as the ELCC at a later time.

Topic	Stakeholder	Question/Comment	ISO Response
		hours of highest system stress shift to the late afternoon and early evening hours, when solar generation is lower and contributes less to reliability. Further, given that the CPUC is transitioning to the use of ELCC to determine the capacity value of wind and solar, as required by California law, for its RA program, it would make little sense for the CAISO to continue to rely on the outdated and inaccurate exceedance methodology in its reliability assessment. In addition to undermining reliability directly by failing to account for wind and solar correctly in its reliability assessment, CAISO reliance on exceedance might lead to RA resource shuffling, i.e., it could encourage LRAs other than the CPUC to adopt the more generous solar and wind counting of the exceedance approach. CPUC jurisdictional LSEs could then sell the RA associated with their wind and solar resources to LSEs subject to the regulation of other LRAs in return for resources that are more favored by CPUC counting rules, further undermining reliability across an expanded CAISO BAA.	
	ICNU	The revised RA straw proposal does not particularly address concerns previously expressed in regard to the potential loss of LRA authority in establishing the capacity contribution of renewable resources. […] Nonetheless, if uniform counting methodologies are to be adopted for use in a regional ISO, ICNU is not opposed to the continued use of the Exceedance Methodology for wind and solar resources. While the Effective Load Carrying Capability ("ELCC") is generally a more rigorous methodology, ICNU does not believe that the use of the Exceedance Methodology is necessarily less accurate than a properly performed ELCC calculation. […] If an ELCC method is to be used, it is important to recognize that the ELCC methodology can be implemented in many different ways. Accordingly, there are four considerations that ICNU recommends be reflected in the ELCC calculations. First, similar to how thermal resource outages are modeled stochastically in a Monte Carlo reliability study, the generation profile of the wind and solar resources should be modeled as a stochastic variable in the	The ISO is not proposing to eliminate the ability of LRAs to develop their own resource counting methodologies for developing their RA and procurement programs. However, establishing consistent counting rules that the ISO would use for ISO resource adequacy showings and the reliability assessment will mitigate concerns about over-counting resources by an entity, which can result in leaning on other entities. The ISO appreciates ICNU's comments regarding ELCC and will take the listed factors into consideration in future stakeholder processes as necessary. But as stated in the paper, the ISO will establish an exceedance

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		reliability studies underlying the ELCC calculations. Second, the reliability metric used in the ELCC calculation should be based on a LOLE days/year, which is a measurement of the expected number of days per year with a loss of load event. Third, because the RA framework typically assigns a 100% capacity contribution to thermal resources—despite having an ELCC of less than 100%—the ELCC of a renewable resource should be compared to the ELCC of a thermal resource to determine the capacity contribution of the renewable resource. Fourth, diversity benefits associated with a portfolio of renewables should be reflected in the ELCC calculations. […]	methodology with a future stakeholder process to transition to a new methodology if it is appropriate to do so at a later time.
	AWEA, Interwest Energy Alliance, Renewable Northwest [*Joint Comments*]	The Joint Commenters strongly support the ISO's proposed approach to develop a consistent resource counting approach to determine the amount capacity that each resource could qualify for in the ISO's reliability assessments. The ISO's proposal to develop consistent resource counting methodologies, while still allowing individual LSEs to continue their own procurement practices, supports reliability and allows for states to maintain appropriate jurisdiction over resource procurement decisions. As the regional RA framework moves into subsequent phases, we look forward to future discussion on the specifics of the ISO's proposed counting methodology. We are encouraged that the ISO's Straw Proposal recognizes that the Effective Load Carrying Capability (ELCC) approach should be considered. The ELCC approach has been widely adopted due to the accuracy with which it reflects the contribution of a resource to the supply capacity adequacy needs in a Balancing Authority Area. The Joint Commenters recommend that the ELCC calculation, or whatever method is ultimately adopted, should be updated following an expansion of the ISO footprint, to properly account for the impact of geographic diversity in electricity supply and demand on the capacity value contribution of all resources. This is particularly important for variable renewable resources, which see significant increases in their capacity value contribution over larger balancing areas due to the geographic diversity of their output.	The ISO appreciates the agreement to the approach for uniform counting methodologies. In regards to the ELCC methodology, the ISO has proposed the exceedance methodology for wind and solar resources with the understanding that a future stakeholder process will be held in assessing the ELCC methodology.

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	PG&E	The CAISO should take this initiative as an opportunity to provide a justification for why a resource type has a unique counting criterion. PG&E appreciates the clearly outlined counting methodologies of the various resource types the CAISO currently has within its footprint. PG&E has a preference for using a Pmax test for RA counting criteria, wherever possible, to simplify the RA program. While PG&E recognizes that resource types have unique characteristics, the CAISO should take this initiative as an opportunity to provide a justification for why a resource type has a unique counting criterion. We believe this detail will be valuable for external BAAs to understand why their resources might be counted differently from what their existing process might currently use. Furthermore, PG&E would like to understand why the CAISO proposes an option for Storage resources that is called a four hour test but appears to be relatively similar to a Pmax test. Please provide details on how this four hour test is different than a Pmax test and, if so, why storage requires a different test than other resources. If there is a need for a four hour test, why don't other resources also have this requirement?	The ISO appreciates PG&E's comments regarding simplification of the counting methodologies. The ISO will strive to provide justification for the various counting methodologies proposed. Storage resources will be tested based on a four hour sustained output which is consistent with the CPUC's revised staff proposal in 2014 that stated, "RA resources must be able to operate for four or more consecutive hours…" The ISO understands that conventional generators are only held to a one hour Pmax test but the main difference that must be considered here is that storage resources are limited in its ability to provide a sustained output because it has to recharge why more conventional resources have fuel supplies that do not necessitate recharging periods which justifies the difference in treatment between these resource counting methods.
	SCL	Seattle City Light is heavily reliant on cascading hydroelectric resources to serve load. How hydro could be "counted" is of utmost import. The distinction between storage and run-of-river is not always meaningful or consistently defined. Seattle uses hydro studies with differing terms; sometimes the lowest observed flows for a period of record, sometimes forecast flows based on historic flows. Seattle City Light encourages CAISO to allow LSEs to provide justification for establishing hydro capacity rather than using a prescriptive three year period.	The ISO appreciates SCL's comments regarding hydroelectric resources and although the ISO has proposed a historical methodology. The ISO notes that California and the current ISO BAA rely heavily on hydrological sources for electric generation as well and the historical method has proved adequate and reasonable. The ISO will look into possible alternatives in the future if these methodologies prove problematic through

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			additional experience when utilized in an expanded BAA.
	CPUC	The current proposals for the "reliability assessment" and establishing RA capacity counting methodologies shifts the division of roles between the CAISO and LRA, specifically, the CPUC, in setting RA values through the qualifying capacity methodology. These roles are specified in §380 of the CA Public Utilities Code, and are currently given deference in CAISO's tariff, which imposes capacity counting methodologies through "default provisions" only when the LRA fails to adopt its own. Furthermore, the proposal is unnecessary: there is no practical reason why the CAISO cannot conduct a "reliability assessment" that defers to the existing counting methods established and adopted by CPUC decisions, and in some cases mandated by California law. Because the current proposal is inconsistent with the statutory requirements, the CPUC Staff cannot support it. Also, the CAISO's proposal continues to ignore the fact that California law mandates the use of ELCC for determining wind and solar RA values. The proposal states that CAISO will consider the exceedance method vs. ELCC. This could put CAISO's counting methods in direct conflict with the ELCC method, which will certainly be adopted by the time CAISO would expand to a regional BAA (2018 or later).	The ISO is not proposing to eliminate the ability of LRAs to develop their own resource counting methodologies for developing their RA and procurement programs. However, establishing consistent counting rules that the ISO would use for ISO resource adequacy showings and the reliability assessment will mitigate concerns about over-counting resources by an entity, which can result in leaning on other entities. The ISO has previously stated the significant reason for proposing uniform counting methodologies for an expanded BAA and reiterates that it is necessary to do so in order to avoid capacity leaning created by certain entities overvaluing their resources through counting methods. All other regional entities that have RA programs have established uniform counting methodologies. The ISO does not believe that the proposed methods are inconsistent with statutory requirements and encourages the CPUC to provide feedback on methods in order to help the ISO build consensus on this important issue. If the CPUC believes that there is not issues related to having different counting methods across a regional footprint the ISO encourages the CPUC to explain how the ISO would

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			otherwise avoid the potential for capacity leaning due to the utilization of differing counting methodologies. The ISO is proposing to transition from the exceedance methodology to an alternative methodology such as the ELCC and has states that it is observing the discussion in the CPUC proceeding which will inform the eventual transition. The ISO does not believe that his proposal is in conflict with any statutory requirements. The ISO will hold future stakeholder processes in order refresh counting methodologies as needed by situations as described in the CPUC comment.
	CDWR	The Revised Straw Proposal now requires the use of uniform counting criteria, rather than the LRA specific criteria for RA showings as well as for ISO's reliability assessment - a major shift from the straw proposal and the current program embodied in the CAISO Tariff. This means that LRA's criteria would be ineffective in RA showings for LRAs if the LRA's criteria do not match CAISO's uniform counting criteria. It is not clear what the continued value of LRA counting criteria would be. CAISO Regional Resource Adequacy Initiative. With regard to participating load counting criteria as proposed, CDWR believes any historical trend based approach will not fit CDWR's participating load resources. Currently, CDWR's Participating Load Agreement (PLA) with CAISO allows using these resources for RA by providing non-spin ancillary service capacity in the day-ahead market and offering an energy bid to curtail load in real time for a day-ahead non-spin award with a contingency flag. The most feasible capacity valuation method would be to use the criteria in which CAISO certifies non-spin capability for a participating load resource and may perform tests on certification. Currently, CDWR uses non-spin certified capacity for RA, and CDWR believes that such criteria should be adopted as	The ISO has addressed CDWR's concerns and to the extent possible at this time in the ISO proposal and will remain consistent with the use of uniform counting methodologies. The ISO is not proposing to eliminate the ability of LRAs to develop their own resource counting methodologies for developing their RA and procurement programs. However, establishing consistent counting rules that the ISO would use for ISO resource adequacy showings and the reliability assessment will mitigate concerns about over-counting resources by an entity, which can result in leaning on other entities.

