

December 12, 2022

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Re: California Independent System Operator Corporation  
Tariff Clarifications Amendment**

**Docket No. ER23-\_\_\_\_\_ -000**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO)<sup>1</sup> hereby submits a set of tariff amendments to clarify several areas of the CAISO tariff, including ancillary service procurement, validation of bids, and proxy transition costs.<sup>2</sup> As part of its regular business practice to improve its tariff, the CAISO has identified the need to clarify certain provisions and correct inadvertent errors that have accrued over time. The tariff revisions proposed in this filing are not intended to change established policies, nor materially affect the rights and obligations of the CAISO or its market participants. These revisions are intended solely to correct typographical errors, realign or remove erroneous cross-references, clarify the meaning of ambiguous tariff provisions, and ensure consistency throughout the tariff. The Commission accepted similar filings regarding different tariff clarifications in 2019<sup>3</sup> and 2020.<sup>4</sup>

The CAISO has discussed these proposed tariff changes with stakeholders.<sup>5</sup> Although the CAISO submits these clarifications in the same filing, each change is just and reasonable on its own, is not dependent on any other change, and is completely severable. The CAISO respectfully requests that the Commission accept all of these

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<sup>1</sup> Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the currently effective CAISO tariff.

<sup>2</sup> The CAISO submits this filing under Section 205 of the Federal Power Act, 16 U.S.C. § 824d, Part 35 of the Commission's Regulations, 18 C.F.R. § 35, et seq., and rules 207 and 602 of the Commission's Rules of Practice and Procedure, 18 C.F.R. §§ 385.207 and 385.602.

<sup>3</sup> *California Independent System Operator Corp.*, 168 FERC ¶ 61,084 (2019)

<sup>4</sup> *California Independent System Operator Corp.*, Letter Order, Docket No. ER20-2374-000 (Sept. 4, 2020).

<sup>5</sup> The CAISO's stakeholder process is discussed further in Section III of this transmittal letter.

revisions except Section 30.11.5 effective February 5, 2023, 61 days from this filing.<sup>6</sup>

## I. Proposed Tariff Modifications

Attachment A to this filing contains a matrix identifying each of the proposed tariff amendments. This attachment identifies each tariff section the CAISO proposes to change and a reason for the proposed change, many of which are self-explanatory. For example:

- In Section 4.5.1.3, the CAISO proposes to remove the reference to a dollar amount, which was inadvertently missed during an earlier filing.<sup>7</sup>
- In Section 4.8 and 4.8.1, the CAISO proposes to remove duplicative tariff language under nested tariff sections.
- In Section 9.3.3(6), the CAISO proposes to insert clarifying language. This section was added as part of Resource Adequacy Enhancements Phase 1, and although the CAISO Board-approved policy and transmittal letter made it clear it was meant to apply only to maintenance outages and not to forced outages, the current tariff language inadvertently covers all outages.<sup>8</sup>
- In Sections 11.5.2.4, the CAISO proposes to correct a typographical error by capitalizing a section header for consistency.
- In Section 40.2.2.1 the CAISO proposes to correct a tariff cross-reference that is incorrect due to a typographical error.

Some tariff revisions also clarify existing practice and policy. The CAISO provides further explanation of those revisions below:

### **Sections 8.2.3.1 and 8.3.1**

The CAISO proposes to make clarifications to Section 8.2.3.1 and 8.3.1, regarding the procurement of ancillary services.<sup>9</sup> The CAISO maintains resources that

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<sup>6</sup> As discussed in Section III below, the CAISO requests that the Commission accept Section 30.11.5 to be effective on or before May 1, 2023, subject to the CAISO filing a notice with the Commission within 5 days of the actual effective date.

<sup>7</sup> *California Independent System Operator Corp.*, 2020 Grid Management Charge – Cost of Service Study Update, ER21-112 (Oct. 15, 2020).

<sup>8</sup> *California Independent System Operator Corp.*, Tariff Amendment, Resource Adequacy (RA) Enhancements, ER21-1551 (Mar. 29, 2021)

<sup>9</sup> Ancillary Services requirements are further described in Section 4.2 of the CAISO's Business Practice Manual for Market Operations.

can respond immediately to the CAISO's energy management system control in order to allow the CAISO balancing authority area to meet North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) reliability standards. These standards require the CAISO to balance resources continuously to meet deviations between actual and scheduled demand. The CAISO procures regulation up and regulation down in both the Integrated Forward Market and the Real-Time Market for these purposes. The CAISO's tariff currently states that the amount of ancillary services procured is based on the CAISO forecast of CAISO demand.<sup>10</sup> However, the CAISO procures regulation up and regulation down in accordance with NERC and WECC reliability standards and based on several other factors, not exclusively the CAISO forecast of CAISO demand. The CAISO sets its regulation up and regulation down procurement targets based on historical procurement of these services as well as information related to Area Control Error and regulation used on the system. The CAISO updates its historic regulation dataset on a monthly basis. This dataset seeks to capture recent trends and seasonal patterns. If the historic dataset does not reflect upcoming conditions, the CAISO may adjust the dataset. For example, if the CAISO anticipates variable conditions for the next trade date, the CAISO may increase regulation up and regulation down procurement requirements. The CAISO's proposed tariff amendments clarify the basis of its procurement of regulation by removing several references that imply procurement is based exclusively on a percentage of the applicable CAISO forecast of CAISO demand. Additionally, because the basis for the CAISO's procurement is the same between the Day Ahead and Real-Time Market, the CAISO proposes to delete tariff language that unnecessarily repeats ancillary services procurement requirements in the Real-Time Market.

#### **Sections 11.2.2.2.2 and 11.10.9.3**

The CAISO proposes amendments to Sections 11.2.2.2.2 and 11.10.9.3, regarding the rescission of residual unit commitment availability payments and ancillary services capacity payments. The changes to these sections address how the CAISO accounts for total expected energy in determining whether capacity is undeliverable. The CAISO rescinds payments under the residual unit commitment process in circumstances where the total metered output of a resource is less than the real-time expected energy, subject to a tolerance band.<sup>11</sup> Similarly, the CAISO rescinds payments for ancillary services capacity when total metered output is insufficient to supply the amount of instructed imbalance energy awarded.<sup>12</sup> Real-time expected energy reflects energy the market can dispatch.<sup>13</sup> The CAISO proposes to clarify that it will not include a resource's response to automatic generation control (AGC) signals as

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<sup>10</sup> Section 8.2.3.1 of the CAISO tariff.

<sup>11</sup> Section 11.2.2.2.2 of the CAISO tariff.

<sup>12</sup> Section 11.10.9.3 of the CAISO tariff.

<sup>13</sup> Definition of Expected Energy, Appendix A to the CAISO tariff, Master Definitions Supplement.

part of expected energy calculation to assess whether residual unit commitment capacity or ancillary services capacity is undeliverable. Specifically, the CAISO proposes to clarify that total metered output in these calculations will not include energy provided or reduced in response AGC signals. This clarification reflects that expected energy should align with energy values the market can dispatch. AGC dispatches resources with regulation awards between five-minute dispatch market intervals. Absent excluding energy provided or reduced in response AGC signals there may be an imbalance in the CAISO's calculation of expected energy, which could cause an incorrect rescission of payments for residual unit commitment or ancillary services capacity.

### **Section 30.7.3.1**

The CAISO proposes revisions to Section 30.7.3.1 regarding the bid validation rules applicability to Use Limited Resources. Section 30 of the CAISO tariff sets generally applicable bidding rules. These rules apply to all bids and also provide information concerning how the CAISO's scheduling and infrastructure and bidding rules (SIBR) rules apply to fill in missing information. For example, SIBR will generate an energy bid if a spinning award is missing an energy bid.<sup>14</sup> In contrast, Section 40 applies to Resource Adequacy (RA) resources and specifies circumstances where the CAISO will generate RA must-offer bids. The must-offer rules may differ depending on the type of resources. One case in point is that the CAISO will not generate RA bids on behalf of Use Limited Resources. However, the generally applicable SIBR rules still apply to RA resources, including Use Limited Resources. For example, although the CAISO will not generate bids for a Use Limited Resource, if a Use Limited Resource submits a bid to supply spinning reserve and receives a spinning award but fails to submit an energy bid, the CAISO will submit an energy bid. The CAISO is revising Section 30.7.3.1 to clarifying that the SIBR rules apply to all submitted bids, but that the SIBR rules will not generate RA must-offer bids on behalf of RA use-limited capacity that was not bid into the market.

