



**Reliability Services
Issue Paper**

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1. Introduction

This initiative will look holistically at the ISO's backstop procurement authority to ensure sufficient resources with the right capabilities are offered into the ISO markets to meet local, flexible, and system capacity requirements.¹ Specifically, the initiative will focus on; market design changes necessary to create an efficient and durable market mechanism for the procurement of backstop capacity, necessary conforming changes to various Resource Adequacy (RA) processes in the context of a market-based backstop mechanism, and finally, enhancements to rules specific to RA resources. There are two tariff sections that primarily define the ISO authority to backstop required RA capacity and define the eligibility and market participation rules specific to these RA resources. Section 40 codifies RA requirements and processes, and section 43 defines the ISO's backstop mechanism for ensuring resource adequacy.² Together, these sections outline the rules for scheduling coordinators for load serving entities resources that provide RA capacity. These sections also define how scheduling coordinators for load serving entities meet their respective Local Regulatory Authority and ISO capacity requirements, how qualified resources may provide RA capacity to meet ISO real-time reliability needs, and the incentive mechanism in place to motivate efficient market participation from RA resources.

Several specific events compel the ISO to consider changes to these sections this year. First, section 43 of the tariff, the ISO's backstop authority through the Capacity Procurement Mechanism (CPM) expires in February 2016. The ISO must be able to procure capacity to maintain reliability if sufficient resources are not otherwise provided or made available. Currently, the CPM provisions address this when: (1) load serving entities fail to meet resource adequacy requirements due to insufficiency or operational constraints, (2) resource adequacy requirements are met, but procured resource adequacy resources are ineffective at meeting local reliability constraints, and (3) the ISO requires non-resource adequacy capacity for a significant event, exceptional dispatch, or risk-of-retirement event. The price the ISO currently pays to backstop resources is an administratively set rate that will also expire. This price is also used in section 40.9 of the tariff, which describes the RA Availability Standards and establishes non-availability charges and availability incentive.

Second, the ISO and CPUC developed and approved the Joint Reliability Plan to increase transparency, reliability, and market efficiency in recognition that the west's energy landscape is undergoing fundamental change, especially in California. Increased renewable generation and compliance with once-through-cooling regulations necessitates that energy planners explicitly account for specific operational capability requirements in addition to peak demand. Furthermore, there has been a general recognition that non-generation resources such as demand response, energy efficiency, and storage are valuable resources to meet state environmental policy goals and energy grid operational requirements. These necessitate

¹ The resource adequacy provisions of the ISO tariff work in conjunction with resource adequacy requirements adopted by the California Public Utilities Commission and other provisions of California law applicable to non-CPUC jurisdictional Load Serving Entities.

² Additionally, ISO Tariff section 9 contains the rules for coordination of outages for RA resources.

increased coordination between agencies and a longer term planning horizon for all market participants.

Third, given California's continuing energy landscape transformation, the CPUC and ISO previously identified the need for adequacy rules to account for an explicit capacity requirement for operational flexibility. The ISO is proposing changes to account for flexible resource adequacy requirements in a stakeholder initiative, Flexible Resource Adequacy Criteria and Must-Offer Obligation requirements (FRAC MOO). The FRAC MOO initiative will add an additional category to the CPM and allow the ISO to backstop for flexibility requirements in addition to the current backstop for local and system requirements. This initiative does not address the replacement and substitution rules for flexible RA resources or create availability incentive provisions for flexible capacity similar to the current availability provisions for generic (system and local) capacity.

Fourth, as more use-limited resources are used by load serving entities to meet resource adequacy requirements there is an increasing need to enhance and clarify the rules surrounding these resources. The rules must ensure that the ISO is getting the right resource capability at the right time and in the right location to efficiently operate the grid. Use-limited resources include resources with environmental or significant operational limits. As use-limited and preferred resources provide a greater share of the required capacity and displace traditional resources, it is imperative that these resources provide the operational characteristics needed to reliably operate the grid. It is equally important that proper incentives are introduced to induce these resources to provide the energy and operational characteristics required during the periods when they are most needed.