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		the default criteria. Further, to the extent the ISO develops a real time load bidding mechanism for a participating load, and if the load curtailment can be made higher than the non-spin capacity, then criteria should be the higher of the curtailment capability or the non-spin certified capacity. This method could be used for the registered capacity option under the counting criteria.	
	CLECA	CLECA continues to support in concept the use of consistent counting methodologies and backstop procurement if LSE resources prove to be inadequate, with an allocation to the LSEs that are short. However, as noted in prior comments, there have been misalignments between the CAISO and the CPUC on counting of preferred resources. CLECA's position remains that counting methodologies MUST be collaboratively developed with the LRAs, and be consistent with statutory requirements. The Revised Regional RA Straw Proposal references the use of PMAX for thermal and nuclear and PMAX for hydro plus historical. Does this imply perfect capacity? Table 6 shows that PJM and MISO use GE-MARS; this is a model used by the CAISO when the CPUC previously reviewed the PRM, around 2008. CLECA recalls that the results produced then by this model were highly controversial and that CPUC did not rely upon the model's results then. Has the GE-MARS model been improved? What kind of numbers has this model produced for the current CASIO BAA? The Revised Regional RA Straw Proposal also refers to Public Utilities Code section 399.26(d), which requires the CPUC to use effective load carrying capacity (ELCC) methodology for determining the capacity of wind and solar resources for resource adequacy purposes. The statute states: In order to maintain electric service reliability and to minimize the construction of fossil fuel electrical generation capacity to support the integration of intermittent renewable electrical generation into the electrical grid, by July 1, 2011, the commission shall determine the effective load carrying capacity of wind and solar energy resources on the California electrical grid. The commission shall use those effective load carrying capacity values in establishing the contribution	The ISO appreciates CLECA's comments in support of the uniform counting methods proposal. The ISO agrees with the statement that the counting methodologies be collaboratively developed with the LRAs, and be consistent with statutory requirements and intends to ensure this is the case. This stakeholder process is an open and transparent process for which LRAs are able to provide input on the development of these counting methods. The ISO has proposed to use the exceedance methodology for wind and solar resources and exploring a transition to an ELCC methodology. The ISO does not understand the connection between the Pmax counting method and the comment on perfect capacity of the PRM study method and would request that CLECA clarify the intent of the comment. For PDR/RDRR resources, the ISO is proposing the registered capacity value. The proposal for a class average was mistakenly added onto the table and was not an ISO proposed methodology.

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		of wind and solar energy resources toward meeting the resource adequacy requirements established pursuant to Section 380.12 While the Revised Regional RA Straw Proposal references ELCC and this statutory section, it makes no commitment to using ELCC, despite the Legislature's plain intent that it be used. CLECA acknowledges the obvious difficulties in developing this methodology, and indeed has recommended against premature use of an insufficiently-developed ELCC methodology. Regardless, the next iteration of the Revised Regional RA Straw Proposal should be clear on whether or not it will use the ELCC methodology, as mandated in California state law, once it is fully developed and ready for use. The Revised Regional RA Straw Proposal also includes two options for uniform counting of storage resources integrated as NGRs: a four-hour test or the registered capacity value. It appears both would rely on a test for sustained output for four hours, the difference being who is conducting the test, the CAISO or the SC. For PDR, RDRR and participating load, in the text of the proposal, two counting options are proposed: either the historical method (using a three- year rolling average of demand reductions during the Availability Assessment Hours or compliance tests) or a registered capacity value (similar to the NGR option with a test of sustained output for four hours). It is not clear how relevant a three-year rolling average would be to DR resources that are newly in the CAISO's markets or that are changing over time. Furthermore, Table 7 lists a third counting option for demand response: "Class Average". What does this Class Average option mean? It is not discussed at all. More detail is needed on this third option for demand response. Additionally, the performance criteria are "currently under development"; stakeholders need to know what these are proposed to be to evaluate the proposal.	The ISO has provided additional detail on the testing and validation for the registered capacity value counting method.

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	NCPA	In the current resource adequacy reporting process LSEs are required to submit a filing to the CAISO that lists the resources each LSE is claiming as resource adequacy capacity. The current resource adequacy demonstration template includes multiple tabs that are used to identify different types of resources that are proposed to be used by the LSE to satisfy its requirement. For example, there is a tab marked 'Resources', in which resources associated with a specific Resource ID are accounted for. There is also a tab marked as 'Other' in which several other, less common, resource types used for compliance are listed. The uniform counting methodologies discussed in the revised straw proposal are associated with those resource types that would generally be identified in the 'Resources' tab of the demonstration template. As part of its proposal, is the CAISO contemplating retaining the ability for LSEs to claim capacity from less common resources types that have usually been listed under the 'Other' tab of the resource adequacy demonstration template? For example, many of the demand response programs that are used by LSEs for resource adequacy compliance are reported in the 'Other' tab. NCPA supports retaining flexibility for LSEs to claim capacity from less common resource types, as has generally been accomplished through the use of the 'Other' tab in the current reporting process.	The ISO does not intend to remove the ability for "other" types of resource to be used for RA showings but will need to further evaluate if there should be defined counting methods or other established guidelines for these categories of resources.
	SDG&E	In Option 2, the ISO proposes that "… scheduling coordinators for resources submit the NGR's self-determined capacity factor, which should be based on sustainable output for four hours and the ISO will accept the value." SDG&E questions the appropriateness of allowing DSM programs to self-certify RA capacity. It is not clear to SDG&E how this option will work and what steps the ISO will take to ensure the accuracy of a self-determined capacity factor. SDG&E requests the ISO to provide additional information on this option.	The ISO believes that it appropriate to allow for DSM programs that wish to register as supply resource and to utilize a registered capacity value. The ISO has explained the proposed enforcement, and testing provisions in the proposal's counting rules section.
	NIPPC	NIPPC supports the use of pMax for thermal resources. NIPPC supports the the use of Effective Load Carrying Capability for wind and solar resources. NIPPC does not believe pMax is appropriate for hydro resources; depending upon water conditions, hydro resources may not be able to provide pMax for	The ISO appreciates NIPPC's comments and has taken them into consideration in the policy development process. The ISO is proposing to use the exceedance method for wind and solar resources exploring a transition mechanism for

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		extended periods of time. NIPPC suggests the resource adequacy metric of all hydro resources should be based on their historic availability. For new technologies, storage, and demand response resources the ISO should use a registered capacity value to determine the Resource Adequacy contribution. Many of these resources will not have a three year history of operations. Other resources with an operating history may not have been deployed to their full technical capability over that time.	moving to an ELCC method in the future. The ISO agrees with the recommendation on the use of a registered capacity value method.
	ORA	In Section 5.6.4 of the Revised Straw Proposal, the ISO calls for uniform counting methodologies. The ISO calls for these counting methodologies to be determined in "a transparent and open stakeholder process." ORA recognizes the need for consistent counting methodologies but recommends that counting methodologies be determined by the LRAs in conjunction with the ISO. Rather than an ISO initiative process, a representative body of the LRAs should lead the effort to determine counting methodologies. The CPUC has worked diligently to create counting methodologies that best reflect the contributions of renewable resources, demand response, energy storage, and energy efficiency and support the state's policy goals. LRA leadership in counting methodologies can best support the current successful structure developed in California. Alternatively, if counting methodologies are developed in ISO stakeholder processes, ORA requests detailed information on the proposed methodologies. The stakeholder initiative process as utilized by the ISO must be clearly described in written protocols. In addition, ORA recommends that the ISO clearly articulate its policy regarding confidential comments to all stakeholders. ORA recommends that the ISO post redacted versions of confidential comments, similar to the process that the CPUC uses, to allow parties to see the non-confidential portions of otherwise confidential documents. Stakeholder feedback is requested on page 37 of the Revised Straw Proposal regarding the methodology for calculating wind and solar capacity. ORA supports development of the Effective Load Carrying Capability (ELCC)	The ISO appreciates ORA's comments on the determination of counting methodologies in conjunction with LRAs and will take this recommendation into consideration. The ISO has proposed that PDR/RDRR will utilize a registered capacity value method which allows a great deal of flexibility for resource owners. The ISO's stakeholder processes have been established and described in detail as available on the ISO's public website. The ISO does not generally receive confidential comments but appreciates the recommendation by the ORA. The ISO is proposing to use the exceedance method for wind and solar resources exploring a transition mechanism for moving to an ELCC method in the future. The ISO has described the proposal for the DR counting method in further detail and understands the ORA's comment on the financial implication regarding recovery of

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		as mandated by the California Legislature. The ELCC methodology offers the best analysis of the true capacity benefits of wind and solar in support of reliability. These resources are expected to expand rapidly. Their capacity values will change significantly with increased penetration. The current exceedance methodology uses historical values and fails to account for variability. This methodology will become increasingly inaccurate in future years. The ISO provides two alternative methodologies for counting Demand Response (DR), using historical information or the registered capacity value. The ISO should clarify whether the DR provider gets to choose which option to use, or if the ISO chooses, or if the ISO will automatically use the higher or lower of the two options. It is not clear if the adoption of different RA values in the regional RA framework will override the current CPUC methods of valuation for DR. Additionally, the ISO proposed methods include provisions for tests and audits that will allow for lowering the Net Qualifying Capacity (NQC) value for the following month if the resource doesn't perform. This would need to be reconciled at the CPUC to ensure that the financial consequences apply to the DR providers or investor-owned utilities' shareholders, not ratepayers.	costs and states simply that the financial treatment of any related cost recovery continues to be the purview of the LSE's jurisdictional agencies, not the ISO.
	LSA	The Proposal describes two solar/wind RA counting methodologies that could be used in the proposed RISO reliability assessment – Exceedance and Electric Load Carrying Capacity (ELCC). LSA supports the use of uniform counting methodologies in the RISO reliability assessment and urges the CAISO to continue to rely on the Exceedance methodology at this time for that assessment. First, as the CAISO stated in the Straw Proposal, the Exceedance methodology – which has been developed and refined over many years – has worked well and continues to do so. It is simple and already widely used throughout the current CAISO footprint. Second, as LSA stated in its comments on the Straw Proposal, the CPUC's ELCC methodology is simply not sufficiently developed yet for the CAISO to	The ISO appreciates the suggestion and agrees with LSA's recommendation. The ISO is proposing to initially proceed with the exceedance methodology with a commitment to future stakeholder process to reassess counting methodologies.

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		determine by August-September of this year when or whether it should be applied in the RISO reliability assessment. ELCC methodologies are complex, with significant variants across the United States, and they can be sensitive to input assumptions, among other issues. The CPUC is considering such complexities, including how ELCC should be applied to individual resources, in its Resource Adequacy proceeding (R. 14-10-010). However, significant issues, including how to develop monthly values, remain unresolved. The Proposal allows LRAs like the CPUC to adopt RA counting rules that are different from the RISO rules. However, any CAISO adoption of ELCC for the RISO reliability assessment would have to resolve many of the same issues the CPUC rulemaking is already considering. Rather than duplicate the CPUC's efforts (which the RISO implementation timeline would probably not allow in any case), the CAISO should use the Exceedance method initially and then consider the analysis and results of the CPUC rulemaking and/or other applicable ELCC methodologies in used by PC and its state regulators to determine its own policies regarding ELCC adoption. Finally, as noted in LSA's last comments, adopting the simpler Exceedance methodology for RISO implementation will allow the CAISO to devote its scarce resources to other considerable work needed to implement the rest of the RA framework, including potentially significant efforts related to system and possible zonal Planning Reserve Margins (PRMs).	
	WPTF	WPTF recognizes that there are ongoing discussions at the CPUC on counting rules. WPTF supports the use of a consistent counting rule methodology across all the parts of the expanded footprint. WPTF also supports the ELCC methodology for its probabilistic robustness. WPTF understands that the exceedance methodology has been shown to fail to capture saturation effects of specific renewable generating technologies. For example as solar generation fills early afternoon hours, the hours of highest system stress shift to the late afternoon, early evening, when solar	The ISO appreciates WPTF's comments on the ELCC ad concerns with the exceedance methodology and will take them into consideration. The ISO is proposing to use the exceedance method for wind and solar resources exploring a transition mechanism for moving to an ELCC method in the future.