### **Section 30.11.5**

The CAISO proposes to add additional clarifying tariff language to Section 30.11.5 regarding proxy transition costs for multi-stage generating (MSG) resources. This clarification spells out an existing implicit assumption in the tariff. Transition Costs represent the costs a MSG resource incurs to move from one distinct operating range (*i.e.*, configuration) to another and are a form of commitment costs the market optimization considers in moving a MSG resource between configurations. The CAISO places limits on resource commitment costs as a general part of its market power mitigation procedures. The limits are referred to as proxy costs. The limits on a resource's ability to bid its transition costs (*i.e.*, its proxy transition costs) are set based

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<sup>14</sup> Section 30 of the CAISO tariff.

on the resource's plant-level start-up costs. The CAISO rules permit a Scheduling Coordinator to request an increase in its start-up and minimum load costs based on fuel costs. The CAISO tariff, however, does not specifically state that approved increases in the start-up costs would also apply to MSG proxy Transition Costs even though they were calculated based on their now-superseded start-up costs. This tariff amendment clarifies that the CAISO will recalculate the proxy transition costs when a Scheduling Coordinator submits, and the CAISO accepts, a reference level change for the start-up bids.

Unlike the other items covered in this filing, the CAISO must make limited system upgrades to facilitate automated updates of proxy transition costs in cases where a MSG resource updates its proxy start-up costs. The CAISO anticipates these system enhancements will be complete in the first half of 2023 but may not be complete by the sixty-first day after this filing. The CAISO accordingly requests the Commission authorize an effective date for the revisions to Section 30.11.5 on or before May 1, 2023, subject to the CAISO filing a notice with the Commission within five days of the actual effective date.<sup>15</sup>

## **II. Stakeholder Process**

The CAISO initiated a process to obtain stakeholder input concerning the proposed tariff changes in this filing on August 8, 2022. The CAISO received written comments on the proposed changes and held one conference call with stakeholders to discuss stakeholder concerns.<sup>16</sup> The CAISO reposted the proposed tariff changes for final stakeholder review and final comments. The CAISO appreciates stakeholders' ongoing efforts to help clarify the CAISO's tariff.

## **III. Effective Date**

The CAISO respectfully requests an effective date of February 11, 2023, 61 days from this filing, for all tariff sections except Section 30.11.5. The CAISO requests the Commission authorize the revisions to Section 30.11.5 to be effective on or before May 1, 2023, subject to the CAISO filing a notice with the Commission within 5 days of the actual effective date, for the reasons stated above.

## **IV. Communications**

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<sup>15</sup> The CAISO has included an effective date of 12/31/9998 for the tariff record for Section 30.11.5 in this filing. The CAISO will notify the Commission of the actual effective date of this tariff record within five business days after implementation in an eTariff submittal using Type of Filing code 150 – Report. To the extent necessary, the CAISO also respectfully requests a waiver of the 120-day notice period in 18 C.F.R. 35.3(a)(1) to permit the CAISO, if necessary, to enact this amendment more than 120 days after filing.

<sup>16</sup> A record of the CAISO's stakeholder process and comments received is available at <http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx>

In accordance with Rule 203(b)(3) of the Commission's Rules of Practice and Procedures,<sup>17</sup> the CAISO requests that all communications regarding this filing should be addressed to the following individual, whose name should be put on the official service list established by the Commission with respect to this submittal:

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## **V. Service**

The CAISO has served copies of this transmittal letter, and all attachments, on the California Public Utilities Commission, the California Energy Commission, and parties with effective scheduling coordinator service agreements under the CAISO tariff. In addition, the CAISO is posting this transmittal letter and all attachments on the CAISO Website.

## **VI. Materials Provided In This Filing**

The following documents, in addition to this transmittal letter, support this filing:

Attachment A	Matrix describing proposed tariff changes;
Attachment B	Clean CAISO tariff sheets incorporating these requested tariff changes; and
Attachment C	Red-lined document showing the revisions proposed in this tariff amendment.

## **VII. Conclusion**

In this filing, the CAISO is proposing amendments to its tariff to clarify the meaning of existing tariff provisions, ensure consistency throughout the tariff, as well as consistency between the tariff and business practices, and to correct typographical and other inadvertent errors. The CAISO respectfully requests that the Commission accept

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<sup>17</sup> 18 C.F.R. § 385.203(b)(3).

The Honorable Kimberly D. Bose

December 12, 2022

Page 7

these tariff amendments with an effective date of February 11, 2023, with the exception of Section 30.11.5, which the CAISO requests to be effective on or before May 1, 2023, subject to the CAISO filing a notice with the Commission within 5 days of the actual effective date.

Please do not hesitate to contact the undersigned if you have any questions.

Respectfully submitted,

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**Attachment A – Matrix of Tariff Changes**  
**Tariff Clarifications Amendment Filing**  
**California Independent System Operator Corporation**  
**December 12, 2022**





Section	Proposed Changes	Reason for Change
<b>Section 4.5.1.1.6, Header</b>	<del>[Not Used]</del> <b><u>Other Scheduling Coordinator Application Requirements</u></b>	This sub-section does not contain a header, but there is tariff language in the subsequent tariff sections. The CAISO is proposing to add a header.
<b>Section 4.5.1.3, Last Sentence</b>	The fee for each additional Scheduling Coordinator Identification Code is <del>\$500 per month, or as otherwise</del> specified in Schedule 1 of Appendix F.	The CAISO is proposing to remove the reference to the dollar amount, which was inadvertently missed during an earlier filing (docket number ER21-112).
<b>Section 4.8</b>	<b>4.8 Relationships Between CAISO and Intermittent Resources</b> <del>The CAISO shall not accept Bids for an Eligible Intermittent Resource other than through a Scheduling Coordinator. Any Eligible Intermittent Resource that is not a Participating Intermittent Resource, or any Participating Intermittent Resource for which Bids are submitted shall be bid and settled as a Generating Unit for the associated Settlement Periods (except that the Forecast Fee shall apply in such Settlement Periods).</del> <b>4.8.1 Bidding and Settlement</b> The CAISO shall not accept Bids for an Eligible Intermittent Resource other than through a Scheduling Coordinator. Any Eligible Intermittent Resource that is not a Participating Intermittent Resource, or any Participating Intermittent Resource for which Bids are submitted shall be bid and settled as a Generating Unit for the associated Settlement Periods (except that the Forecast Fee shall apply in such Settlement Periods).	The CAISO is proposing to remove the duplicated tariff language under 4.8 because it is an exact duplicate of Section 4.8.1.
<b>Section 4.11.5.1, First Sentence and Second Sentence</b>	If the CAISO declares an <u>emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment, Stage 1 System Emergency</u> , the SUDC shall use any reasonably available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC shall not be	In its January 30, 2017 “Order Accepting Tariff Revisions” 158 FERC ¶ 61,085 in docket no. ER17-415, FERC accepted the CAISO’s proposal to remove the “System Alert” “System Warning” and the “AWE” notice scheme from the tariff as part of its