Finally, as a result of FERC Order 764, the ISO has made significant changes to the real-time energy market and introduced a binding 15 minute market. This, in combination with the upcoming Flexible Ramping Product initiative,³ which reserves flexibility for the real-time optimization, will help to provide the ISO with the required operational capabilities necessary to efficiently and reliably operate the energy grid. These market enhancements both provide the ISO with the ability to optimally dispatch the resources that are offered into its markets and provide incentives for resources to offer needed operational attributes. However, they do not ensure that there will be sufficient resources with the appropriate attributes offered into the markets to meet forecast operational needs. The LRA RA programs and ISO backstop procurement mechanisms ensure that sufficient capacity with the right operational attributes are offered into the ISO markets. The RA Availability Standard rules (also known as the Standard Capacity Product and Standard Flexible Capacity Product availability metrics) must work with the ISO energy market rules in order to provide incentives for efficient RA resource participation.

The ISO is not proposing a wholesale redesign of its resource adequacy tariff provisions and processes. The existing resource adequacy framework has developed and evolved over several

³ More information on the Flexible Ramping Product initiative can be found here:
<http://www.caiso.com/informed/Pages/StakeholderProcesses/FlexibleRampingProduct.aspx>

years in collaboration with the CPUC and the other LRAs. The Joint Reliability Plan and the ISO's Reliability Services initiative builds on this foundation.

In this initiative, the ISO will focus on the changes essential to assure that it maintains an efficient and durable backstop procurement capability through appropriate pricing mechanisms, and to evolve resource adequacy rules to be inclusive of all resource types. The central framework of the resource adequacy rules and current CPM designation process are the basis for additions needed to move forward with this goal. Specifically, the ISO proposes that the scope of this initiative include the following topics:

1. Enhance the minimum eligibility criteria for system, local, and flexible RA capacity where needed.
2. Modify must-offer rules where required, in particular for use-limited resources, in order to standardize must-offer requirements for different technology types, as is feasible.
3. Create a durable CPM pricing market mechanism that would replace the current administrative price when it expires in February 2016.
4. Synchronize replacement and substitution rules with the new CPM pricing market mechanism as required.
5. Modify or create new incentive mechanisms for energy market participation for system, local, and flexible capacity.
6. Update the CPM to include multi-year backstop authority as well as evaluate the risk-of-retirement designation in the context of a multi-year forward RA procurement requirement.

This paper describes each of the topics identified above, as well as additional issues surrounding the proposed scope of this initiative. Given the large scope of this initiative, the ISO proposes phasing different aspects based on their dependencies with each other. The ISO envisions phase 1 would be presented to the ISO Board of Governors for a decision late in 2014 or early 2015. Phase 2 would continue in conjunction with the CPUC multi-year RA proceeding and be presented to the ISO Board of Governors for a decision later in 2015.

Phase 1

Phase 1a: Standardize eligibility criteria and must-offer requirements for local and system RA resources (flexible RA eligibility criteria and most-offer requirements determined in FRACMOO initiative)

Phase 1b: Create durable CPM pricing mechanism for backstop capacity procurement

Phase 1c: Enhance incentive mechanisms for RA resource market participation

Phase 2

Phase 2a: Update the CPM to include multi-year backstop procurement authority

Phase 2b: Evaluate risk-of-retirement backstop procurement authority

The paper also describes in more detail relevant background and the next steps in the stakeholder process.

2. Background

California's resource planners are preparing for unprecedented changes to the bulk power system. Although the current reliability framework has generally provided for reliable operation of the grid, there is an acknowledged gap in future forward procurement processes as the state shifts toward meeting its energy needs relying more on use-limited and variable energy resources.

Joint Reliability Plan

In 2013, the CPUC and ISO staff and management held discussions to explore enhancements to the existing resource adequacy structure to ensure ongoing reliability of California's electric system. These discussions resulted in the development of a joint reliability framework that the CPUC and ISO discussed with stakeholders at a joint workshop as well as at a technical conference hosted by FERC. The Joint Reliability Plan arises from these efforts and describes three initiatives that the CPUC and the ISO plan to examine to ensure long-term grid reliability in California: (1) establish multi-year resource adequacy requirements for system, local and flexible capacity; (2) replace the ISO's CPM with a market-based mechanism; and (3) develop unified long-term reliability planning assessment. The guiding principles for this plan include:

- Providing the ISO balancing authority with sufficient capacity resources to satisfy system, local and flexible capacity needs.
- Accommodating resource procurement undertaken to meet California's policy mandates and objectives and pursuant to CPUC decisions and orders.
- Enhancing participation by preferred resources in energy and capacity markets.
- Minimizing the risk that resources will seek to retire due to market failures, rather than environmental or design life limitations.