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		generation is lower and contributes less to reliability. We also understand that the CPUC is transitioning to the use of ELCC to determine the capacity value of wind and solar for its RA program. This also provides motivation for the CAISO to switch to an ELCC methodology.	
	UAMPS	• Solar/Wind: UAMPS recommends the Exceedance methodology • Storage: UAMPS recommends the Four hour test methodology • PDR/RDRR/Participating Load: UAMPS recommends the Four hour test methodology	The ISO appreciates UAMPS' recommendations and has taken them into consideration in development of the proposal for counting methodologies.
	PAC	A consistent counting methodology would need to take into consideration established resource planning principles of new entrants. For instance, in its IRP, PacifiCorp considers the capacity contribution from short-term firm market purchases procured at market hubs outside of the BAA. A standardized approach would also need to be based on industry best practices while considering that LRAs have jurisdiction over LSEs and that the LRAs may require specific approaches for establishing resource counting criteria, particularly for intermittent resources. LRAs across PacifiCorp's jurisdictions have and continue to explore preferred methods for establishing capacity contribution values for intermittent renewable resources. A regional organization must be flexible and allow LSEs to incorporate any changes acknowledged or approved by an LRA in the RA plans for new entrants. Moreover, it is critical that any counting methodology adopted by the ISO be consistent with the capacity contribution values used to develop a minimum PRM.	The ISO appreciates PAC's comments and has taken a careful approach of considering all methodologies along with the commitment to reassess methodologies in an open a transparent stakeholder process in the future. The ISO also appreciates the comments on the utilization of short-term firm market purchases and has added this issue as an item in the proposal for stakeholder discussion.
	Six Cities	The Six Cities agree with CAISO's position that resource counting rules must be consistent for purposes of reliability assessment […] and that the counting methodologies for reliability assessment purposes must be consistent with the methodology used to establish PRMs […].	The ISO appreciates comments from Six Cities in support of the counting methods proposal.
	SDG&E	Long-term, SDG&E supports the Effective Load Carrying Capability ("ELCC") approach for all resource types that which are currently based on historical data. This includes not only Solar and Wind but also qualifying facilities	The ISO appreciates SDG&E's comments and agrees with the suggested process. The ISO is proposing to initially proceed with the

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		("QFs") and certain Hydro resources. However, SDG&E believes that the ELCC values must also be consistent with the monthly RA program. ELCC values for solar resources should be divided into photovoltaic or thermal and tracking or static. ELCC values for wind resources should be developed for small or large turbines. ELCC values should also be calculated to a Local area or sub-area rather than a statewide average. In the short-term SDG&E believes the current exceedance approach needs to be used. A level playing field for contracting with generators will not exist among all LSEs until LRAs align their offer evaluation processes with their processes for establishing Resource Adequacy counting rights. Once these two processes are aligned through the use of consistent ELCC values, SDG&E supports the adoption of an ELCC approach.	exceedance methodology and plans to explore transitioning to an ELCC method in the future.
	SCE	SCE is supportive of a uniform counting methodology for resources for the CAISO RA showing.	The ISO appreciates SCE's comments in support of this element of the proposal.
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	[…] Joint Commenters support a number of key principles. The Regional RA framework should ensure: • […] To the extent possible, RA counting methodologies should be consistent across the ISO footprint. The counting methodologies should recognize the RA benefits that can be provided by renewable resources and should further recognize the RA benefit provided by regionally diversifying the generation portfolio. Wind and Solar In our previous comments, we supported consideration of the Effective Load Carrying Capability (ELCC) methodology for assessing the capacity value of wind and solar resources, and we suggested CAISO provide information on alternative ELCC methods and propose an ELCC method or one of its less computationally challenging variants for consideration, if it is demonstrated to be comparably accurate. We continue to support an ELCC methodology as the methodology that most fairly and appropriately reflects performance capabilities for wind	The ISO appreciates the comments regarding ELCC. The ISO is proposing to initially proceed with the exceedance methodology and explore a transition to an ELCC methodology. The ISO would also reassess other counting methodologies in an open and transparent stakeholder process.

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		and solar resources. As the Revised Proposal underscores, an ELCC approach probabilistically assesses the ISO's ability to serve load under uncertainty and represents a resource's capacity over a full 24 hour day. We do not support use of an exceedance methodology. In addition to the disadvantages identified in the Revised Proposal, use of an exceedance method would be retrogression for PacifiCorp, its stakeholders, and its regulatory communities. PacifiCorp did at one time use the exceedance method in developing its IRP. However, PacifiCorp is now using a modified ELCC approach. We again recommend that the CAISO propose in its next revision an ELCC methodology.	
	SVP	Wind and Solar Counting Methodologies – Exceedance vs. ELCC: SVP believes that using the ELCC methodology is a proper method for evaluating the capacity benefits of incremental renewable resources when reviewing whether to extend transmission to remote generation locations. However, there are a number of implementation details that need to be understood regarding the ELCC methodology, especially how such a methodology would be applied to existing renewable resources.	The ISO agrees with SVP that further details are needed for the development of an ELCC methodology. The ISO is proposing to initially proceed with an exceedance methodology and explore a transition to an ELCC methodology.
	CMUA	This issue is one that balances the need to limit free riding, with the remaining desire to vest key resource adequacy rules with LRAs. CMUA appreciates the additional detail the CAISO has provided with respect to possible uniform counting methodologies. CMUA does not have a position on this issue at this time.	The ISO appreciates CMUA's comments and agrees with the comment on the need for balancing these issues.
	ISO - Department of Market Monitoring	• Non-resource-specific resource adequacy resources Currently there is also RA capacity served by imports that are not resource specific. The ISO's proposal does not include a counting methodology or specific guidelines on how these non-resource-specific resource adequacy (NRS-RA) resources should be procured and counted. Oversight for NRS-RA resource procurement is conducted by each local regulatory authority and is largely not visible to the ISO. The	The ISO has added an item to the scope of this proposal in order to initiate a discussion on the topic of what constitutes a "firm monthly commitment" and what import resources should qualify for RA purposes and encourages additional feedback on this element of the proposal. The ISO has not

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		ISO's April 13 paper on this issue indicates that imports used to meet resource adequacy requirements "are considered to be a firm monthly commitment to deliver those MWs to the ISO." […] However, the integrated resource plans for utilities in other states, such as those in the PacifiCorp area, currently indicate that these entities rely on bilateral spot market purchases to meet a significant portion of the peak capacity needs. DMM is recommending that the requirements and expectations relating to the physical availability of imports used to meet resource adequacy requirements be further discussed and clarified as part of this initiative. This is important since imports used to meet resource adequacy obligations are required to bid in the day-ahead market, but are not subject to any limits on bid price and do not have any must-offer obligation in real-time if not accepted in the day-ahead market. Thus, DMM believes it is important for all stakeholders and the ISO to have a common understanding of what may constitute a "firm monthly commitment" for the purposes of meeting resource adequacy requirements. This is increasingly important as the ISO expands regionally to include additional load-serving entities that currently rely on established integrated resource planning processes subject to regulation by other states. This is also needed to provide a framework for any monitoring of the compliance of resource adequacy imports with market rules or expectations. • Qualifying Capacity Testing Currently the scheduling coordinator for a resource is responsible for requesting tests of the resource's maximum output capability. However, over time, the generation may not be able to perform to the same standards as when it was first tested. If this is so, the scheduling coordinator does not have an incentive to re-test the unit. This is because a re-test could result in a decrease in the unit's qualifying capacity. This is an issue because it could result in Master File characteristics that are incorrect and reliability concerns if resources are 'counted' for more	proposed a direction on this question and is seeking feedback with the ISO's intent to clarify what resources are eligible and provide certainty on the expected enforcement mechanism that the ISO's DMM would utilize. The ISO has not included non-resource specific resource adequacy counting to the scope of uniform counting methodologies because it is under scope in the FRACMOO II initiative. The ISO has established resource performance testing for resources providing ancillary services. In addition, the ISO is proposing to test resources that will be providing registered capacity values. The ISO would need to explore this recommendation further in order to better quantify the potential impact of the suggested issue.

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		capacity than they can physically provide. DMM recommends that the ISO establish requirements for the qualifying capacity of resource adequacy resources to be tested on a regular basis in order to provide assurance that the values are physically attainable.	
	UTC	The UTC strongly supports the use of an ELCC for wind and solar generation. The UTC also recognizes that the ELCC is more complicated and will take the ISO longer to develop than an exceedance methodology, but the geographic diversity of a regional ISO and the level of solar and wind penetration mandated by state renewable portfolio standards necessitate the use of the ELCC to stay abreast of best practices and achieve least-cost planning. The ELCC is currently used in the Pacific Northwest. Pacific Power uses an ELCC methodology and PSE is in the process of developing a method equivalent to an ELCC methodology. An all-party settlement and testimony has recently been filed at the Oregon Public Utilities Commission proposing to establish the ELCC or a capacity factor based on an LOLP analysis as the method of determining the capacity of variable energy resources. The Power Council's use of an LOLP approach for resource adequacy reflects a probabilistic modeling of wind and solar capacity. The UTC acknowledges the diversity of approaches used to determine the capacity of solar and wind resources and the wide variation in results utilities produce even when using the ELCC concept. Importantly, utilities, national laboratories, and stakeholders throughout the Western Interconnection continue to discuss how to properly design an ELCC method for variable resources like wind and solar. Again, the UTC reiterates its concern that the revised RA schedule does not provide sufficient time for the ISO to develop and vet an ELCC model throughout the region. We encourage the ISO to commit the procedural time necessary to receive the diverse perspectives of	The ISO appreciates the comments regarding ELCC. The ISO is proposing to initially proceed with the exceedance methodology and explore a transition to an ELCC methodology. The ISO would also reassess other counting methodologies in an open and transparent stakeholder process.

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		the region's stakeholders and build trust and transparency around an ELCC proposal.	
6(c) **Reliability Assessment:**	CPN	Calpine supports the CAISO proposal to explicitly link backstop procurement related to deficiencies of system, local, and flexible capacity to the CAISO's proposed reliability assessment. Calpine requests clarification of how deficiencies of capacity in a particular zone would be treated for the purposes of backstop procurement? Would backstop procurement to meet a zonal deficiency require a new type of designation?	The ISO appreciates Calpine's comments in support of this element of the proposal. The ISO is no longer proposing to develop the zonal RA concept at this time.
ISO Backstop	ICNU	ICNU discussed its concerns over ISO backstop procurement authority at length in prior comments. […] In sum, the choice of LRAs and LSEs to adopt different PRM and counting methodologies could be of little practical import if and when the ISO chooses to exercise its proposed backstop procurement authority based on its own, differing interpretations of RA. The ISO appears to have considered these concerns, as evinced by the detailed description of the ISO's various capacity procurement mechanisms ("CPMs"), and the clarification that "[t]he ISO has never issued a CPM designation because of a RA deficiency, a collective local deficiency, or failure to replace capacity." […] ICNU appreciates that, based on such ISO experience, the risk of a future CPM event affecting customers of PacifiCorp or any other new PTO may be small. Nevertheless, the stakeholder risk still exists, and the ISO's experience in this regard may not translate to a much broader, fully-regional ISO. For example, "it is possible that even if all LSEs in a particular local area meet their procurement obligation … collective procurement may not be sufficient to permit the ISO to meet reliability criteria." […] In this circumstance, despite an LSE having actually met its obligation, it would seemingly still incur additional procurement costs—either through a voluntary "cure by procuring its share of the collective deficiency," […] or involuntarily through the ISO's exercise of backstop authority. "If a LSE procures its share of the collective deficiency, the ISO will not assign it any CPM costs if the ISO is required to procure CPM capacity …." […] In other words, an LSE has the "choice" to incur procurement costs on its own or be assigned such costs by the ISO in the	The ISO only engages in backstop in a limited number of circumstances when necessary for reliability purposes, as defined in its tariff. The ISO acknowledges that the risk exists that the ISO may have to rely on the CPM to maintain reliability. However, the ISO's use of CPM has been extremely limited and in connection with extremely stressful events. As the ISO indicated in its Straw Proposal, about half of the CPM designations were associated with the unexpected shut down of SONGS. The ISO continues to expect that use of CPM in the future will be limited to rare Significant Events and Exceptional Dispatch circumstances.