	<p>called separately <del>in Stage 3 System Emergencies</del> to manually shed Load.</p>	<p>tariff amendment to revised and update emergency tariff provisions and to maintain the emergency notice in operating procedures with the goal to adopt the NERC/WECC terminology in the future. In this tariff clarifications filing, the CAISO is removing a few remaining references that were not addressed in the 2016 amendment filing.</p>
<p><b>Section 8.2.3.1, First Paragraph</b></p>	<p>The CAISO shall maintain sufficient resources immediately responsive to the CAISO’s EMS control in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet NERC and WECC reliability standards and any requirements of the NRC by continuously balancing resources to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time shall be determined <u>based on several factors as further described in the applicable Business Practice Manual, including but not limited to historic needs for Regulation Down and Regulation Up capacity as well as forecast operating conditions.</u> <del>by the CAISO as a percentage of the applicable CAISO Forecast of CAISO Demand for the Day Ahead and Real-Time Markets.</del> In HASP, the <u>CAISO will determine the</u> amount of advisory Regulation from Dynamic System Resources required for each Settlement Period in the next Trading Hour <del>is also determined based on the CAISO Forecast of CAISO Demand.</del> The advisory awards of Regulation from Dynamic System Resources in HASP are not binding and are re-optimized through the FMM and RTD processes in the Real-Time Market. <del>The CAISO’s determination is based upon its</del></p>	<p>The CAISO is proposing to clarify criteria that the CAISO uses to establish regulation up and regulation down procurement requirements and eliminate extraneous tariff language. The CAISO sets regulation down and regulation up procurement requirements not solely as a percentage of the CAISO’s Forecast of CAISO Demand but based on system needs to meet NERC Reliability Standards.</p>



	<p><del>need to meet the NERC and WECC reliability standards and any requirements of the NRC.</del> The CAISO will take into account the speed and accuracy of regulation resources in its determination of Regulation requirements, including as it qualifies self-provided Regulation. Upon request of a Scheduling Coordinator, the CAISO will share with the Scheduling Coordinator its reasoning and any related data used to make the determination of whether the Scheduling Coordinator’s self-provided Regulation capacity meets its regulation obligation.</p>	
<p><b>Section 8.3.1, First and Second Paragraphs</b></p>	<p>The CAISO shall operate competitive Day-Ahead and Real-Time Markets to procure Ancillary Services. The Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) applications used in the Integrated Forward Market (IFM) and the Real-Time Market (RTM) shall calculate optimal resource commitment, Energy, and Ancillary Services Awards and Schedules at least cost to End-Use Customers consistent with maintaining System Reliability. Any Scheduling Coordinator representing resources, System Units, Participating Loads, Proxy Demand Resources or imports of System Resources may submit Bids into the CAISO’s Ancillary Services markets provided that it is in possession of a current certificate for the resources concerned. Regulation Up, Regulation Down, and Operating Reserves necessary to meet CAISO requirements not met by self-provision will be procured by the CAISO as described in this CAISO Tariff. The amount of Ancillary Services procured in the IFM is <del>based on the CAISO Forecast of CAISO Demand and the forecasted inertia schedules in the RTM for the Operating Hour</del> net of (i) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary</p>	<p>The CAISO proposes to clarify criteria the CAISO uses to establish ancillary services procurement requirements and eliminate extraneous tariff language. The CAISO also proposes to delete tariff language that unnecessarily repeats ancillary services procurement requirements in the real-time market.</p> <p>The CAISO proposes changes to Section 8.3.1 in concert with Section 8.2.3.1 above, as well as existing language in other subsections of Section 8, which guide Ancillary Service procurement requirements. These requirements are made in accordance with NERC and WECC reliability standards and are based on several factors, not exclusively the CAISO Forecast of CAISO Demand. Ancillary Services requirements are further described in Section 4.2 of the CAISO’s Business Practice Manual for Market Operations.</p>



	<p>Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. <del>The amount of additional Ancillary Services procured in the RTM is based on the CAISO Forecast of CAISO Demand, the Day-Ahead Schedules established net interchange, and the forecast of the Intertie Schedules for the Operating Hour in the RTM net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, and (iii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right.</del> The amount of Ancillary Services procured in the Real-Time Market is <del>based upon the CAISO Forecast of CAISO Demand and the net interchange for the Operating Hour from FMM Schedules</del> net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, (iii) additional Operating Reserves procured in the FMM, and (iv) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO may procure incremental Ancillary Services in the Real-Time Market based in part on a determination during the FMM that any Ancillary Services capacity awarded or self-provided in the Day-Ahead Market is not available as a result of a resource constraint or Transmission Constraints. Resource constraints may include but are not limited to an Outage of a resource or Ramp Rate constraints. Incremental procurement in the Real-Time Market will exclude Ancillary Services Capacity the CAISO has determined is not available.</p>	
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	The CAISO will manage the Energy from both CAISO-procured and Self-Provided Ancillary Services as part of the FMM and Real-Time Dispatch. In the Day-Ahead Market, the CAISO procures one-hundred (100) percent of its Ancillary Service requirements based on the Day-Ahead Demand Forecast net of Self-Provided Ancillary Services. After the Day-Ahead Market, the CAISO procures additional Ancillary Services needed to meet system requirements from all resources in the Real-Time Market. The amount of Ancillary Services procured in the Real-Time Market is based on the CAISO's <a href="#">requirements for Ancillary Services Forecast of CAISO Demand</a> for the Operating Hour net of Self-Provided Ancillary Services.	
<b>Section 8.6.4.2.3, Numerical Header</b>	<b>8.6.4.2.3 Information to be Submitted by Scheduling Coordinators for Each Service</b>	The CAISO is proposing to correct a typographical error of the section number in the header for 8.6.4.2.3 to become 8.6.4.3.
<b>Section 8.10.3, First Paragraph</b>	The CAISO <del>will</del> <del>may</del> test the Non-Spinning Reserve capability of a resource by issuing unannounced Dispatch Instructions requiring the resource to ramp to its certified capacity within ten (10) minutes.	The CAISO is proposing to modify this text to reflect actual practice.
<b>Section 9.3.3</b>	(6) For Outages that involve extending or increasing the scheduled duration of an <a href="#">Maintenance</a> Outage or MW amount of capacity on <a href="#">Maintenance</a> Outage, respectively, submit a new Outage request to cover the extension or increase in the extent of the Outage.	The CAISO is proposing to clarify this language. This section 9.3.3(6) was added as part of Resource Adequacy Enhancements Phase 1 (docket number ER21-1551). This text inadvertently covers all outages when the Board-approved policy and transmittal letter made it clear it was meant to apply only to maintenance outages and not to forced outages.
<b>Section 10.2.5.1</b>	The CAISO will publish on the CAISO Website, for informational purposes only, a list of the CAISO Authorized Inspectors and	The CAISO is proposing to remove this tariff language. All market participants have



	<p>details of the procedure for applying to become a CAISO Authorized Inspector. <del>The CAISO will, on request, provide a copy of that list to entities that do not have access to the CAISO Website.</del></p>	<p>access to the CAISO website. There is no need to send this information any other way and CAISO staff is unaware of any prior requests for copies.</p>
<p><b>Section 11.2.2.2.2</b></p>	<p><b>Undelivered RUC Capacity</b>  <del>For each Settlement Interval in which the total metered output for a Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource is less than Real-Time Expected Energy by more than the Tolerance Band and less than the RUC Schedule, the RUC Award for that Settlement Interval will be rescinded.</del>  <u>The CAISO will rescind a resource's RUC Availability Payment, or portion thereof, when the resource's total metered output is less than Expected Energy by more than the Tolerance Band and less than the RUC Schedule. For purposes of this calculation, total metered output will not include Energy provided or reduced as a result of AGC signals.</u></p>	<p>The CAISO is proposing to clarify its calculation of expected energy under this section for purposes of assessing whether residual unit commitment capacity is undeliverable. The tariff change clarifies the CAISO will exclude a resource's response to AGC signals from total metered output for purposes of calculating expected energy. Absent excluding energy provided or reduced in response AGC signals there may be an imbalance in the CAISO's calculation of expected energy, which could result in an incorrect rescission of payments for residual unit commitment capacity.</p>
<p><b>Section 11.2.4.7, Second to last Sentence</b></p>	<p>If such circumstances occur, the CAISO adjusts the CRR revenue in that Settlement Period so that the additional net CRR revenue that otherwise would be earned from the congestion created by the Schedule that results from the Bids submitted in violation of Section 30.5.5 is not paid to the CRR Holder.</p>	<p>The CAISO is proposing to correct a typographical error, updating "so" to "so."</p>
<p><b>Section 11.5.2.4, Header</b></p>	<p><b>[Not Used]</b></p>	<p>The CAISO is proposing to correct a typographical error regarding capitalizing for consistency.</p>
<p><b>Section 11.8.2.4, Fourth Sentence</b></p>	<p>For full other ramp periods not associated with an initial condition or Self-Schedule with IFM Energy Bid Cost shortfall, the shortfall <del>with</del><u>will</u> be included in IFM Bid Cost calculations</p>	<p>The CAISO is proposing to correct this typographical error and update the grammar of this sentence.</p>
<p><b>Section 11.8.4.1.1</b></p>	<p>(g) The RTM Start-Up Cost for an RTM Commitment Period shall be qualified if an actual Start-Up occurs earlier than the start of</p>	<p>The CAISO is proposing to correct a typographical error. The "M" in RTM stands</p>