The CPUC voted unanimously to continue collaboration with the ISO on the Joint Reliability Plan at its November 14, 2013 business meeting and the CAISO Board of Governors voted unanimously to adopt the Plan at its December 11, 2013 meeting.⁴

CPM Expiration

The ISO needs to replace its existing backstop capacity procurement mechanism that expires at the end of February 2016, per section 43.1.1 of the tariff. The ISO tariff specifies an administrative rate of \$67.50/kW-year to compensate resources under the CPM. That rate will increase automatically to \$70.88/kW-year on February 16, 2014. Under ISO tariff section 43.7.2, if a resource believes the administrative price "will not compensate a resource for its going forward costs," then the resource may inform the CAISO of what proposed higher CPM Capacity price would compensate the resource for its going forward costs. The individualized rate may be paid subject to FERC approval.

⁴ The ISO Board memo requesting approval of the Joint Reliability Plan, which includes the Joint Reliability Plan as an appendix, is available at:
<http://www.caiso.com/Documents/DecisionJointReliabilityPlan-Memo-Dec2013.pdf> .

In conditionally accepting the ISO's current CPM proposal, the Commission noted that units providing backstop capacity should be compensated similarly to units providing RA capacity because they are providing similar services. The Commission recognized that RA compensation can fluctuate over time based on conditions but noted a limitation of a fixed price was that it "does not take into account these potential fluctuations over time."⁵

In 2012, the ISO proposed to implement an interim flexible capacity and local reliability resource retention (FLRR) mechanism. The FLRR was meant to build upon the CPM and would have compensated resources based on an administrative rate. In rejecting the ISO proposal, the Commission encouraged "CAISO and its stakeholders to focus on the development of a durable, market-based mechanism that provides incentives to ensure that resources with the adequacy and operational needs CAISO requires are available to meet system needs."⁶

Flexible Resource Adequacy Criteria and Must-Offer Obligation (FRAC MOO)

The ISO is planning to complete the FRAC MOO stakeholder initiative by March 2014 so that the key flexible capacity measures described below, along with the necessary tariff revisions, can be in place for the 2015 RA compliance year. Under this initiative, the ISO has been working with stakeholders to implement the following four measures necessary to satisfy the balancing area's growing flexible capacity needs:

- *Requirement Determination and Allocation Methodology*: A methodology and process by which the ISO determines the overall flexible capacity requirement for the ISO system. A flexible capacity allocation methodology will apply to all LRAs in the ISO balancing area.
- *Flexible Capacity RA Showings, Assessment, and Resource Counting*: Requirements for SCs for load serving entities to provide RA showings to the ISO demonstrating adequate flexible capacity procurement. Similar to the current RA program, each SC for a load serving entities will include a showing of its flexible capacity procurement in its RA showing submitted to the ISO. Resources used by SCs for load serving entities to meet their flexible capacity requirements will make submissions confirming they have agreed to supply flexible capacity. An assessment of the adequacy of an SC for a load serving entities' flexible capacity showing towards meeting its flexible capacity requirement, based on the ISO's allocation of its overall requirement to a load serving entities' LRA and the LRA's allocation of its share to the load serving entities.
- *Must-Offer Obligations*: Must-offer obligations for flexible capacity resources that generally require resources used to meet flexible capacity requirements to submit economic energy bids into the ISO's day-ahead and real-time markets for the time period from 5:00 a.m. through 10:00 p.m. These offer-obligations are technology neutral and specifically designed to address the ISO reliability needs.
- *Backstop Procurement*: ISO backstop procurement authority that allows the ISO to procure flexible capacity on a one-year forward basis based on deficiencies in load

⁵ *Cal. Indep. Sys. Operator Corp.*, 134 FERC ¶ 61,211, P 58 (2011).

⁶ *Cal. Indep. Sys. Operator Corp.*, 142 FERC ¶ 61,248, P 68 (2013).

serving entities' annual or monthly flexible capacity procurement that result in cumulative deficiencies in the overall supply of flexible capacity made available to the ISO.