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		event that the ISO determines that a collective deficiency exists. The end result is similar if not identical either way, and the fact that PacifiCorp or any other new PTOs could be susceptible to added costs regardless of fulfilling individual obligations continues to be a concern.	
	CPUC	The CAISO proposes to maintain its current scope of backstop authority and to revise the relevant Capacity Procurement Mechanism (CPM) tariff provisions to expressly acknowledge that it may utilize the proposed reliability assessment to identify shortages that may be cured through its exercise of backstop authority. The CPUC Staff requests that the CAISO consider and engage in stakeholder discussions on what is an appropriate scope of backstop authority in Resource Adequacy tariff provisions for an expanded regional ISO. Specifically, the CPUC Staff requests that CAISO consider utilizing the reliability assessments based on year-ahead (annual) resource adequacy showings for advisory purposes only to inform LRAs and LSEs of how they are faring relative to the CAISO's load and needs forecasting and resource counting methodologies. Backstop procurement authority should be limited to curing cumulative or collective deficiencies in month-ahead resource adequacy compliance filings submitted by LSEs in an expanded CAISO, with appropriate cost-allocation to the LSEs that contributed to the deficiency/need for backstop procurement. The CPUC Staff also suggests that the CAISO proposal should eliminate the "risk of retirement" CPM provision for a regional, multi-state ISO. The CAISO's backstop procurement authority is uniquely complex and expansive compared to other FERC-regulated RTOs and ISOs, in part because it has been expanded over time as the CAISO and CPUC have instituted new Resource Adequacy requirements (e.g., local and flexible RA) that are not required in other regions, and because the CAISO has successfully petitioned FERC for expanded authority to cover other situations (e.g., to compensate resources "at risk of retirement" that the CAISO determines are needed for reliability by the end of the calendar year following the current RA compliance year, which the CPUC opposed). The resulting	The industry is undergoing a significant transformation. The ISO faces dramatic changes in the resource mix, resource characteristics, system topology, and potentially the ISO footprint and number of new market participants, and these factors create increased challenges. To the extent resource adequacy resources procured by load serving entities are insufficient to ensure grid reliability, the ISO must have authority, as a last resort, to engage in backstop procurement to maintain reliable grid operations. After the ISO gains sufficient experience with a large multistate footprint and the ongoing grid transformation, it may be appropriate to reexamine the CPM categories. The ISO, however, at this time is unclear as to what factors suggest the need for backstop procurement authority would diminish by virtue of an expanded footprint.

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		matrix of potential backstop situations covers shortages in RA plans for all types of RA and the three Flexible Capacity Categories, for individual LSE deficiencies or to cure collective, aggregate, or cumulative deficiencies for local and flexible RA, on an annual and/or month-ahead time frame. This is in addition to the risk-of-retirement and backstop authority for addressing significant events or operational needs to exceptionally dispatch non-RA resources. Retaining all of the ISO's existing backstop procurement authority may not be appropriate in a multi-state, regional ISO, nor would it appear necessary to maintain reliability. The CAISO's regional resource adequacy construct must provide CAISO with the out of-market backstop procurement authority that is truly needed to maintain reliable day-today grid operations. As FERC recently acknowledged, the CPM "is not utilized to clear load and supply through a market process; rather it is a backstop to respond to unexpected reliability needs." Shortfalls in annual resource adequacy plans do not yield unexpected reliability needs in the day-ahead or day-of markets. And, as the draft proposal recognizes, the CAISO has never needed to use the backstop authority to cure deficiencies in any annual showings or based on a risk of retirement of a specific resource. On the other hand, Resource Adequacy tariff provisions should defer to state and LRA resource planning decisions. As the ISO expands to a broader regional footprint, it will be critical to ensure the ISO does not exercise backstop procurement to displace resource planning selection, procurement, and counting decisions, for example by utilizing a reliability assessment that ignores resources the LRA does count for resource adequacy compliance or by adjusting the LSE's demand forecast to reduce the impacts of load modifying resources relative to the values accorded by the LRA or LSE. The CAISO's resource adequacy tariff provisions should also enable LSEs to optimize and efficiently manage their own procurement activities in a manner that satisfies all procurement rules and regulations imposed by their LRA while satisfying the CAISOs Resource Adequacy requirements (to the extent the CAISO validly imposes requirements that differ from an LRA's adopted	

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		Resource Adequacy requirements). The CPUC staff agrees with CAISO that the regional RA framework should provide flexibility for LRAs and LSEs to maintain their current capacity procurement programs, and that the CAISO can "help facilitate these programs by clearly communicating to state regulatory commissions, LRA, and LSEs the ISO's forecasted reliability needs to inform capacity procurement decisions." Revised Straw Proposal at 3. But having procurement authority to backstop on a one or two year-ahead basis (for risk-of-retirement designations) may not be necessary for reliability and in fact could undermine this objective. The current CPM tariff has been workable while the CAISO has operated essentially as a single-state ISO, because the CPUC and CAISO collaboratively set RA requirements and monitor LSE's compliance filings, and the CPUC-regulated IOUs have informed the CPUC when the CAISO has notified IOUs or potential need for backstop procurement resulting from conflicts between the CAISO and CPUC's resource counting methodologies for storage and demand response resource adequacy resources. The CAISO and CPUC have generally been able to work together, with CPUC-regulated IOUs, to avoid the need for backstop procurement in such situations. It is not clear if such informal collaboration and communication will remain viable or would be appropriate in a multi-state CAISO. Thus, the CAISO should utilize the regionalization opportunity to make the CPM tariff simpler and more transparent and make clear that the CAISO will not utilize its backstop procurement authority to supplant the states or LRA's resource planning and procurement activities. The CPUC Staff accordingly requests that the CAISO expressly address and vet these issues in the development of its final Regional RA proposal.	
	ORA	The Capacity Procurement Mechanism (CPM) grants the ISO authority to procure backstop capacity when reliability becomes an issue. The CPM has rarely been used by the ISO. One of the main reasons for this limited use is that the CPUC strictly enforces RA requirements in California. CPUC jurisdictional LSEs provide over 90% of the RA capacity requirements for the ISO. The CPUC monitors LSEs and if an LSE's procurement fails to meet	The ISO is reviewing its tariff to assess what specific tariff changes might be needed to implement the revisions contemplated in the Revised Straw Proposal. The ISO's initial thoughts are that revisions of some nature, be they definitional or otherwise, will be

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		requirements, the LSE faces fines that are several times greater than the costs of procurement. The CPUC created a penalty structure to ensure success of the RA program. The Revised Straw Proposal calls for assigning backstop procurement costs to LSEs that fail to cure a deficiency. Those costs are based on the CPM auction and are significantly lower than CPUC fines for noncompliance. With grid reliability moving away from a California focus to a multi-state focus, enforcement in support of reliability necessarily changes. Under the Revised Straw Proposal enforcement would essentially move away from LRAs like the CPUC to the regional ISO. ORA requests that the ISO provide more information on its proposed enforcement under regional RA. What role will LRAs play in enforcement in regional RA? Will enforcement actions be formal actions that are reportable to state and federal agencies? How will the ISO handle appeals of enforcement actions? The ISO proposes to revise the ISO tariff to include categories for CPM authority based on reliability assessments. The categories proposed are the same as some existing categories in the ISO tariff and it is not clear that current ISO CPM authority wouldn't allow for CPM backstop under regional RA if a shortfall was determined by reliability assessment. ORA therefore questions the need for changes to the current CPM tariff based on the reliability assessment. One authority not mentioned is the authority to correct a deficiency in the newly proposed zonal requirements. If zonal requirements are added to LSE requirements for reliability purposes, then the ISO should have CPM authority to cover deficiencies.	necessary. If the ISO implements a zonal requirement, the ISO anticipates that it would also implement a new type of CPM designation to cover zonal deficiencies, however the ISO has decided to forego development of a zonal construct at this time. The ISO does not undertake formal enforcement actions with respect to resource adequacy. Existing tariff section 40.7 sets forth the process for resource adequacy compliance. The ISO contemplates continuation of a similar approach under an expanded footprint, in which CPM procurement costs assigned to LSEs would be in addition to, not instead of, any penalties that the LSE's LRA may apply. The ISO will continue the current tariff language that requires the ISO to provide an opportunity to cure before it engages in any CPM backstop procurement for a deficiency.
	WPTF	WPTF supports the ISO's proposal to be able to perform a reliability assessment, the outcome of which would then trigger or not the need for backstop procurement.	The ISO agrees with WPTF that the reliability assessment should determine the need for any backstop procurement
	PAC	PAC expresses concerns that backstop procurement implemented based on the ISO's PRM or resource counting methodology may be inconsistent with	To the extent a load serving entity is concerned that if it procures additional capacity as a result of the reliability assessment, it may not receive positive regulatory treatment for cost recovery,

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		the PRM or resource counting methodology of the LSE as determined in its resource planning process.	the load serving entity can choose to forgo such procurement and the SO would instead procure capacity through the CPM. That would eliminate any risk that the load serving entity might not recover the costs associated with its procurement. Costs arising from the ISO's approved tariff would be recoverable in market participant's retail rates. The CAISO also notes that under its existing RA tariff provisions, the CAISO would notify both the scheduling coordinator for the load serving entity and the applicable local regulatory authority of the deficiency. This provides an opportunity for the load serving entity and its regulator to discuss any "cure" or simply rely on the ISO backstop, which will be undertaken through a competitive solicitation process.
	Six Cities	The Six Cities support CAISO's proposal to establish backstop procurement authority and procedures to address aggregate deficiencies in resources required to maintain reliability and to allocate costs for backstop procurement to LSEs that fail to procure their allocated shares of RA proportionate to their shortfall in assigned RA requirements (Revised Straw Proposal at 48 - 49) However, as noted above, if a Zonal RA construct is adopted, there must be further analysis and explanation with respect to how CAISO's backstop authority would be applied in the context of Zonal RA requirements.	If the ISO implements a zonal requirement, the ISO anticipates that it would also implement a new type of CPM designation to cover zonal deficiencies.
	SDG&E	SDG&E requests the ISO to provide details on the cost allocation for backstop procurement for zonal deficiencies, if the zonal concept is adopted. SDG&E would like to understand the cost allocation of the […] ("CPM") in relation to ISO's […] ("PRM") proposal. Assuming multiple LRAs set their respective PRMs above or below the ISO's total system PRM. If the ISO's system wide PRM is not met because those LRAs, which set their PRMs lower than the ISO's PRM are unable to sufficiently lean on other LRAs who	If the ISO implements a zonal requirement, the ISO anticipates that it would also implement a new type of CPM designation to cover zonal deficiencies, however the ISO has decided to forego development of a zonal construct at this time.