	<p>the RTM <del>Market</del> Start-Up, if the relevant Start-Up is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the RTM Start-Up, otherwise the Start-Up Bid Cost is zero for the RTM Commitment Period.</p>	<p>for market. Therefore “market” isn’t necessary.</p>
<p><b>Section 11.8.4.1.2, Last Sentence</b></p>	<p>For all Bid Cost Recovery Eligible Resources that the CAISO Shuts Down, either through an Exceptional Dispatch or an Economic Dispatch through the Real-Time Market, from its Day-Ahead Schedule that was also from a CAISO commitment, the RTM Minimum Load Costs will include negative Minimum Load <del>Bid Costs</del> <del>Bids</del> for Energy between the Minimum Load as registered in the Master File, or if applicable, as modified pursuant to Section 9.3.3, and zero (0) MWhs.</p>	<p>The CAISO is proposing to correct a grammatical error to the correct term - “Cost Bids” to “Bid Costs.”</p>
<p><b>Section 11.8.6</b></p>	<p><b><u>11.8.6.1 Determination of IFM, RUC and RTM Bid Cost Uplift</u></b>  <u>For each Settlement Interval, the CAISO shall determine the IFM, RUC and RTM Bid Cost Uplift for purposes of allocating the IFM, RUC and RTM Bid Cost Uplift as described below. In determining the IFM, RUC and RTM Bid Cost Uplifts below, the Unrecovered Bid Cost Uplift Payments for MSS BCR Eligible Resources in Metered Subsystems where the MSS Operator has elected net Settlement will be included on an MSS basis and not on an individual resource basis.</u></p> <ul style="list-style-type: none"> <li>(i) <u>The IFM Bid Cost Uplift shall be the net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.</u></li> <li>(ii) <u>The RUC Bid Cost Uplift shall be the net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources in the CAISO Balancing Authority Area with Unrecovered Bid Cost Uplift Payments.</u></li> <li>(iii) <u>The RTM Bid Cost Uplift shall be the net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible</u></li> </ul>	<p>In 2021, the CAISO noticed missing eTariff records in the process of submitting a tariff amendment to augment section 11.8.6. Specifically, the CAISO noticed that 11.8.6.1 and 11.8.6.2 were missing from eTariff. Upon further research, the CAISO determined that as a result of an unintended and yet unknown error, in the process of a tariff amendment submitted in 2014 (docket no. ER14-1386), sections 11.8.6.1 and 11.8.6.2 were inadvertently removed from FERC’s eTariff record from Section 11.8.6, even though the CAISO was not requesting that language to be removed.</p> <p>For historical purposes, Sections 11.8.6.1 and 11.8.6.2 were proposed and accepted by the Commission in the CAISO tariff as part of the MRTU tariff filing (docket number ER06-615). Section 11.8.6.2 was further revised to appear as it does in 2013 (docket number ER13-2452).</p>

	<p><u>Resources with Unrecovered Bid Cost Uplift Payments.</u></p> <p><b><u>11.8.6.2 Sequential Netting of RUC and RTM Bid Cost Uplift</u></b>  <u>For each Settlement Interval, the Net RUC or Real-Time Market Bid Cost Uplift is determined for the purposes of allocating Net RUC or Real-Time Market Bid Cost Uplift by the following netting rules applied:</u></p> <p>(i) <u>The Net RUC Bid Cost Uplift is equal to the greater of zero or any positive RUC Bid Cost Uplift offset by negative Real-Time Market Bid Cost Uplift.</u></p> <p>(ii) <u>The Net Real-Time Market Bid Cost Uplift is equal to the greater of zero or any positive Real-Time Market Bid Cost Uplift offset by any negative RUC Bid Cost Uplift.</u></p> <p><b>11.8.6.3 Determination of Total Positive CAISO Markets Uplifts</b></p> <p><b>11.8.6.3.1 Total Positive IFM Uplifts</b>  Any positive Net IFM Bid Cost Uplifts are reduced by scaling them with the uplift ratio in Section 11.8.6.3.1(iii) to determine the Total IFM Uplift (for a Settlement Interval) as follows:</p> <p style="text-align: center;">* * * * *</p>	<p>The CAISO is proposing to restore the eTariff record to reflect the current CAISO accepted language for 11.8.6.1 and 11.8.6.2.</p>
<p><b>Section 11.10.9.3, Last Sentence</b></p>	<p>For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh. <u>For purposes of these calculations, total metered output will not include Energy provided or reduced as a result of AGC signals.</u></p>	<p>The CAISO is proposing to clarify its calculation of expected energy under this section for purposes of assessing whether ancillary service capacity is undeliverable. The tariff change clarifies the CAISO will exclude a resource's response to AGC signals from total metered output for purposes of calculating expected energy.</p>



		Absent excluding energy provided or reduced in response AGC signals there may be an imbalance in the CAISO's calculation of expected energy, which could result in an incorrect rescission of payments for ancillary services capacity.
<b>Section 11.13.5, Second Sentence</b>	The RMR Resource will have its RMR Capacity Payment reduced by the IFM excess payment, <del>if</del> the net of all IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses calculated pursuant to Section 11.8.2 over a Trading Day is negative	The CAISO is proposing to correct a typographical error, changing "it" to "if."
<b>Section 11.19.1.1, Second Sentence</b>	Any FERC Annual Charges to be assessed by FERC against the CAISO for such use of the CAISO Controlled Grid shall be assessed against Scheduling Coordinators at the FERC Annual Charge Recovery Rate, <del>as determined in accordance with Section 11.19.1.</del>	The CAISO is proposing to remove the cross reference. Section 11.19.1 does not describe how the FERC Annual Recovery Rate is determined. The reference seems invalid, and should be removed.
<b>Section 11.22.2.5, First Sentence</b>	The costs <del>will be allocated to the service charges that comprise recovered through</del> the Grid Management Charge <u>according to the formula in Appendix F, Schedule 1, Part A.</u> <del>shall be allocated to the service charges that comprise the Grid Management Charge.</del>	The CAISO is proposing to clarify this tariff language for increased readability and understanding.
<b>Section 11.29.10.4, Header</b>	<b><del>Emergency Procedures [Not Used]</del></b>	The CAISO is proposing to remove the header since the section is blank.
<b>Section 22.1.3, Second Sentence</b>	Exceptions identified as a result of an audit will be reviewed with the CAISO Audit Committee. The results of the audits and actions to be taken by the CAISO as a result of the audit shall be <del>mailed</del> <u>made available</u> to Market Participants upon request.	The CAISO is proposing to remove "mailed" and insert "made available" to more accurately describe the modern day practice.
<b>Section 24.3.1, Last item in list</b>	<ul style="list-style-type: none"> <li>(m) The most recent Annual Interregional Information provided by other Planning Regions; and</li> <li><del>(n)</del> Import Capability expansion requests submitted in comments on the draft Unified Planning Assumptions and Study.</li> </ul>	The CAISO is proposing to correct a typographical error in this list. Line item "o" should be "n."