Highly Ranked Initiatives

The ISO's Stakeholder Initiatives Catalog documents current and proposed policy changes and enhancements to the ISO market design and infrastructure planning processes. Each year the ISO performs an assessment of these initiatives and evaluates each initiative based on overall benefit and feasibility in order to determine a road map for the following year. Stakeholders provide feedback on the discretionary initiatives for the ISO to consider when creating this road map. There are several initiatives the ISO proposes to consider within the Reliability Services initiative. Two of these were within the top five highly ranked initiatives by all stakeholders.

(1) Standard Capacity Product Enhancements. This initiative would develop a monthly rather than annual charge for the Standard Capacity Product that reflects the market value of resource availability. The intent is to create more accurate price signals to participants. This will be taken into consideration in the ISO proposed design for phase 1c- Enhance incentive mechanisms for RA resource energy market participation.

(2) Modify Resource Adequacy Replacement Rules. This initiative would seek to change the rules requiring local or flexible capacity shown as generic system capacity to be replaced at the higher quality level during an outage rather than merely with an alternative generic system capacity resource. As noted in the introduction there will be a need to synchronize the current replacement and substitution rules with the new CPM pricing market mechanism. The proposed modifications therefore will be taken into consideration in the ISO proposed design for phase 1b- Create durable CPM pricing mechanism for backstop capacity procurement.

Other initiatives that are in the Stakeholder Initiatives Catalog and are appropriate to address include (1) Use-limited Resource Must-Offer Obligation, (2) Standard Capacity Product III, to create must-offer requirements for demand response and (3) Distributed generation and other small scale resource adequacy must-offer obligation; all of which will be included in phase 1c of this stakeholder process.

3. Plan for stakeholder engagement

The ISO proposes the following initial schedule for the Reliability Services initiative. Once the ISO has more fully specified the scope of the initiative and received stakeholder feedback, the ISO will provide a longer-term stakeholder engagement plan. Additionally, based on stakeholder feedback, the ISO may conduct stakeholder workshops in addition to meetings to discuss the proposal. Given the large scope of this initiative, the ISO has planned for the initial meeting on the draft straw proposal to be a two-day meeting.

Date	Event
Tues, 01/28/14	Issue Paper Posted
Tues, 02/04/14	Stakeholder Meeting on Issue Paper
Tues, 02/18/14	Issue Paper Comments Due
Thurs, 03/20/14	Straw Proposal Posted
Wed, 03/26/2014 – Thurs, 03/27/2014	Stakeholder Meeting on Straw Proposal
Thurs, 04/10/2014	Straw Proposal Comments Due
Dec 2014 or Q1 2015	Expected Board of Governors Decision on phase 1

4. ISO system reliability

There are seven fundamental elements of resource adequacy the ISO includes in its tariff to protect system reliability and manage the grid effectively:

- 1) A procedure for forecasting system conditions related to peak demand and net-load ramp requirements.
- 2) A default reserve margin applicable when LRAs have not stated their own reserve margin.
- 3) Deliverability requirements based on transmission limitations.
- 4) Criteria for determining resource eligibility and the amount of resource capacity that will satisfy the reserve margin.
- 5) Plans developed by the load serving entities that identify how they have met their resource adequacy requirements through a portfolio of resources.
- 6) Rules under which the resources identified in the plans are made available to the ISO market, including how outages are requested and reported and when replacement RA capacity should be provided, and when the ISO will automatically submit bids for RA resources which fail to provide their own bids. These rules also include, at least for some resources, a mechanism (standard capacity product availability) to reward or penalize resources based on their availability.
- 7) A compliance program that ensures that load serving entities comply with the resource adequacy program established by their respective Local Regulatory Authority (LRA) and that precludes the load serving entities from inappropriately relying on the resource procurement of other market participants. This includes ISO authority for backstop procurement.

These are comprehensively defined in both the tariff and Reliability Requirements BPM. This initiative will impact ISO processes related to items 4 through 7.