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		have set their PRMs greater than the ISO's PRM; will the ISO allocate CPM costs to all LRAs' LSEs regardless of the LRAs' PRMs, or only to the LSEs of the LRAs that set their PRMs below the ISO's system wide PRM? If the former, is the ISO acknowledging the LRA's decision to set a lower PRM and is not finding the LSEs of that LRA to be deficient because the LSEs have met the requirements of their respective LRA?	The ISO does not yet have a proposal for how the costs of such a potential of CPM designation would be allocated.
	SCE	SCE is supportive of a methodology that assigns the costs to the entity that fails to procure their required resources.	The ISO agrees that backstop costs should be assigned to entities that fail to procure sufficient resources.
	CMUA	CMUA supports the general approach to maintain a "minimalist" approach to backstop procurement, with triggering events based on aggregate deficiencies and allocated to LSEs that fail to meet allotted shared of RA obligations. However, CMUA is concerned and requests additional information, including examples, about how the backstop procurement would be applicable to any Zonal RA requirement.	If the ISO implements a zonal requirement, the ISO anticipates that it would also implement a new type of CPM designation to cover zonal deficiencies.
7 [Other] **Timeline/** **Process/** **Scope**	MCE	MCE recognizes that the ISO needs to develop a set of rules for RA that can work effectively in a regional, multi-state environment. To help ensure the efficient and reliable operation of a western regional balancing authority, the ISO must implement regional RA rules that encourage new LSEs to join the expanded balancing authority while at the same time respecting the preexisting rights and contractual arrangements of LSEs that are already within the California ISO. The ISO also needs to ensure that the new regional RA rules it develops – particularly with respect to MIC requirements and a potential zonal approach to RA – do not have unintended consequences or harm market competition.	The ISO's goal is to implement regional RA rules that encourage new LSEs to join the expanded balancing authority while at the same time respect the preexisting rights and contractual arrangements of LSEs that are already within the ISO. The ISO is carefully considering each proposal that it develops so that each proposal does not have unintended consequences or harm market competition. The MIC proposal is being developed with these considerations in mind. As discussed within this proposal, the ISO is no longer proposing a zonal approach to RA.
	CPUC	[…] CPUC Staff have concerns about many elements of the CAISO's revised straw proposal, and hope to have opportunities to work with CAISO Staff to	The ISO will work with CPUC Staff to discuss CPUC Staff's concerns about the elements of

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		craft a Regional RA framework that retains the current statutorily defined roles for the LRAs and does not result in a more complex RA program and requirements.	the ISO's proposals, and will work with CPUC Staff to craft a Regional RA framework that retains the current statutorily defined roles for the LRAs and does not result in a more complex RA program and requirements. The ISO hopes to develop an approach where RA program and requirements are made simpler rather than more complex and will explore with stakeholders how this might be achieved.
	CDWR	CDWR may submit additional comments as they emerge at any stage of this stakeholder process. As always, CDWR appreciates CAISO's outreach and continuing efforts to resolve CDWR's concerns.	The ISO stands ready to work with CDWR to understand and address concerns that CDWR may have about this initiative.
	PG&E	[…] PG&E is concerned as to whether time will permit the results of further PRM study work to be developed and appropriately reviewed by stakeholders, prior to submission of this initiative to the Board of Governors in August. […] PG&E believes that sufficient time will not be available to develop and review with stakeholders the details and implications of the proposed MIC methodology changes prior to the submittal of this initiative to the Board of Governors in August. […] Due to the scheduling restrictions associated with this initiative, PG&E understands the CAISO's focus on only those changes to the Resource Adequacy Sections of the CAISO Tariff that are absolutely necessary to allow for regional integration. PG&E asks the CAISO to consider removing items which require further study in order to allow the CAISO to meet its current schedule as indicated […] below. PG&E's View on the Current Scope of the Regional RA Revised Straw Proposal Changes Needed • Load Forecast Methodology	The ISO is planning to provide additional detail in each subsequent proposal in the initiative regarding how a PRM study would be conducted and the process associated with it. Stakeholders will have time to review this information prior to the submission of a PRM proposal to the ISO Board in August. The ISO has provided additional detail in this proposal on how the MIC would work for an expanded BAA, and the ISO has also provided results of a MIC analysis for the expanded BAA that the ISO has done using data from PacifiCorp. The ISO has removed a zonal RA requirement from the scope of this initiative, which is

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		• Reliability Assessment • Updating ISO Tariff Language to be More Generic Changes Requiring Further Study • Zonal RA Requirements • Changes to Maximum Import Capability • Allocating RA Requirements to LRAs/LSEs	consistent with PG&E's view on this element. The ISO believes that there is sufficient time to fully develop changes to the MIC and allocating RA requirements to LRAs/LSEs topics prior to presenting a proposal to the ISO Board in August. Further, the ISO believes that the last two topics on PG&E's list are important elements that are needed for Regional RA.
	SCL	Seattle City Light encourages CAISO to consider more options with sufficient detail to allow for analysis and comparison. In order to achieve the lowest cost and risk results, more than one approach needs to be considered. Seattle City Light also encourages CAISO to incorporate performance measures into its planning. Performance measures will provide benchmarks to evaluate policies, which will allow both CAISO and participants to make better informed choices about future actions.	The ISO believes that there is sufficient time allotted to fully develop the "need to have" topics within this initiative. The ISO has provided options and will continue to do so as warranted, and will provide analysis of proposed elements of its proposal (like the ISO has done for system, local and flexible requirements, and MIC calculations). As discussed with stakeholders in this proposal and prior proposals, the ISO is planning to report on performance relative to proposal elements (one example of this is reporting the extent in percentage terms that load forecasts differ from the actual load experienced).
	XES	Xcel agrees that the ISO needs a mechanism to ensure compliance with the RA rules. If a customer is taking network service under its tariff, regardless of jurisdiction, the ISO should have the authority to identify gaps and require a customer to procure sufficient RA or pay a penalty that can be used to compensate other network customers with excess RA capacity.	The ISO agrees with XES that a mechanism is needed to ensure compliance with RA rules and that sufficient resources must be made available to the ISO to reliably operate the grid. Regarding XES' second point, the ISO would like to clarify that in the scenario described by XES the ISO is not proposing to compensate

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			other network customers with excess RA capacity.
	ORA	The ISO notes that stakeholders expressed concern with the pace of this initiative and requested additional time.14 In response, the ISO added two months to the schedule and an additional iteration of the proposal. The ISO's limited extension does not provide the time necessary for stakeholders to participate sufficiently in the process, and provide well-reasoned responses. This endeavor is too important to rush through under the revised schedule. ORA recommends that the ISO conduct workshops to provide further understanding and engage stakeholders in complex and controversial issues. Stakeholder workshops or working groups composed of a subset of stakeholders would be a more efficient approach in the long term because it would foster stakeholder consensus and allow stakeholders to play an integral part in creating a regional RA. Furthermore, the Revised Straw Proposal includes many sections that seek stakeholder feedback and other sections in which the ISO must complete more research before developing proposed solutions. This work needs more than one additional revision and stakeholder input opportunity. The ISO should focus on a durable framework that will work for multiple potential entrants and not rush the current process at the risk of creating an inferior product. The ISO addresses stakeholder concerns, including those of ORA, regarding changes to the RA program in California ahead of, and without guarantees of, other entrants. It is not clear from reading pages 11-12 of the Revised Straw Proposal what changes may take effect in California ahead of implementation of an expanded ISO. Provisions with substantive changes are promised to only occur upon the entry of a new participant such as PacifiCorp. Careful consideration must be given to making substantive or procedural changes to California's RA program prior to the commitment date for entry of a new participant.	The ISO believes that there is sufficient time allotted to fully develop the "need to have" topics within this initiative. The ISO will continue to evaluate the scope of this initiative and the pace of development of proposal elements such that the elements can be sufficiently developed prior to being presented to the ISO Board. The ISO is planning to hold working group calls and/or meetings in the future to allow additional forums for stakeholders and the ISO to work together to develop proposal elements. The ISO provides in this this proposal and will provide in subsequent proposals additional detail on what changes may take effect and when. The ISO has explained that changes are targeted to occur only when a new Participating Transmission Owner has committed to join and create an expanded BAA. The ISO intends for the framework that is developed in this initiative to be a durable framework that will work for multiple potential entrants.

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	Six Cities	[…] The Six Cities agree with the suggestion expressed by PG&E's representative at the April 21st meeting that CAISO establish a stakeholder working group process to consider and refine the Zonal RA concept. […] The Six Cities' March 16th comments on the Straw Proposal expressed the widely-shared view that CAISO's original proposed schedule for this initiative was too accelerated to support meaningful evaluation and thoughtful development of regional RA rules. In response to the schedule concerns raised by multiple stakeholders, CAISO has extended the schedule for this initiative by approximately two months and now targets the August Board meeting for consideration of the Regional RA proposal. While the Six Cities appreciate the additional time allowed under CAISO's revised schedule, many significant details remain undefined, including significant elements of the Zonal RA proposal. The two-month extension of the schedule is appreciated, but it still may not be sufficient to allow careful and thorough development of an appropriate regional RA framework. As discussed in the Six Cities' March 16th comments, there is no legitimate reason to rush this stakeholder process. Changes to the CAISO tariff occur on an ongoing and nearly continual basis. In particular, tariff provisions relating to RA rules have changed substantially over the past three to five years to address evolution of the resource fleet and related operational impacts. There is no reason to expect that the tariff applicable to an expanded regional ISO will be any less dynamic. Indeed, with an expanded footprint and greater diversity of system conditions and available resources, it is more likely that tariff provisions may need to be modified even more frequently. New participants in the regional ISO and their state regulators will have the same opportunities to participate in stakeholder initiatives and to shape tariff revisions as CAISO stakeholders have had all along. In light of the constantly evolving nature of the tariff, it makes no sense to rush to judgement with respect to a set of regional RA rules that then will be subject to the same evolutionary process. There is no reason why state regulatory review of PacifiCorp's participation in a regional ISO based on CAISO's markets cannot proceed in parallel with the stakeholder initiative to	As discussed in this proposal, the ISO is no longer proposing a zonal RA requirement; thus, a working group meeting is not needed on this element. The ISO believes that there is sufficient time allotted to fully develop the "need to have" topics within this initiative. The ISO will continue to evaluate the scope of this initiative and the pace of development of proposal elements such that the elements can be sufficiently developed prior to being presented to the ISO Board. The ISO agrees that the ISO tariff does change over time, but does not agree that the ISO should not undertake this initiative now and develop Regional RA provisions. Potential new Participating Transmission Owners will need to know what the RA rules are before their regulators will approve their participation in an expanded BAA. This "need to know" is one of the primary drivers for this Regional RA stakeholder initiative.

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		develop regional RA rules or any other stakeholder initiative relevant to regionalization of CAISO's markets. Such parallel processes would enable better informed and more careful development of the initial rules applicable to a regional ISO and would afford PacifiCorp's state regulators a more realistic overview of the dynamic nature of the tariff and the process by which it changes. Accordingly, CAISO should remain open to further extension of the schedule for this stakeholder process as necessary to enable thorough analysis and appropriate and balanced resolution of regional RA issues.	
	AWEA, Interwest Energy Alliance, Renewable Northwest [*Joint Comments*]	As the ISO moves forward with the regional RA framework and other regional initiatives, […] "Joint Commenters" urge the ISO to take a more comprehensive approach to the regional market designs it is proposing. There are many disparate regional integration initiatives that will take place over the coming months (TAC, RA, GHG, etc.). At some point, these discrete proposals need to be reviewed holistically. Breaking regional integration issues down into discrete, manageable tasks is a reasonable approach to initiating proposals and beginning discussions on critical topics. However, in order for stakeholders to support the regional integration effort, they will need to understand how the disparate proposals work in concert. There will be a number of interrelated regional initiatives that deserve to be reviewed as a whole package. Therefore, the Joint Commenters recommend that the ISO develop a plan to review the complete regional integration package with stakeholders before moving forward with Board approval of the disparate proposals. This is important because, while discrete proposals may seem reasonable on their own, the sum of the parts may not result in a robust market design that encourages regional expansion. We look forward to additional discussions on how this proposal will interact with other elements of regional integration and more information on the ISO plans for a holistic review of the […] integration proposals.	As this RA initiative moves forward, and in the other regional initiatives, the ISO will discuss with stakeholders and explain how this RA proposal interacts with other elements of regional integration.
	NIPPC	[…] NIPPC notes that this stakeholder process is not the appropriate mechanism to explore enhanced functionality or improvement of the ISO's existing processes unless changes are required to facilitate potential expansion of the ISO's geographic footprint. To the maximum extent	The ISO is planning to the maximum extent possible to continue to use existing processes and provisions that have proven effective.