<p><b>Section 24.4.7, First Sentence</b></p>	<p>The transmission solutions identified in the <u>revised</u> draft and final comprehensive Transmission Plan, <u>or in a supplemental assessment to the final comprehensive Transmission Plan</u>, that are subject to the competitive solicitation process will provide sufficient engineering detail to permit Project Sponsors to submit complete proposals, under section 24.5.1 to build the identified transmission solution.</p>	<p>The CAISO is proposing to add the word “revised” and clarify language to identify other potential places where the CAISO may identify a transmission solution. The revised plan is the plan sent to the CAISO Board, and changes can occur between the draft transmission plan and the revised transmission plan. Also, there are instances where the final transmission plan recognizes that the CAISO is still studying the need for a particular transmission solution and will issue a supplemental assessment.</p>
<p><b>Section 24.5.1, First Paragraph, First Sentence and Fifth Sentence</b></p>	<p>According to the schedule set forth in the Business Practice Manual, in the month following the CAISO Governing Board’s approval of the comprehensive Transmission Plan, <u>or a supplemental assessment to the final comprehensive Transmission Plan, whichever is applicable</u>, the CAISO will initiate a period of at least ten (10) weeks that will provide an opportunity for Project Sponsors to submit specific proposals to finance, own, and construct the Regional Transmission Facilities subject to competitive solicitation identified in the comprehensive Transmission Plan <u>or supplemental assessment</u>. If the transmission solution adopted in Phase 2 involves an upgrade or improvement to, addition on, or a replacement of a part of an existing Participating TO facility, the Participating TO will construct and own such upgrade, improvement, addition or replacement facilities unless a Project Sponsor and the Participating TO agree to a different arrangement. For Regional Transmission Facilities with capital costs of \$50 million or less that were approved by CAISO management before Governing Board approval of the comprehensive Transmission Plan, the ten week period will be initiated following management approval</p>	<p>The CAISO is proposing to add text to describe what is meant by “transmission plan” to more accurately reflect the process. There are instances where the final transmission plan recognizes that the CAISO is still studying the need for a particular transmission solution and will issue a supplemental assessment.</p>



	<p>of the facility, and the Project Sponsor selection process may follow an accelerated schedule described in the Business Practice Manual. Such proposals must include plan of service details and supporting information as set forth in the Business Practice Manual sufficient to: (1) enable the CAISO to determine whether the Project Sponsor meets the qualification criteria specified in section 24.5.3.1; (2) enable the CAISO to determine whether a Project Sponsor’s proposal meets the proposal qualification criteria in section 24.5.3.2; and (3) enable the CAISO, if there are multiple qualified Project Sponsors bidding on the same Regional Transmission Facility, to conduct a comparative analysis of the proposals and Project Sponsors and select an Approved Project Sponsor as described in section 24.5.3.5. The project proposal will identify the authorized governmental body from which the Project Sponsor will seek siting approval for the project. Within 30 days after the CAISO posts the <u>revised</u> draft comprehensive Transmission Plan, <u>or a supplemental assessment to the final comprehensive Transmission Plan</u>, to its website, <u>whichever is applicable</u>, for each Regional Transmission Facility identified in the <u>revised draft</u> comprehensive Transmission Plan <u>or supplemental assessment</u> that is subject to competitive solicitation, the CAISO will post, for informational purposes only, those existing qualification criteria and selection factors, in addition to any binding cost containment commitments, which the CAISO believes are key for purposes of selecting an Approved Project Sponsor for the particular transmission solution, consistent with the comparative analysis described in section 24.5.4 and the project sponsor qualification and selection criteria specified in sections 24.5.3.1 and 24.5.4, respectively.</p>	
<p><b>Section 25.3, Second Sentence</b></p>	<p>The applicable Participating TO, in consultation with the CAISO, shall identify any such adverse effect on its Encumbrances <del>in the Interconnection System Impact Study performed under Section 7 of Appendix U (the LGIP), the Phase I Interconnection Study</del></p>	<p>The CAISO is proposing to simplify this requirement by removing the specific list of interconnection studies and instead utilizing the “applicable” interconnection study.</p>



	<del>performed under Section 6 of Appendix Y (the GIP), the system impact study performed under Section 3.4 of the SGIP, or the System Impact Study performed under Section 5.1 of Appendix W, as applicable in the applicable Interconnection Study.</del>	
<b>Section 27.6, Fourth Sentence and Fifth Sentence</b>	<del>In lieu of the State Estimator, if the State Estimator is not capable of providing CAISO with a solution to clear the CAISO Markets,</del> the CAISO <del>may shall</del> use the last best State Estimator solution or <del>use telemetry</del> for determining Dispatch Instructions <del>provided the State Estimator is not unavailable for an extended period. If the State Estimator is not available for an extended period of time,</del> In all cases, the CAISO shall use the Load Distribution Factors from the Load Distribution Factors library as applicable to the prevailing system and time of use conditions to determine Dispatch Instructions.	The CAISO is proposing to modify this tariff language. There is language that discusses the options when the State Estimator is unavailable or incapable of providing a solution. One statement stipulates the last best State Estimator solution will be used. It should state that Telemetry or last best State Estimator solution is used (and almost always the Telemetry is used). Another Statement suggests the use of LDFs from the LDF library if the State Estimator is not available. The LDFs are used whether the State Estimator is working or not.
<b>Section 29.2 (b) (6)</b>	(A) <b>Certification.</b> The CAISO and the prospective EIM Entity shall each file a market readiness certificate with <del>the</del> FERC at least 30 days prior to the EIM Entity Implementation Date in which a senior office of each entity attests –	The CAISO is proposing to correct the typographical error by removing “the” before FERC.
<b>Section 29.2 (b) (6)</b>	(B) <b>Delay or Re-Certification.</b> If, subsequent to readiness certification pursuant to Section 29.2(b)(6)(A), the CAISO or the prospective EIM Entity determines that it cannot proceed with implementation on the EIM Entity Implementation Date, the CAISO or the prospective EIM Entity will notify <del>the</del> FERC of the delay, the reason for the delay, the new EIM Entity Implementation Date if it can be determined, and whether it will need to re-issue a portion or all of the readiness certification.	The CAISO is proposing to correct the typographical error by removing “the” before FERC.
<b>Section 29.9 (d) (3)</b>	(B) <b>CAISO Facilitation.</b> Upon request of an EIM Entity or EIM Sub-Entity, and without assuming any liability, the CAISO <del>may will</del> provide a <del>third party the</del> Reliability Coordinator with Outage	The CAISO is proposing this minor tariff clarification. This does not appear to have been changed when the RC services amendment was filed, and it was originally

	information submitted to the CAISO by the EIM Entity or EIM Sub-Entity on behalf of the EIM Entity or EIM Sub-Entity.	intended to facilitate coordination with Peak RC. Based on actual practice, changing language from mandatory to permissive.
<b>Section 29.11 (i)</b>	<b>(1) In General.</b> The CAISO will charge EIM Market Participants an EIM Administrative Charge consisting of the real-time portions of the Market Services Charge and the System Operations Charge.	The CAISO is proposing to correct this typographical error to the appropriate term.
<b>Section 29.34 (e)</b>	<b>(4) Contents of EIM Base Schedules.</b> EIM Base Schedules and EIM Sub-Entities of EIM Entities must include hourly-level Demand Forecasts for EIM Demand, hourly-level schedules for resources, including any hourly-level schedules below PMin that the EIM Entity seeks an accounting for, <u>and</u> , for EIM Entities <u>only, and</u> hourly-level scheduled Interchanges.	The CAISO is proposing to correct this typographical error improving the grammar of the sentence.
<b>Section 30.5.2.5, Eighth Sentence</b>	All Bids for MSSs must <del>be</del> identify each Generating Unit on an individual unit basis or a System Unit.	The CAISO is proposing to correct this typographical error by removing the extra word from the sentence.