5. Proposal principles

The ISO proposes to evaluate any changes in resource adequacy holistically and develop a proposal using the following principles:

Transparency

Where possible, the ISO intends to make backstop requirements and costs transparent to all market participants. The current RA procedures generally provide a clear guideline as to when the ISO may procure backstop capacity and, when possible, provides market participants opportunities to cure deficiencies before the ISO exercises its backstop procurement authority. However, the current RA procedures do not provide a clear price signal on the value of backstop capacity. Backstop capacity may have different values based on the specific type of capacity (local, system or flexible) and time-period for which it must be procured. A goal of this initiative is to develop a market-based mechanism that will reflect these differences and appropriately signal their respective values to market participants.

Because there is limited experience with flexible capacity there is significant lack of transparency in the value of flexible capacity relative to generic capacity. One of the challenges in developing an administrative backstop capacity price and market participation incentives for flexible resource adequacy resources is due to this lack of transparency. Ideally, any market-based mechanism for backstop procurement would reflect the difference in value between flexible and generic capacity, which is information that could be used in the reevaluation of the availability incentive mechanism market design.

Incentivize behavior

Resource adequacy capacity is only useful to the extent that it is made available to the day-ahead and real-time markets. It is vital that any market design for resource adequacy create appropriate must-offer requirements and incentives for RA resources to efficiently participate in the ISO's energy and ancillary services markets. The design of a resource adequacy program should take into account, but not exclusively rely on, energy market prices as an incentive for RA resources to optimally participate. Resources which are committed by load serving entities or procured through ISO backstop mechanisms to provide RA capacity will have a higher duty to provide the needed services in energy markets and likely will be subject to additional incentive mechanisms.

Simplicity

As the ISO reviews changes to ISO's backstop procurement rules, it will do so under the fundamental guiding principle that reducing complexity is in itself a tool to increase market efficiency and grid reliability. Recently, the addition of the outage replacement rule to the ISO system reliability processes has created increased complexity to the process for load serving entities and suppliers to identify and procure resources to meet ISO reliability needs. The outage replacement rule has greatly increased the confidence of the ISO that the monthly RA requirement amount of capacity will be available every day during the month. There is potential value, however, in reforming ISO reliability requirement processes to both simplify and unify the backstop processes that occur due to capacity outages while keeping the fundamental replacement rule framework in place.

Comparable treatment

The ISO intends that a market-based mechanism for backstop capacity procurement will give comparable treatment to all resource types that meet the specific ISO needs for system, local, and/or flexible capacity being procured. This could include, conventional, renewable, distributed, demand response, storage and use-limited resource types that are able to provide the capacity needs for the specific backstop requirement. Rules regarding eligibility to qualify as a RA resource and obligations once procured as an RA or backstop resource will need to be evaluated to ensure that all resource types can equitably and feasibly participate in a market for backstop capacity.

Local Regulatory Authority alignment

The ISO will strive to align rules and requirements with those of Local Regulatory Authorities that have load serving entities participating in the ISO markets.

Cost allocation guiding principles

The ISO developed cost allocation guiding principles in a separate stakeholder process. These principles now serve as the standard set of cost allocation principles the ISO applies to its market design initiatives. Where applicable, this initiative will rely on this set of cost allocation principles, which include: (1) Causation, (2) Comparable Treatment, (3) Accurate Price Signals, (4) Incentivize Behavior, (5) Manageable, (6) Synchronized, and (7) Rational.

6. Standardized products

In order to create a technology neutral platform to procure backstop capacity through a market mechanism, resources must be able to provide comparable reliability to the ISO system. A megawatt from one resource technology type must be comparable to a megawatt from a different resource technology type in order for the ISO to optimize backstop capacity based on both operational requirements and economics. The ISO has must-offer requirements for resources participating as RA capacity and participation requirements for determining resource eligibility to qualify as an RA resource. Together these requirements allow the ISO to set the minimum operational requirements for local, system, and flexible RA resources.