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		possible, the ISO should continue to use existing processes that have proven effective.	
	UTC	[…] The success of the RA initiative and a regional ISO depends on building trust through transparency and collaboration. The UTC is committed to participating in appropriately crafted administrative processes to determine if the ISO can reach that goal. In that vein, the UTC appreciates the extension of the RA initiative timeframe to August 31, but respectfully suggests that in light of the wide-ranging work still outstanding, and the need for agreement by many stakeholders, the ISO established deadline remains a challenge. Accordingly, the UTC recommends extending the timeframe for RA development beyond the August 31, 2016, deadline and adding more regularly scheduled work group meetings. […] It is also important to ensure that policy development and technical details, including Resource Adequacy (RA), are all considered carefully with a broad group of stakeholders; incomplete development may result in unforeseen consequences across the region. The UTC appreciates the efforts the ISO has made in the Revised Straw Proposal in beginning to provide technical details. However, the Revised Straw Proposal also outlines the substantial work on RA that still must be completed and reviewed before Pacific Power can conduct a net benefits study the region can review and the company can file with each state. […] The UTC encourages ISO to acknowledge the substantial work that remains necessary after it selects a preferred alternative approach to the existing RA methodology.	The ISO believes that there is sufficient time allotted to fully develop the "need to have" topics within this initiative. The ISO will continue to evaluate the scope of this initiative and the pace of development of proposal elements such that the elements can be sufficiently developed prior to being presented to the ISO Board. The ISO agrees that it would be beneficial to hold working group meetings or calls and will hold such forums. The ISO has been conducting analyses to provide technical details such as those referenced by UTC in its comments. In the previous proposal the ISO provided results for system, local and flexible RA requirements for an expanded BAA. In this proposal the ISO provides results of an MIC analysis for an expanded BAA. This kind of information will be useful in conducting a net benefits study that can be filed by a potential new Participating Transmission Owner with the regulatory body of each state in which it does business.
	SVP	[…] It may well be helpful and efficient to, as a market participant suggested during the April 21st meeting, carve-out a working group to specifically handle this particular [zonal] issue. Given the abbreviated time allotted to the entire Regional Resource Adequacy stakeholder process as well as other	Although the ISO is no longer proposing a zonal RA requirement, and hence a working group is not needed now for this element, the ISO does agree that it would be beneficial to hold working group meetings or calls on other

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		similar processes progressing concurrently, such focused attention is necessary to work through the details of a new RA requirement. […]	RA elements and will hold such forums to better work with stakeholders.
7(a) [Other] Timeline / Process / Scope **Governance**	ICNU	ICNU encourages the ISO to reconsider its present thinking on the prioritization of governance issues, as modifications to accommodate the broader governance necessary for a regional ISO could obviate concerns over diminished LRA authority. Although "[t]he ISO does not believe that the governance of an expanded ISO must be fully resolved before policy changes can be designed to support a regional market," […] ICNU does not agree with the ISO's reasoning in support of such a position. According to the ISO: "It is essential to proceed with the various ISO regional stakeholders initiatives … because these issues are pertinent for any potential entity seeking to join the ISO." […] The unavoidable implication of this statement is that governance issues are not pertinent for a potential PTO—a proposition which is probably alarming to many stakeholders, including PacifiCorp customers and LRAs in states outside the current boundaries of the ISO. ICNU is optimistic that the ISO will carefully consider and reevaluate its position on governance prioritization, to the extent that it could moot concerns over federal preemption and the ISO's ability to overrule LRA determinations. For instance, the ISO appeared to expressly respond in the revised RA straw proposal to state jurisdictional concerns relayed in prior comments from ICNU and other stakeholders. Specifically, in response to comments expressing concern that tariff changes approved by [FERC] could "potentially impact the current jurisdiction of regulatory entities, before any changes to ISO membership and BAA footprint were made," the following assurance was offered: The ISO will ensure that any tariff provisions associated with a regionalISO would become effective only as necessary to support the integration of a new Participating TO. This means that provisions with substantive impact would only become effective once the regional ISO includes PacifiCorp (or	The ISO appreciates the feedback from stakeholders on the interdependencies of the initiatives and governance modifications required for regional integration. While the direction of regional ISO governance is not yet known, the ISO supports the efforts of the CEC to initiate a discussion on governance as they did in their May 6, 2016 public workshop. Within the papers presented at the workshop some stakeholders have recognized that there may value in a role for state regulators in decision making on certain issues such as TAC and RA. The ISO acknowledges that there is an interaction of policy design and governance, and included language in the revised straw proposal that addresses this interplay. Even still, we believe policy issues like RA can benefit from continued development at this time. To further the discussion on governance, it is also the intent of the ISO to develop a set of principles on governance that will be brought forward through a public process for comment. The set of principles will take into consideration the issues discussed in the papers presented at the CEC workshop, along with stakeholder comments. These principles should be posted on the ISO website in the near future.

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		any new Participating TO outside of the ISO's current BAA) …. […] Assurances like this are constructive and appreciated; however, they are not a substitute for the assurance that the interests of stakeholders associated with a potential new PTO will be protected through a fully regional ISO governance structure. Rather, concerns over the diminishment of LRA authority could best be addressed by ensuring that stakeholders of potential new PTOs will have an equal [governance] role in a newly constituted regional ISO.	The ISO encourages broad participation from all across the western interconnect, including LRAs, as issues such as RA and governance are developed. The current ISO Board, appointed by the California Governor and confirmed by the legislature, is very supportive of the initiatives underway to support an expanded regional entity.
	CPUC	CPUC Staff support the CAISO's decision to delay the finalization of this initiative and to wait until the end of August to take a proposal to the Board of Governors, and in fact believe even more time may be warranted. Further, despite CAISO's assurances that any tariff amendments would not become effective until after another balancing area has joined the CAISO, we still find this procedurally confusing regarding what the board would adopt and what would be filed at FERC and when tariff amendments would be filed. CPUC Staff also continue to oppose CAISO Board adoption of the Regional RA proposal in advance of a governance proposal. This is consistent with the positions of most other stakeholders who commented on this issue and therefore we are surprised that CAISO hasn't taken these concerns into account. Decisions about Regional RA cannot be fully considered, much less finalized, in isolation from discussions and decisions about fundamental aspects of a regional ISO governance structure. The existing CAISO board should not approve a Regional RA structure or "framework," including actual tariff amendments to implement regional RA, before a clear proposal for regional governance has been fleshed out. Such a proposal may include provisions for delegating certain authority relating to regional RA provisions to the states or a committee of states.	In response to stakeholder requests for more time to review and provide additional input in the policy development phase, the ISO has extended the schedule for both the Transmission Access Charge and Regional Resource Adequacy initiatives. The ISO will further develop the details of the two proposals and may add an additional iteration in the stakeholder process. This extended schedule would still allow the ISO to request approval from the Federal Energy Regulatory Commission by the end of 2016. The ISO acknowledges the interplay between modifications to governance to support a regional ISO and certain policy changes designed to support a regional market. With the initiation of discussions on governance occurring at the CEC's public

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		Final decisions regarding potential tariff amendments will need input from all states that would be impacted and should reflect state concerns about the potential scope and direction of resource adequacy tariffs covered in the CAISO's current proposal, including for example the reliability assessment, counting methods, and scope of backstop authority. Further, the CAISO board typically votes to adopt a proposal from CAISO management before tariff language is developed. For Regional RA, CPUC Staff believe that all stakeholders and a new governing body should review actual tariff language. The straw proposal does not state whether we would be given this opportunity. […] CAISO has attempted to assure stakeholders that tariff amendments to generalize language around the RA program, and remove references to the CPUC and California entities, will not become "effective" until another balancing area joins the CAISO. But, it maintains that tariff amendments would be filed with FERC before any other BAAs join. CPUC Staff thinks this is unnecessary. There can be sufficient certainty and agreement about rules without a FERC section 205 filing. It is more important that new rules be approved by the new governing body before they are filed at FERC.	workshop on May 6, 2016, development of governance issues can now proceed in parallel with the key stakeholder initiatives, including RA, pertinent for any utility seeking to join the ISO. The current ISO Board has stated their support for development of a regional ISO. To do that, the Board is inclined to recognize the concerns of other states and consider policy that will support an ISO that provides benefits to the broader region. Typically, the ISO board votes to adopt a policy proposal from ISO management before tariff language is developed. ISO management in turn runs an open stakeholder process to review tariff language to ensure the modifications are consistent with the policy approved by the ISO Board. The filing of tariff amendments at FERC on these regional matters is currently expected by year end. As a result the policy development is occurring in parallel with the discussion on governance.
	Powerex	In comments on earlier versions of CAISO's proposal, Powerex and other stakeholders suggested steps that CAISO could take to ensure that the regional resource adequacy construct adopted in this initiative serves the interests of those entities joining the expanded RTO footprint. […] Other stakeholders have encouraged CAISO to delay the development of a regional resource adequacy model until the development of a regional governance structure is completed to ensure that the concerns of all states, including California, are reflected in any proposal adopted in this proceeding.	The ISO acknowledges the interplay between modifications to governance to support a regional ISO and certain policy changes designed to support a regional market. With the initiation of discussions on governance occurring at the CEC's public

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		While CAISO has expressed its appreciation for these comments, CAISO has stated that such suggestions are beyond the scope of the current proceeding. In particular, CAISO has stated that the "intent of this initiative is to extend the existing construct of the RA program to a regional stage with the focus of proposals on only those 'need to have' and most necessary changes." Similarly, CAISO has stated that it does not believe the governance of a "regional ISO must be fully resolved before policy changes can be designed to support a regional market." Powerex understands CAISO's desire to limit this proceeding to identifying only those tariff changes that are absolutely necessary for regional expansion, in order to continue to move forward quickly with the regional expansion of its markets. Powerex also recognizes and appreciates that CAISO has been responsive to stakeholder concerns regarding the pace of this proceeding and has recently extended the timeline for this initiative; it now plans to present a final proposal to the CAISO Board of Governors and Federal Energy Regulatory Commission for approval in Fall 2016. Unfortunately, it appears that CAISO has determined that there is still not sufficient time to engage in an examination of the existing resource adequacy construct set out in its FERC-approved tariff. Nevertheless, Powerex believes it is important to recognize that the existing resource adequacy construct—both the specific requirements imposed on California load-serving entities by the California Public Utilities Commission ("CPUC") and the companion tariff provisions in the CAISO tariff—was developed by, and necessarily reflects the interest of, ratepayers and load-serving entities located in the current CAISO footprint. Moreover, unlike the framework of CAISO's Day-Ahead and Real-Time Markets for energy and ancillary services, which shares many of the design elements of other RTO and ISO markets operated throughout the United States, California's existing resource adequacy program is a "made in California" construct. Because California's resource adequacy program has been tailored to the unique facts, circumstances, and interests of California, it may be that the program neither reflects current "best practices" in market design, nor is well-suited to meeting the diverse interests and needs of stakeholders in an expanded RTO footprint.	workshop on May 6, 2016, development of governance issues can now proceed in parallel with the key stakeholder initiatives, including RA, pertinent for any utility seeking to join the ISO The current ISO Board has stated their support for development of a regional ISO. To do that, the Board is inclined to recognize the concerns of other states and entities outside of the CAISO footprint and consider policy that will support an ISO that provides benefits to the broader region. The ISO agrees that it is certainly within the authority of the new governance structure to look more broadly at the design of the RA program, and the ISO management will support that review if the new board finds it is appropriate.