<p><b>Section 30.6.3, First Sentence</b></p>	<p>In accordance with Section 11.<del>65.2.4</del>, the CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Proxy Demand Resources and Reliability Demand Response Resources.</p>	<p>The CAISO proposes to correct a CAISO tariff cross-reference.</p>
<p><b>Section 30.7.3.1, Step 3, Last Sentence</b></p>	<p><del>The CAISO will not insert or extend any Bid for a Resource Adequacy Resource that is a Use Limited Resource. These validation rules apply to Bids submitted on behalf of Use Limited Resources. The purpose of the validation rules is not to increase the amount of capacity that a Use Limited Resource has offered into the CAISO Markets.</del></p>	<p>The CAISO is proposing to replace this tariff language. The tariff clarification makes it clear that applicable SIBR rules apply to all submitted bids, but that the SIBR rules will not generate resource adequacy must offer bids on behalf of RA use-limited capacity that was not bid in.</p>
<p><b>Section 30.7.3.3, Last Sentence</b></p>	<p>Modified Bids for Resource Adequacy Resources will reflect the <del>full capability of the resource as defined in the Master File full</del> <u>amount of the resource's Resource Adequacy Capacity.</u></p>	<p>The CAISO is proposing to clarify this tariff language because RA capacity can be less than the full capacity of a resource.</p>



<p><b>Section 30.7.12.1, Fourth Sentence</b></p>	<p>The CAISO will allow Bids for Non-Resource Specific System Resources that are Resource Adequacy Resources and that exceed the Soft Energy Bid Cap subject to the Bid price screens described in Section 30.7.12.5.1. The CAISO will allow Virtual Bids, Export Bids, Demand Bids, and Bids for Non-Resource-<u>Adequacy Specific</u> System Resources that are not Resource Adequacy Resources and that exceed the Soft Energy Bid Cap subject to the rules specified in Section 30.7.12.5.2.</p>	<p>The CAISO is proposing to delete the word “Adequacy” from the sentence because it is the wrong term in this context. The CAISO updates it to match the tariff defined term.</p>
<p><b>Sections 30.11.5, Last Sentence</b></p>	<p>The Scheduling Coordinator may submit an application for after-CAISO Market Process adjustments pursuant to Section 30.12 for any costs not verified through the automated Reference Level Change Request process or that were rejected through the manual Reference Level Change Request process. <u>A Multi-Stage Generating Resource cannot submit a Reference Level Change Request for its Proxy Transition Costs but the CAISO will recalculate the Proxy Transition Costs if a Scheduling Coordinator revises the Start-Up Bids that initially were the basis of calculating the Proxy Transition Cost.</u></p>	<p>The CAISO is proposing to add this tariff language. This clarification spells out an existing implicit assumption in the tariff. The transition costs are based off of the start-up bids, so it would not make sense to update the start-up bids but not recalculate the transition costs that are based off of those start-up bids.</p>
<p><b>Section 31.2, Seventh Sentence</b></p>	<p><del>Bids from resources comprised of multiple technologies that include Non-Generator Resources will remain to be subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation.</del></p>	<p>The CAISO is proposing to remove this tariff language. This deletion avoids a potential ambiguity between this language and language that states that hybrid resources are not subject to MPM.</p>

<p><b>Section 31.5.3.2.1, Last Sentence</b></p>	<p>As described in Section 11.6.1, Settlement of RUC Compensation Costs will not be on a RUC Zone basis.</p>	<p>Correcting typographical error by removing extra space in section number.</p>
<p><b>Section 34.1.5.1, Last Sentence</b></p>	<p><del>Bids from resources comprised of multiple technologies that include Non-Generator Resources will remain to be subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation.</del></p>	<p>The CAISO is proposing to remove this tariff language. This deletion avoids a potential ambiguity between this language and language that states that hybrid resources are not subject to MPM.</p>
<p><b>Section 34.1.6.2</b></p>	<p>Eligible Intermittent Resources that have elected to use the CAISO forecast as specified in Section 4.8.2.1.2 are not required to submit a forecast for the binding interval by 37.5 minutes prior to flow. For Participating Intermittent Resources for which Scheduling Coordinators have elected to use the output forecast provided by the CAISO and have selected such a flag in their Master File, the CAISO will use the MWh forecast data the CAISO produces for such a resource at 37.5 minutes prior to the applicable FMM as follows: (a) as the MWh amounts <u>input</u> to be cleared for that resource in the FMM if only a Self-Schedule is submitted, <del>or and</del> (b) as the upper economic limit <u>used</u> for that resource in the FMM if an Economic Bid with or without a Self-Schedule is submitted. <u>Dispatch instructions may also be affected by transmission and resource operational constraints and utilization of updated forecasts.</u> The forecast used by the CAISO will be in fifteen-minute granularity. Scheduling Coordinators representing Participating Intermittent Resources whose output is designated to satisfy a Resource Adequacy requirement must submit Variable Energy Resource Self</p>	<p>The CAISO proposes this tariff clarification to account for the fact that other inputs can influence dispatch instructions.</p>



	<p>Schedules in the RTM in accordance with the output forecast provided by the CAISO, or an Economic Bid.</p>	
<p><b>Section 34.3.2, Third Sentence from the bottom</b></p>	<p><del>Only binding and not advisory Dispatch Instructions will be issued by the CAISO.</del></p>	<p>The CAISO is proposing to remove this tariff language as it does not align with the text in the rest of the section.</p>
<p><b>Section 34.5.1</b></p>	<p>RTED mode of operation for RTD normally runs every five (5) minutes starting at approximately 7.5 minutes prior to the start of the next Dispatch Interval and produces binding Dispatch Instructions for Energy for the next Dispatch Interval and advisory Dispatch Instructions for multiple future Dispatch Intervals through at least the next Trading Hour. After being reviewed by the CAISO Operator, only binding Dispatch Instructions are communicated for the next Dispatch Interval in accordance with Section 6.3. RTED will produce a Dispatch Interval LMP for each PNode for the Dispatch Interval associated with the binding Dispatch Instructions. The RTED Dispatch target is the middle of the interval between five (5) minutes boundary points. For Variable Energy Resources that forecast with 5 minute granularity, the CAISO will use the 5-</p>	<p>The CAISO proposes this tariff clarification to account for the fact that other inputs can influence dispatch instructions.</p>

	<p>minute forecast available prior to the start of the RTD optimization <u>as an input into the optimization</u> to determine the instructed Energy of the resource. RTD will <u>be based on return</u> the 5-minute forecast value, <u>subject to transmission and resource operational constraints</u>, as the instructed Energy for the binding RTD interval provided that the Variable Energy Resource is optimized through the RTED.</p>	
<p><b>Section 34.7(13)</b></p>	<p>The CAISO may make Reliability Demand Response Resources eligible for Dispatch in accordance with applicable Operating Procedures <del>either: (a) after issuance of a warning; (b) during stage 1, stage 2, or stage 3 of a System Emergency; or (c) for a transmission related System Emergency.</del></p>	<p>In its January 30, 2017 “Order Accepting Tariff Revisions” 158 FERC ¶ 61,085 in docket no. ER17-415, the Commission accepted the CAISO’s proposal to remove the “System Alert” “System Warning” and the “AWE” notice scheme from the tariff as part of the CAISO’s tariff amendment to revise and update its emergency tariff provisions and to maintain the emergency notice in operating procedures with the goal to adopt the NERC/WECC terminology in the future. In this tariff clarifications filing, the CAISO is removing a few remaining references that were not addressed in the 2016 amendment filing.</p>
<p><b>Section 36.4.2, Second Paragraph, Third Sentence</b></p>	<p><del>The priority weights for these Point-to-Point CRR nominations will be given a higher value than the proxy bids associated with the nominations submitted by the CRR Allocation participants, if they are included in the same market run.</del></p>	<p>The CAISO is proposing to remove this tariff language. The references in this requirement are out of date. NSR type CRRs no longer exist and no longer do this. This requirement hasn’t been applicable since 2010. There are no proxy bids (NSR mentioned) in CRR process anymore.</p>