Must-offer obligation

For some resource types the ISO currently only has limited rules in place to compel RA resources to offer into the ISO energy market. With this in mind, the Reliability Services initiative may encompass multiple stakeholder sub-initiatives that address must-offer requirement enhancement. The following initiatives are ones that the ISO is considering for inclusion as part of the Reliability Services initiative related to standardizing must-offer requirements.⁷

1. Use-limited Resource Must-Offer Obligation for local and system RA capacity

⁷ These are described in more detail in the stakeholder catalog:
http://www.caiso.com/Documents/Draft2013StakeholderInitiativesCatalogRevisedJan28_2014.pdf

2. Standard Capacity Product III, to develop availability requirements demand response resources providing local or system RA capacity
3. Distributed generation and other small scale resource adequacy must-offer obligations for local and system RA capacity

Eligibility requirements

The ISO has system eligibility requirements in place for resources to qualify as RA capacity that apply only where the CPUC or LRA has not established and provided to the ISO their specific eligibility criteria. In the future, flexible resources must meet additional eligibility requirements beyond system requirements to qualify as flexible RA. Accordingly, these are being developed within the FRAC MOO initiative. Additionally, in the Transmission Planning Process, the ISO has developed eligibility criteria for non-conventional resources to qualify as a transmission alternative. It may be appropriate for these criteria to be used as eligibility criteria for non-conventional resources to be able to qualify as local RA capacity.

7. Capacity Procurement Mechanism

Ultimately, the CPM is the backbone of the ISO's backstop procurement authority to ensure the ISO has enough resources available to the energy markets. It is the nexus for (1) backstopping deficient capacity needed for reliability from year-ahead planning to real-time needs; (2) resolving deficiencies due to outages (either through providing backstop replacement RA capacity when load serving entities don't provide required RA replacement capacity for planned outages or allowing the ISO to procure additional resources to meet significant events in real time); and (3) incenting resource adequacy resources to bid into the energy market through using the CPM price as a basis for penalties and payments for resource availability. Reliability and market economics are inexorably linked, and without the right incentives in place, even the most stringent capacity requirements may not provide the right capacity at the right time and in the right place.

The ISO plans on maintaining the existing backstop procurement authority contained in CPM for backstop procurement; however, as described in the Joint Reliability Plan, the ISO will evaluate options for creating a market-based pricing mechanism for elements of the CPM. The ISO anticipates that only minor changes will be needed relating to the existing backstop authority on the issue of when a CPM designation may be issued. With the exception of the creating procurement authority for deficiencies in flexible RA capacity and multi-year forward capacity (should a multi-year forward resource adequacy requirement be adopted) the ISO proposes the categories of CPM designations themselves not be reevaluated.

7.1 Existing Backstop (CPM) Overview

The existing CPM has six circumstances where the ISO has the authority to designate eligible capacity to provide CPM services.⁸ These are listed as items 1 – 6 in Figure 1. Additionally included in the list are two new (pending) circumstances requiring backstop (described below).

⁸ These are described in detail in Tariff section 43.

Figure 1: CPM backstop events

1. Insufficient local capacity in an load serving entities' annual or monthly resource plan
2. Collective deficiency of capacity in a Local area
3. Insufficient system capacity in an load serving entities' annual or monthly resource plan
4. Significant event
5. A reliability or operational need for an Exceptional Dispatch
6. Risk of retirement
7. Insufficient flexible in annual or monthly resource plan (pending)
8. Insufficient multi-year forward capacity (pending)

Beginning in the 2013 RA year, the ISO may require load serving entities to provide replacement RA capacity for RA resources with planned outages during the RA month, and may use the CPM to backstop any replacement requirements which the load serving entities fail to provide to the ISO after a cure period designed to allow them to bilaterally procure their replacement needs.

Additionally, with the implementation of the ISO's initiative on FRAC MOO the ISO anticipates adding insufficient flexible in annual or monthly resource plan (item 7) to the tariff as a criterion for procuring capacity under CPM. If the CPUC adds a multi-year requirement to their RA plan, then eventually the ISO would presumably also have to add (item 8) insufficient multi-year forward capacity CPM designation rules.

7.2 Use of existing CPM authority

The CPM allows the ISO to issue a CPM designation under three different timeframes, annually, monthly, and unsystematically in the case of a reliability event. In the annual (including risk of retirement) and monthly timeframe the ISO provides the opportunity for load serving entities to cure deficiencies before using the procurement mechanism itself. The opportunity for either load serving entities or suppliers to resolve their deficiencies allows market participants to bilaterally contract for capacity at less than the current CPM price. During unsystematic reliability events, however, such as a significant event or exceptional dispatch, there is no cure opportunity provided because the nature of the ISO's procurement need is not compatible with the additional time required to provide for load serving entities curing the need.