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		Given CAISO's current target timelines, Powerex does not object to CAISO initially moving forward only with making limited changes needed to apply the existing resource adequacy to the integration of PacifiCorp. However, Powerex believes CAISO should also commit, at this time, to engaging in a broader review of the resource adequacy provisions in its tariff once a regional governance structure has been developed. This will provide regional stakeholders and members of the newly constituted governance structure an opportunity to consider whether broader changes to the regional resource adequacy construct would be beneficial to serving the diverse interests of the expanded RTO region.	
	AWEA, Interwest Energy Alliance, Renewable Northwest [*Joint Comments*]	As alluded to elsewhere in the comments, creating active roles for state and local regulatory authorities is a critical component of a Regional RA methodology. AWEA and Interwest encourage the ISO to find additional roles and responsibilities for those states and LRAs that are interested in being active participants in the Regional RA process. For instance, states and LRAs, might wish to take a more active role in coordinating with the ISO to determine the method and specifics for a PRM. AWEA and Interwest recognize that proposing more active roles for the states may be challenging because the future ISO governance structure, and the role of the states in that governance structure, remains unknown at this time. If that role were more clearly defined, it may be easier to envision and propose collaboration with the state and local regulatory authorities on Regional RA. To help address this uncertainty and inform how state and local regulatory authorities might be more involved in Regional RA, AWEA and Interwest encourage the ISO to undertake a thorough review of practices in other multi-state ISO/RTOs such as MISO, SPP and PJM. This background information would help the ISO and stakeholders further consider the best way to provide the states with more oversight and authority in the Regional RA process, while ensuring that the system […] continues to ensure reliability.	The ISO appreciates the feedback from stakeholders on the interdependencies of the initiatives and governance modifications, including the roles and responsibilities of state and local regulatory authorities, required for regional integration. The ISO acknowledges that there is an interaction of policy and governance and included language in the revised proposal that addresses this interplay of state involvement in policy issues. While the direction of regional ISO governance and the roles for the states is yet to be determined, the ISO supports the efforts of the CEC, CPUC, and CA Governors' office to initiate a discussion on governance as they did in their May 6, 2016 public workshop. At the workshop, the ISO legal team presented an overview on the state and regulatory practices of other multi-state ISO/RTO's on policy issues (http://docketpublic.energy.ca.gov/PublicDocuments/16-RGO-01/TN211375_20160505T141047_Revised_Pr

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			esentation_by_Dan_Shonkwiler_5616.pdf). In addition to the legal presentation, there were papers presented at the workshop by some stakeholders recognizing that there may value in a role for state regulators in decision making on certain issues such as TAC and RA. Here is a link to a table, developed for the EIM Transitional Committee, that describes the board composition and selection processes of other ISO/RTO's in the US. http://www.caiso.com/Documents/ISO-RTO_GovernanceStructures-Oct2014.pdf
	CMUA	While CMUA appreciates the revision to the decisional timelines from June to August, the path forward and the alignment with other processes is still not clear. For example, in anticipation of the governance workshop to be held May 6th, 2016, several informal documents were filed advocating a hybrid transitional Board. Some have suggested that this new hybrid board would be vested with the authority to make TAC and RA policy decisions, among others. CMUA has made clear its preferences that more time be allotted to work through hard details of the proposed policy changes, and the need to not make effective any changes to an existing RA paradigm that is working well, absent addition of a major new PTO with accompanying load and resources in its Balancing Authority.	The ISO will be providing more information to stakeholders going forward on how governance will be addressed, including timing issues. There also will be a public process for discussions about governance.
	UTC	[…] The UTC continues to stress that governance is a threshold issue that must be resolved before detailed policy issues are considered by the […] (ISO) Board. […]	The ISO acknowledges the interplay between modifications to governance to support a regional ISO and certain policy changes designed to support a regional market.

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			With the initiation of discussions on governance occurring at the CEC's public workshop on May 6, 2016, the development of governance issues can now proceed in parallel with the key stakeholder initiatives, including RA, pertinent for any utility seeking to join the ISO. The current ISO Board has stated their support for development of a regional ISO. To do that, the Board is inclined to recognize the concerns of other states and consider policy that will support an ISO that provides benefits to the broader region. Typically, the ISO board votes to adopt a policy proposal from ISO management before tariff language is developed. ISO management in turn runs an open stakeholder process to review tariff language to ensure the modifications are consistent with the policy approved by the ISO Board. The filing of tariff amendments at FERC on these regional matters is currently expected by year end. As a result the policy development is occurring in parallel with the discussion on governance.
7(b)	BPA	Please explain how PacifiCorp's ramping needs are decreased by combining the two BAAs as described in pages 55 thru 60. Based on resource stacks and current ramping needs it is hard to determine how a combined system benefits PacifiCorp. More detail would be greatly appreciated.	The ISO has been conducting analyses to provide technical details. In the previous proposal the ISO provided results for system, local and flexible RA requirements for an expanded BAA. In this proposal the ISO

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[Other]			provides results of an MIC analysis for an expanded BAA. This kind of information will be useful in conducting a benefits study.
Regional Benefits	ICNU	As noted in prior comments, ICNU has not necessarily concluded that integration into the ISO of PacifiCorp or any other particular entity will be beneficial to large power consumers. In order to form such a conclusion, it would be necessary to find, among other things, that: 1) joining the market will result in no harm to customers of PacifiCorp or other potential new PTOs; and 2) any incremental benefits associated with the market are shared equitably between market participants. ICNU looks forward to further analysis of the changes proposed by the ISO to determine if such a showing can be reached.	The ISO has been conducting analyses to provide technical details. In the previous proposal the ISO provided results for system, local and flexible RA requirements for an expanded BAA. In this proposal the ISO provides results of an MIC analysis for an expanded BAA. This kind of information will be useful in conducting a benefits study.
	Powerex	In comments on earlier versions of CAISO's proposal, Powerex and other stakeholders suggested steps that CAISO could take to ensure that the regional resource adequacy construct adopted in this initiative serves the interests of those entities joining the expanded RTO footprint. For instance, Powerex encouraged CAISO to provide additional transparency into the efficacy of its existing resource adequacy construct, including whether the existing program has resulted in the competitive, least-cost, and non-discriminatory procurement and commitment of resource adequacy capacity. […] […] Powerex […] encourages CAISO to work with the CPUC to provide additional transparency into the effectiveness of the resource adequacy program. Because there is limited publicly available information and analyses regarding the procurement decisions of California load-serving entities under the existing framework, it can be difficult to assess whether the existing program is meeting its objectives. Releasing additional information in the coming months regarding the costs of meeting existing resource adequacy requirements would help ensure that stakeholders and the members of any	It is the ISO's understanding that a potential new Participating Transmission Owner will work with its respective regulatory authority to provide an analysis of the costs and benefits of joining an expanded BAA. Information, such as the net benefits, will be developed by potential l Participating Transmission Owners outside of this ISO stakeholder process.

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		regional governance structure have the information necessary to both objectively assess the existing resource adequacy program and to identify additional changes that may be necessary or beneficial. This additional information and analysis may be particularly helpful for stakeholders outside of California, who may not be intimately familiar with California's existing regional resource adequacy program.	
	CPUC	CPUC Staff continue to believe that it will be difficult to accurately assess the benefits of regionalization (through the SB 350 benefits study) without first having completed much of the analysis this initiative plans to address. For example, without knowing the peak coincidence factor, the potential benefits from reduced capacity needs in California cannot be understood. Moreover, without understanding the locations and quantities of transmission constraints that would become "internal" to the expanded ISO, it is impossible to know how regionalization will allow for greater contracting across existing state borders.	The ISO will consider these comments as it develops its proposals for this initiative.
	WRA, WGG, NRDC, Utah Clean Energy [*Joint Comments*]	[…] Joint Commenters support a number of key principles. The Regional RA framework should ensure: • […] The Regional RA framework should appropriately capture the benefits of regional diversity and allow the realization of reduced RA requirements due to regional diversity. • The Regional RA methodology should not unduly harm existing RA resources operating in the CAISO today and should generally ensure that existing resources operating in the CAISO today can maintain their RA status under the revised methodology. […]	As discussed in this proposal, the ISO is no longer proposing zonal RA requirements.
	Six Cities	[…] the Six Cities note that analyses of the potential benefits of regionalization pursuant to SB 350 must be aligned with the Zonal RA approach if that is how RA requirements are established for the expanded BAA. The results of regionalization benefits analyses will be distorted or misleading if they do not reflect accurately the RA requirements CAISO expects to apply in recognition of internal transmission constraints.	In this proposal the ISO has provided the results of its MIC analysis, which will help PAC develop net benefits assessments. The ISO will work with PAC to develop information needed for net benefits assessments.

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7(c) [Other] **Jurisdictional** **Concerns**	CPUC	California Public Utilities Code §380 states that "[t]he commission, in consultation with the Independent System Operator, shall establish resource adequacy requirements for all load-serving entities." The code further provides that the Commission must determine reasonable costs associated with maintaining reliability. We do this in part by considering the results of CAISO's local and flexible capacity needs studies and adopting requirements each year. We adopt system RA requirements based on load forecasts developed by the LSEs and the Energy Commission (CEC), and reviewed by the CAISO. CAISO's tariff is consistent on these points and requires that the CAISO collaborate with the CPUC and assist us with setting requirements. It does not provide that the CPUC should defer to the CAISO in planning for the resource adequacy of its jurisdictional Load Serving Entities (LSEs).	The ISO is not proposing to change the manner in which load forecasts are developed for LSEs and envisions that existing methods and arrangements would continue to be used. The ISO believes that it needs to utilize a coincidence factor to capture the full benefits if load diversity across an expanded footprint. The ISO is also reserving the right to make adjustments to submitted load forecasts, but that might occur only after specified criteria are triggered that suggest potential issues, and the ISO is committed to working with LSE's and LRA's to address any issues.
	CDWR	CDWR does not agree that CAISO should infringe on the jurisdiction of the LRAs to establish how their LSEs should perform load forecasting, or to establish whether a particular load forecast is acceptable. […]	The ISO does not believe that its proposal infringes on the jurisdiction of LRAs. This proposal and prior straw proposals explain the need for uniform counting methodologies and a reliability assessment in connection with aa broader regional organization.
	NCPA	NCPA continues to oppose CAISO infringement on the jurisdictional authority of LRAs to determine the planning reserve margins and the resource counting methodologies for their jurisdictional LSEs. The current program has worked well, and CAISO has offered no evidence of a need for change. With that continuing objection noted,	The ISO agrees that a regional RA framework needs to balance the needs of a regional organization with the role of the states with respect to RA and state policy preferences. The ISO proposes to have backstop procurement authority only in a limited number of circumstances, as specified in its tariff, to maintain system reliability.
	WRA, WGG, NRDC, Utah	[…] Joint Commenters support a number of key principles. The Regional RA framework should ensure: • The final proposal can be supported by regulators spanning the Western Interconnection. The final proposal should not diminish the	The ISO agrees that a regional RA framework needs to balance the needs of a regional organization with the role of the states with respect to RA and state policy preferences.