<p><b>Section 36.8.2, Third Sentence from the bottom</b></p>	<p>The CAISO will make available, <del>prior to the beginning of the CRR Allocation process but no later than thirty (30) days before the date on which the Candidate CRR Holders or CRR Holders will be required to submit their nominations for the CRR Allocation,</del> a list of allowable CRR <u>Sources and Sinks</u> to be used in the allocation <u>at approximately the same time as the CAISO releases each CRR FNM.</u></p>	<p>The CAISO is proposing to modify this language to better align the release of eligible nodes in CRR process with release schedule of CRR full network model versions. The existing tariff was created based on prior business processes that no longer apply. The revisions better align with current procedures to release a new list of biddable sources/sinks at the same time as new versions of the CRR full network model are released.</p>
<p><b>Section 36.8.3.1.3.1, Last Sentence</b></p>	<p>Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub. <del>Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub.</del></p>	<p>The CAISO is proposing to remove this tariff language as it is duplicative of the sentence before.</p>
<p><b>Section 37.5.2 Header</b></p>	<p>37.5.2 <del>Inaccurate or Late Actual SQMD</del> <u>Accurate and Timely Actual SQMD</u></p>	<p>The CAISO is proposing to change the header of section 37.5.2 to make the section title consistent with the other section titles.</p>
<p><b>Section 37.8.10, Multiple Sentences</b></p>	<p>A Scheduling Coordinator that receives a Sanction, or a Market Participant whose conduct gave rise to the Sanction, may obtain immediate review of the CAISO's determination by directly appealing to FERC, in accordance with FERC's rules and procedures. In such case, the applicable Scheduling Coordinator</p>	<p>The CAISO is proposing to remove the word "Recalculation," which appears multiple times, because it is no longer applicable with MSTT.</p>



	<p>shall also dispute the <del>Recalculation</del> Settlement Statement containing the financial penalty, in accordance with Section 11. The <del>Recalculation</del> Settlement Statement dispute and appeal to FERC must be made in accordance with the timeline for raising disputes specified in Section 11.29.8. The penalty will be tolled until FERC renders its decision on the appeal. The disposition by FERC of such appeal shall be final, and no separate dispute of such Sanction may be initiated under Section 13. For the purpose of applying the time limitations set forth in Section 37.10.1, a Sanction will be considered assessed when it is included on a <del>Recalculation</del> Settlement Statement, whether or not the CAISO accepts a Scheduling Coordinator's dispute of such <del>Recalculation</del> Settlement Statement pending resolution of an appeal to FERC in accordance with this section or Section 37.9.3.3.</p>	
<p><b>Section 37.9.3.1, First Sentence</b></p>	<p><b>37.9.3.1 Settlement Statements</b> The CAISO will administer any penalties issued under this Section 37 through <del>Recalculation</del> Settlement Statements, as relevant, issued to the responsible Scheduling Coordinator by the CAISO.</p>	<p>The CAISO is proposing to remove the word "Recalculation," which appears multiple times, because it is no longer applicable with Market Settlements Timeline Transformation (MSTT).</p>
<p><b>Section 39.7.3.1, last two sentences</b> <i>[redlines are to the formatting]</i></p>	<p>(2) the Transmission Constraint was deemed competitive pursuant to Section 39.7.2 in seventy-five (75) percent or more of the instances in which the Transmission Constraint was binding when tested. ¶ These calculations will be made utilizing data from the Day-Ahead Market for the most recent sixty (60) Trading</p>	<p>The CAISO is proposing to correct this formatting error. The last two sentences are currently grouped under item (2) but it should be a stand-alone item. The CAISO is readjusting the indentation to pull it out.</p>

	<p>Days for which data is available. The CAISO will designate a Transmission Constraint other than the Path 15 Transmission Constraint or the Path 26 Transmission Constraint as non-competitive if the CAISO lacks sufficient data to determine whether the occurrences set forth in Sections 39.7.3.1(1) and 39.7.3.1(2) took place on the Transmission Constraint over the sixty (60) Trading Day period.</p>	
<p><b>Section 40.2.2.1(b)</b></p>	<p><b>(b)</b> For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section <del>40.2.1.1(b)</del> 40.2.1(b) the Reserve Margin for each month shall be no less than fifteen percent (15%) of the LSE’s peak hourly Demand for the applicable month, as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.</p>	<p>The CAISO proposes to correct a CAISO tariff cross-reference.</p>
<p><b>Section 40.4.6.2.2.3, Last Sentence</b></p>	<p>The CAISO will also post to the CAISO Website following submission of the annual Resource Adequacy Plans under Sections 40.2.1-4, 40.2.2.4, 40.2.3.4, and 40.2.4, for each Intertie, by a “yes” or “no” designation, whether each holder of import capability assigned on the particular Intertie has fully included the assigned import capability in the holder’s annual Resource Adequacy Plans.</p>	<p>The CAISO proposes to correct a CAISO tariff cross-reference.</p>
<p><b>Section 40.6.6</b></p>	<p>Only that output of a Resource Adequacy Resource that is designated by a Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Supply Plan shall have an availability obligation to the CAISO. Exports being supported by non-Resource Adequacy Capacity from a Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity <u>as follows</u>:- If a Resource Adequacy Resource goes on a Forced Outage, until the Scheduling Coordinator provides the information requested under section 9.3.10.3.2, the CAISO shall</p>	<p>When the CAISO revised this section in its tariff amendment filing in Docket No. ER21-1790, it eliminated from the highlighted sentence language at the end of the sentence. In doing so, it inadvertently eliminated the words “as follows” from the sentence. These words are a necessary lead-in to the subsequent sentences that FERC approved in its order in Docket No. ER21-1790 and describe how exports of</p>

	determine if the Scheduling Coordinator indicated under section 30.5.1 (aa) that capacity from its Resource Adequacy Resource is backing a Self-Schedule of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity. If the Scheduling Coordinator has indicated capacity from its Resource Adequacy Resource is backing a Self-Schedule of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity, the CAISO will allocate the derate pro rata between the RA Capacity and the remainder of the resource’s capacity up to its PMax.	non-RA Capacity are treated when there is a derate or outage on a Partial RA Resource. California Independent System Operator Corporation, 175 FERC ¶ 61,245 (2022).
<b>Section 40.6.8.1.4 Second Paragraph, Second Sentence</b>	If at any time during this period, <u>the CAISO</u> and the Scheduling Coordinator agree upon the Generated Bid, it will become effective within three (3) Business Days of the date of agreement and remain in effect until: (1) the Generated Bid is modified by FERC; (2) the Generated Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Generated Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.....	The CAISO is correcting a typographical error. During the previous tariff clarification filing, the CAISO unintentionally removed “the CAISO” when removing an unnecessary phrase.
<b>Section 40.9.2 (b)</b>	(1) The entire capacity of a resource in any of the following categories is exempt from the RAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity – (A) Variable Energy Resources; (B) Combined Heat and Power Resources; <del>and</del> (C) Run-of-River Resources; and (D) Hybrid Resources.	The CAISO is correcting a typographical error by removing the unnecessary “and.”
<b>Section 41.9, First Sentence</b>	As specified in Section 11.13. <del>75</del> , the CAISO will allocate Reliability Must-Run costs not recovered through market revenues to the Scheduling Coordinators for Load-Serving Entities that serve load in the TAC Area(s) in which the need for the RMR Contract arose.	The CAISO proposes to correct a CAISO tariff cross-reference.
<b>Appendix A, AWE Notice</b>	- <del>AWE Notice [Not Used]</del> <del>Alert, Warning or Emergency Notice</del>	In its January 30, 2017 “Order Accepting Tariff Revisions” 158 FERC ¶ 61,085 in

		<p>docket no. ER17-415, FERC accepted the CAISO’s proposal to remove the “System Alert” “System Warning” and the “AWE” notice scheme from the tariff as part of the CAISO’s tariff amendment to revise and update its emergency tariff provisions and to maintain the emergency notice in operating procedures with the goal to adopt the NERC/WECC terminology in the future. In this tariff clarification filing, the CAISO is removing a few remaining references that were not addressed in the 2016 amendment filing.</p>
<p><b>Appendix A, Settlement Statement</b></p>	<p>Any one of the following: Initial Settlement Statement T+3B, <a href="#">Initial Settlement Statement T+9B</a>, Recalculation Settlement Statement T+12B, Recalculation Settlement Statement T+55B, <a href="#">Recalculation Settlement Statement T+70B</a>, Recalculation Settlement Statement T+9M, <a href="#">Recalculation Settlement Statement T+11M</a>, Recalculation Settlement Statement T+18M, <a href="#">Recalculation Settlement Statement T+21M</a>, <a href="#">Recalculation Settlement Statement T+24M</a>, Recalculation Settlement Statement T+33M, Recalculation Settlement Statement T+36M, Unscheduled Reissue Recalculation Settlement Statement, or any other Recalculation Settlement Statement authorized by the CAISO Governing Board.</p>	<p>The CAISO is proposing these addition to the defined term “Settlement Statement” to include all current types.</p>
<p><b>Appendix B.10, Article IV, Section 4.3</b></p>	<p><b>System Emergency Response.</b> The SUDC will participate in Load Shedding by reducing Load on a voluntary basis when the CAISO declares <a href="#">an emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment Stage 1 System Emergency</a>. The SUDC will use any available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC will not be called separately <a href="#">in Stage 3 System Emergencies</a> to manually shed Load. Load restoration of any voluntary Load reduction may not</p>	<p>In its January 30, 2017 “Order Accepting Tariff Revisions” 158 FERC ¶ 61,085 in docket no. ER17-415, FERC accepted the CAISO’s proposal to remove the “System Alert” “System Warning” and the “AWE” notice scheme from the tariff as part of the CAISO’s tariff amendment to revise and update our emergency tariff provisions and to maintain the emergency notice in</p>