7.3 Compensation for backstop capacity

Compensation for backstop capacity has been a contentious and complex issue. Much of the debate has revolved around whether such compensation was designed to provide incentives for new investment or to buy available non-RA capacity from existing plants.⁹ This is one of the fundamental issues surrounding an administrative backstop price for capacity. Currently, the

⁹ For more information on the CPM history: http://www.caiso.com/Documents/IssuePaper-UpdatingICPM_ExceptionalDispatchPricingandBidMitigation09-Jun-2010.pdf

ISO has an administrative rate for CPM designations and resources designated under the CPM have the option to file at FERC for any going forward fixed costs not covered by the administrative rate. Moving forward, the ISO will evaluate market design options for a market-based procurement mechanism for backstop capacity.

7.3.1 Market-based rate

A market-based rate for backstop capacity should ideally both efficiently price backstop capacity and provide transparency into the relative value of resources. It should do this based on the location, capability, and time period of the RA deficiency requirement. The goal of designing a market-based backstop mechanism is to design one that more efficiently procures and transparently values different capacity types. As noted above, the CPM allows the ISO to issue a CPM designation under three different timeframes, annually, monthly, and unsystematically in the case of a reliability event. There are unique challenges to creating a market-based mechanism for backstop capacity in each of these timeframes.

Annual CPM designations

Any annual market mechanism will eventually need to be coordinated with the multi-year requirement and backstop authority. The ISO has identified the following issues related to an annual mechanism:

- Given the interaction between the annual and multi-year market mechanism, should these be developed in conjunction or as completely separate mechanisms?
- What interactions between the annual and multi-year market mechanism should the ISO consider when designing the mechanisms?
- What are market power concerns specific to an annual auction?

Monthly CPM designations

A monthly market mechanism could be created to take in account deficiencies due to planned and long-term forced outages. This would potentially lead to a mechanism that optimizes bids and offers for less than a full month. The ISO has identified the following issues related to a monthly market mechanism:

- Should the ISO consider a market mechanism design that can optimize bids and offers for less than a month? What time period should the ISO consider evaluating in a market mechanism?
- What could the ISO do to reduce market participant transaction costs related to outage replacement?
- Given the ability of the ISO to optimize total backstop procurement through a market mechanism, should the ISO consider changing the RA processes surrounding the cure period length of time?
- What are market power concerns specific to a monthly auction? How do these concerns change if the ISO uses a market mechanism for a shorter-time frame to account for outages?

Unsystematic CPM designations

Unsystematic CPM designations can be issued for various lengths of time. These designations are also often due to an event that requires an immediate designation. Previously, under an administrative rate whether the capacity was needed for a single day under exceptional dispatch or throughout the month as a monthly deficiency the capacity was paid the same monthly rate.

- Should the ISO consider shortening the length of time allowed in the market mechanism?
- What should the ISO take into consideration when issuing a CPM designation for an event that requires an immediate designation?
- How should the annual and monthly backstop capacity price relate to the backstop price for an unsystematic event?
- What are market power concerns specific to an unsystematic market mechanism?

The ISO has identified additional general issues surrounding a market-based rate:

- There are currently 6 events that can occur for the ISO to use their CPM backstop authority. How should a market mechanism vary across events? How should these mechanisms and their prices interact?

7.3.2 Voluntary market mechanism

There may be benefits in investigating the development of a voluntary market mechanism within the ISO's monthly backstop authority in addition to the multi-year forward timeframe. The most frequent use of the ISO backstop authority is to determine the deficiency in the monthly RA process taking into account planned and long-term forced outages. Beginning in the 2013 RA year the ISO implemented a replacement rule for RA resources. With this new policy, load serving entities which include in their monthly RA showing resources with a planned outage during the month may be required to provide replacement capacity during the outage. The ISO then indicates to load serving entities the time period and amount of capacity that needs to be replaced in order for the ISO to meet the local and system requirements. If a load serving entities fails to provide required replacement capacity, the ISO may procure backstop capacity and allocate the costs to the load serving entities. There may be value in setting up voluntary procurement opportunity in the monthly timeframe during this cure period. This would provide an opportunity for market participants to procure capacity with lower transaction costs, increasing market efficiency, and potentially provide a transparent, market-based price which could be used as the ISO backstop capacity procurement price. The ISO has identified additional issues surrounding a voluntary market mechanism:

- Are there benefits to a voluntary market mechanism where both buyers and suppliers could provide bids?
- It is useful to consider a voluntary market mechanism within a monthly market mechanism?
- Could the use of a voluntary market mechanism in addition to a mandatory market mechanism mitigate any market power concerns?