Topic	Stakeholder	Question/Comment	ISO Response
	Clean Energy [*Joint Comments*]	rights of state regulators but should continue to provide mechanisms for the ISO to ensure system reliability is maintained. […]	The ISO proposes to have backstop procurement authority only in a limited number of circumstances, as specified in its tariff, to maintain system reliability.
7(d) [Other] **Retain RA Framework**	Six Cities	The Six Cities appreciate CAISO's concurrence (matrix of stakeholder comments/CAISO responses at 75) that regionalization of CAISO's Day-Ahead and/or Real-Time markets does not require fundamental revision of the bilateral contracting framework for RA procurement or imposition of a centralized capacity market.	The ISO agrees with Six Cities' comment.
	CMUA	CMUA agrees with and supports the CAISO's position that regionalization of the grid does not require centralized capacity procurement mechanisms, and that continuation of the bilateral contracting approach to RA is anticipated.	The ISO agrees with CMUA's comment.
7(e) [Other] **Revise RA Framework**	PG&E	The CAISO market must balance the incentives between forward requirements and the spot market, and work towards a simpler Resource Adequacy paradigm that can be adopted region wide. PG&E believes the CAISO's market should be designed to balance system security associated with forward capacity requirements with the risk of unnecessary over-procurement of resources. One way to balance these competing priorities is through providing financial incentives to the Day Ahead and Real Time energy and ancillary services markets rather than through a resource adequacy payment. Zonal RA Requirements will impose further restrictions in the forward capacity market. PG&E believes the CAISO should focus on simplification rather than creating additional requirements, such as Zonal RA, that are beyond the scope of the current RA program.	As discussed in this proposal, the ISO is no longer proposing a zonal RA requirement. Not having a zonal RA requirement will result in a less complex and simper RA program.

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	XES	Xcel views Resource Adequacy ("RA") as a state-jurisdictional issue that should be managed for compliance on an annual basis, and does not support development of any sort of real-time resource adequacy compliance metrics. We recommend that RA be a capacity sufficiency mechanism used to ensure appropriate readiness and planning for the year and not a real-time dispatch tool. By having enough RA planned in advance, real-time operations will be able to manage the system with sufficient capacity for reliability needs. We believe a real-time design with sufficiency of offered resources should be an inherent part of operations management rather than an RA issue, for instance, through outage schedule coordination and enforcement of physical withholding impact thresholds by the market monitoring function. […]	The RA program is designed to ensure that adequate resources are made available to the ISO in advance of the operating month and operating day. Compliance measures are needed to ensure that this occurs. Under the ISO's Regional RA proposal LRAs and LSEs will continue to have authority to direct procurement.
7(f) [Other]	CPUC	[…] the CPUC Staff requests the CAISO's commitment that amended tariff language that is "generic" (i.e., without references to the CPUC) will not become effective unless and until another BAA joins. The aspects of the CAISO tariff that specify how the CPUC and CAISO collaborate, and what roles belong to which agency, are very important and help clarify the wide range of critical issues on which our two agencies work together as mandated under Cal. Pub. Utils. Code Section 380.	In the "effective date" section under the introduction of this proposal the ISO describes its current thinking on how and when new RA tariff provisions may become effective.
Timeline / Process / Scope **Go-Live Assurance / Effective Date of Revised Tariff**	CLECA	CLECA appreciates the reassurance that tariff language changes would only be made effective "as necessary to support the integration of a new Participating TO." Not all stakeholders may agree, however, on what that "necessary" timing is. The tariff changes should be contingent upon a new Participating TO with the majority of its load outside the state of California joining the CAISO; the effective date of any tariff changes should be subsequent to or contemporaneous with the new Participating TO joining the CAISO. In CLECA's view, "unintended barriers to other, non-California entities" that have not joined should NOT override the interests of the existing ratepayers, existing LRAs and existing Participating TOs. Moreover, certain sections of the CAISO's tariff currently reflect California and federal mandates on collaboration between the CPUC and the CAISO regarding resource adequacy. These tariff sections should not be prematurely revised.	In the "effective date" section under the introduction of this proposal the ISO describes its current thinking on how and when new RA tariff provisions may become effective.

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	NCPA	NCPA is concerned about CAISO's proposed timing for implementing the outcome of this stakeholder initiative, especially if it should happen that no new PTO chooses to join CAISO at this time, or if the timetable is significantly delayed. The current resource adequacy program has been very effective, and has resulted in enhanced reliability for California ratepayers. The obvious catalyst for this stakeholder initiative is the potential integration of PacifiCorp into the CAISO BAA. Other than evaluating what changes to the resource adequacy program may be needed, if any, to enable the expansion of the CAISO BAA, NCPA is unaware of any other compelling reason for modifying CAISO's existing resource adequacy program. Therefore, NCPA strongly believes that the program modifications contemplated in CAISO's regional resource adequacy initiative should only be implemented only if, and when, PacifiCorp formally joins the CAISO BAA. Appropriate provisions need to be factored into this initiative, or the implementation schedule associated with the outcome of this initiative, that clearly state that the resulting changes will only be implemented in the event that PacifiCorp does, in fact, joins the CAISO. Otherwise, the current resource adequacy program is working well and should not be modified.	In this proposal the ISO explains that the new RA tariff provisions would not be effective until a new Participating Transmission Owner joins the ISO. Please see the "effective date" section of this proposal under the introduction section for a discussion of this topic.
	Six Cities	The Six Cities appreciate and concur with CAISO's view, expressed at pages 11 – 12 of the Revised Straw Proposal, that any revisions to the CAISO Tariff to facilitate regionalization should become effective only if and when a new Participating Transmission Owner that cannot be accommodated under the existing Tariff provisions actually joins.	The ISO appreciates the comment in support of this element of the proposal, this comment reflects the ISO's intent.
	SVP	Effective Date of Tariff Revisions (for existing CAISO BAA LSEs): SVP appreciates the CAISO's apparent desire to ensure that any tariff provisions associated with a regional ISO would become effective only as necessary to support the integration of a new Participating TO. That said, SVP believes, based on experience, that one of the examples that the CAISO shared in the last paragraph of Section 4 of its Revised Straw Proposal on page 12 – the option involving making a conceptual-type filing prior to submitting tariff language, as done with MRTU in the prior decade – should not be considered	In this proposal the ISO explains that it intends for new RA tariff provisions to be effective only when a new Participating Transmission Owners joins the ISO and creates an expanded BAA.

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		as a viable option. The current RA program does not need to be modified unless and until PacifiCorp does join the CAISO.	
	CMUA	CMUA remains concerned that uniformity sought on certain issues is not necessary, and may erode Local Regulatory Authority discretion needlessly. Because of this concern, it is critical to CMUA that no tariff changes relevant to RA (or any other issue for that matter) be effective unless there is certainty that PacifiCorp or another major Balancing Authority Area is solidly committed to consolidation with the CAISO, evidenced by necessary regulatory approvals. CMUA does not support a filing of possible Tariff revisions this year, for example, when PacifiCorp will not have even commenced its state regulatory approval process.	In this proposal the ISO explains that tariff changes related to RA would not be effective unless there is certainty that PacifiCorp or another major Balancing Authority Area is committed to consolidation with the ISO.
7(g) [Other] **MOO / RAAIM / Local RA / Flexible RA**	XES	[…] In other RTO markets where we operate, there is a must-offer obligation for designated network resources. For example, in SPP each LSE has a minimum offer obligation equal to their forecasted demand plus their share of operating reserve obligations. In MISO, all available designated network resources have an offer obligation. Obviously, certain conditions and availability considerations must be able to modify the offer obligations, for instance on run-limited resources, an opportunity cost component is allowed into the offer curve to ensure critical resources remain available for critical periods. We note that other regions, despite high renewable penetration, have not elected to define flexibility as a long-term resource adequacy issue and instead address the need for sufficient ramping capability through operational anticipation of headroom and operating reserve criteria. We recommend that issues of flexible capacity should be left to short-term processes, closer to real-time, because flexible capacity facilitates optimal dispatch of the market, and isn't needed to demonstrate capacity sufficiency. […]	The ISO tariff has flexible RA requirements and the ISO is not proposing to change those tariff provisions. Flexible requirements are an important element of RA given the changing nature of the resource fleet.
	Six Cities	The Six Cities agree with CAISO's conclusion that currently effective elements of the RA program not discussed in detail in the Revised Straw Proposal (such as must-offer obligations, criteria for Flexible RA categories,	Thank you for the comment. It reflects what the ISO has stated as the ISO's intent, which is

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		and RAAIM provisions) can and should be applied in an expanded BAA "as is" […]. The Six Cities appreciate CAISO's confirmation at pages 30, 76, and 85 of the matrix of stakeholder comments/CAISO responses that these aspects of the RA program will be applied consistently throughout the expanded BAA.	that requirements will be applied uniformly across the expanded footprint.
	CMUA	CMUA supports the proposal, as it understands it, that the currently application MOO and RAAIM will apply uniformly across any expanded BAA.	The ISO intends that the currently application MOO and RAAIM will apply uniformly across any expanded BAA.
7(j) [Other] **Virtual Bidding**	Six Cities	The Six Cities' March 16, 2016 comments on the Straw Proposal noted that in light of the potential for gaming and manipulation that may occur as a result of internal transfer capability constraints, the Six Cities strongly oppose any extension of virtual bidding opportunities and, in particular, oppose allowing submission of virtual bids at any locations affecting or affected by internal transfer capability constraints. The Revised Straw Proposal does not discuss if or how virtual bidding would be implemented in the expanded BAA, but the matrix of stakeholder comments/CAISO responses asserts at page 76 that the proposed Zonal RA concept "would ease these potential concerns." The Six Cities do not see how potential adoption of the Zonal RA concept addresses concerns relating to the effects of virtual bidding at locations affecting or affected by internal transfer capability constraints. The Zonal RA construct would address year-ahead and month-ahead capacity procurement within specified zones. Virtual bids, which generally are treated the same as energy bids, are placed in the Day-Ahead market at individual pricing nodes and are reversed in the FMM. There is no apparent connection between the Zonal RA forward capacity construct and virtual bidding in the Day-Ahead market, and the Six Cities' concerns about the potential for abuse if virtual bidding is extended throughout the expanded BAA have not been eased.	The ISO will not be pursuing zonal RA requirements for the reasons explained in this proposal. With that fact in mind, the ISO also would simply state this concern would not have been any issue even if were the ISO to have created zonal requirements. RA concepts are a planning horizon issue, because the zonal requirements would have been a planning horizon concept, there would not be any sort of zonal constraint included within the ISO operation horizon and would not be enforced in the Day Ahead, FMM, or Real Time markets. Zonal RA would only be a planning convention and would not be any connection to Virtual Bidding, as the Six Cites points out. There would be no potential to do any virtual bidding at some points related to zonal RA.