- How could the replacement rule be altered to allow for a voluntary market mechanism?
- Should the ISO evaluate the time allowed for load serving entities' to cure deficiencies given the market-based mechanism proposed construct?

7.4 CPM durability

The ISO and stakeholders have spent significant resources in the past repeatedly redefining the CPM processes and price. The ISO believes that it is preferable to establish a permanent mechanism through this initiative, based on market design principles.

8. Resource availability incentive mechanisms

Reliability and market economics are inexorably linked, and a reliable grid will also have the right incentives in place to ensure the market has access to the right resources at the right time, in the right location. The ISO currently provides incentives for resource adequacy resources to participate in the energy market through payments for availability and charges for non-availability. This is in recognition that RA resources have a higher obligation to the energy market than non-RA resources. The CPM price is used as the payment for compliance and penalty for non-compliance to the ISO required availability standards. Given the CPM pricing mechanism is being redesigned, the ISO proposes to reevaluate the mechanism it uses to provide incentives rather than simply mapping the new CPM price to the current mechanism.

The ISO's availability incentive mechanism tracks the availability of resource adequacy capacity, "available" being defined as capacity not on forced outage or affected by an ambient derate, during 5 consecutive hours of each non-weekend, non-federal holiday day. The hours themselves are determined seasonally based on historical coincident peak-load data. This availability is translated into a resource-specific monthly availability percentage. There are detailed rules for how outages and de-rates count toward determining a resource's compliance. Resource availability during these hours is compared against the historical availability average during that month for the past three years. A resource that has availability more than 2.5% above the average is eligible for an availability incentive payment, while a resource that has availability less than 2.5% below the average is subject to a non-availability charge.

Currently, not all RA resources are subject to the ISO's availability incentive mechanism. For example, resources with contracts prior to 2009, resources with a Pmax less than 1 MW, and demand response resources are not subject to the incentive mechanism.

The existing availability incentive mechanism is based only on outage rates. Due to the specific outage rules for use-limited resources, the incentive mechanism has limited ability to ensure that use-limited resources are available to the ISO markets through a submitted bid. Unlike other RA resources, the ISO does not create bids for use-limited resources if not submitted by the resource.

Additionally, the ISO FRAC MOO initiative (planned to go to the ISO Board of Governors in March) puts into effect for the 2015 RA compliance year flexible capacity categories and related must-offer requirements. However FRACMOO will not establish a mechanism to incent

resources to meet flexible RA eligibility criteria or to comply with the must-offer requirements. The ISO will need to create a mechanism to incent market participation specific to grid flexible capacity requirements.

9. Multi-year requirement

In the Joint Reliability Plan, the CPUC committed to establishing a multi-year resource adequacy requirement for system, local, and flexible capacity. Likewise, the ISO would extend its backstop capacity procurement authority in alignment with a forward resource adequacy requirement. This is proposed to be done in conjunction with the CPUC proceeding.

9.1 Risk of retirement

While a three year forward LRA resource adequacy obligation with ISO authority to backstop against deficiencies will mitigate the risk of disorderly retirement, it does not eliminate the risk entirely. If a resource plans to retire because it does not have a capacity contract and the ISO finds it will be needed 4 or 5 years in the future, there is no process within this initiative that will address this issue.

10. CPUC coordination

Moving forward with the Joint Reliability Plan will require close coordination between the CPUC and ISO. The CPUC plans to open a proceeding to examine procurement obligations in a multi-year forward timeframe. The ISO will participate in this proceeding concurrently with undertaking this initiative and will consider necessary changes to accommodate changes in the CPUC's resource adequacy rules.

11. Next Steps

The ISO will discuss this issue paper with stakeholders during a meeting to be held on February 4, 2014. Stakeholders should submit written comments by February 18, 2014 to RSA@caiso.com.