	<p>commence until such time as the CAISO declares that a System Emergency no longer exists. The responsibilities of the Parties to direct and to accept direction for Load reduction or other emergency plans are stated in Sections 4.11.4 and 4.11.5 of the CAISO Tariff, and the CAISO Operating Procedures identified in Schedule 9 and CAISO Specifications identified in Schedule 6.</p>	<p>operating procedures with the goal to adopt the NERC/WECC terminology in the future. In this tariff clarifications filing, the CAISO is removing a few remaining references that were not addressed in the 2016 amendment filing.</p>
<p><b>Appendix F, Schedule 1, Part C</b></p>	<p>(4) CAISO Operating Cost Reserve adjustment is the sum of:</p> <ul style="list-style-type: none"> <li>(a) The <u>actual</u> excess or shortfall in collections of the prior year's rates compared to the budgeted amounts;</li> <li>(b) The <u>actual</u> excess or shortfall in <del>actual</del> CAISO Operating Costs, CAISO Other Costs and Revenues and CAISO Financing Costs for the prior year compared to the budgeted amounts <u>except any excess in the prior year budgeted amount for self-insured healthcare costs compared to actual self-insured healthcare costs;</u></li> <li>(c) The estimate of current year collections and costs compared to budgeted amounts for the current year <del>except any excess in the prior year budgeted amount for self-insured healthcare costs compared to actual self-insured healthcare costs;</del> and</li> <li>(d) The change in CAISO Operating Cost Reserve consistent with the level of the CAISO Operating Cost Reserve requirement.</li> </ul>	<p>The CAISO is correcting a typographical error. During an earlier filing (ER21-112), the CAISO intended to add the language at the end of (4)(b) but unintentionally added it under (4)(c).</p>
<p><b>Appendix F, Schedule 4, Second Paragraph</b></p>	<p>The rate of the Forecast Fee shall be determined so as to recover the projected annual costs related to developing Energy forecasting systems, generating forecasts, validating forecasts, and monitoring forecast performance, that are incurred by the CAISO as a direct result of participation by Eligible Intermittent Resources, Variable Energy Resources that are EIM Participating Resources, and the variable component of Hybrid Resources in CAISO Markets, divided by their projected annual</p>	<p>The CAISO is proposing to correct a typographical error by adding a comma to properly separate the list of defined terms.</p>



	Energy production.	
<b>Appendix Q, Section 2.2.2</b>	<p>The CAISO shall develop criteria to determine whether one or more Eligible Intermittent Resources may be included within a Participating Intermittent Resource. Such criteria shall include:</p> <p>(a) A Participating Intermittent Resource must be at least <u>one-half (.5)</u> <del>one (1)</del> MW rated capacity.</p> <p style="text-align: center;">* * * * *</p>	<p>The CAISO is proposing this clarification to change the minimum size of a Participating Intermittent Resource (PIR) from 1 MW to .5 MW. This aligns with recent changes allowing resources to sign a Participating Generator Agreement if they are .5 MW or larger. The threshold used to be 1 MW and the PIR threshold was set to match that.</p>
<b>Appendix Q, Table of Contents (Headers), and mirrored Section 3 (Headers)</b>	<p><b>3.1 Forecast Data - <u>Wind</u></b></p> <p>The CAISO may require various data relevant to forecasting Energy from an Eligible Intermittent Resource or Hybrid Resource with a variable component to be telemetered to the CAISO, including appropriate operational data, meteorological data or other data reasonably necessary to forecast Energy.</p> <p style="text-align: center;">* * * * *</p> <p><b>3.1.6 Shape-File Submission</b></p> <p>Each wind Eligible Intermittent Resource and Hybrid Resource with a wind generation component must submit a shape-file that illustrates, at a minimum, the location of the meteorological station(s), resource project corner, and all individual wind turbines comprising the resource. The shape-file must be submitted in .shp, .dbf, or other file format upon which the CAISO and resource mutually agree.</p> <p><b><u>3.2 Forecast Data – Solar</u></b></p>	<p>The CAISO is proposing to update one header and add the missing header in the text within the section of Appendix Q.</p>



	<p><b>3.2.1 Solar Generation Meteorological Station Requirements</b>          Each solar Eligible Intermittent Resource and Hybrid Resource with a solar generation component must install and maintain equipment required by the CAISO to support accurate power generation forecasting and the communication of such forecast, meteorological, and other required data to the CAISO consistent with the timeframes specified in this Eligible Intermittent Resource Protocol.</p>	
<p><b>Appendix DD, Section 6.2, First Paragraph</b></p>	<p>The Phase I Interconnection Study will consist of a short circuit analysis, a stability analysis to the extent the CAISO and applicable Participating TO(s) reasonably expect transient or voltage stability concerns, a power flow analysis, including off-peak analysis, an On-Peak Deliverability Assessment, and an Off-Peak Deliverability Assessment for the purpose of identifying LDNUs and LOPNUs and estimating the cost of ADNUs <u>and</u> AOPNUs, as applicable.</p>	<p>The CAISO is proposing to correct a typographical error by adding in the word “and” after it was mistakenly deleted during the filing that adding “AOPNUs.”</p>
<p><b>Appendix DD, Section 6.3.2.2 Last Sentence of First Paragraph</b></p>	<p>LCRIGs whose fuel source or source of energy substantially occurs off-peak will receive Off-Peak Deliverability Status based upon the Off-Peak Deliverability Assessment, regardless of their On-Peak Deliverability Status.</p>	<p>The CAISO is proposing to correct a typographical error. “Received” should be corrected to the proper tense, “receive.”</p>
<p><b>Appendix DD, Section 6.3.2.2, Third &amp; Fourth Paragraphs</b></p>	<p>The CAISO will perform the Off-Peak Deliverability Assessment to identify Off-Peak Network Upgrades required for Generating Facilities to achieve Off-Peak Deliverability Status, and any such upgrades identified in the Off-Peak Deliverability Assessment as part of the Phase I Interconnection Study shall be estimated in accordance with Section 6.4. <del>The estimated costs of such upgrades identified in the assessment will be referred to as “off peak Deliverability transmission upgrades,” the description of such upgrades in any report will be conceptual in nature, and such transmission upgrades will not be included as an Assigned Network Upgrade or Conditionally Assigned Network Upgrade within the applicable Interconnection Study report.</del></p>	<p>The CAISO is proposing to realign FERC-approved language. This language was removed in ER20-732. Due to an overlapping filing, the language was inadvertently added back in.</p>



	<p><del>The cost of all transmission upgrades identified in the Off-Peak Deliverability Assessment performed during the course of the Phase I Interconnection Study shall be estimated in accordance with Section 6.4.</del> The Off-Peak Deliverability Assessment does not convey any right to deliver electricity to any specific customer or Delivery Point, nor guarantee any level of deliverability, or transmission capacity, or avoided curtailment.</p>	
<p><b>Appendix FF Article 1, Section 1.8.3, Second to Last Sentence</b></p>	<p>Once Interconnection Customer has synchronized the Small Generating Facility with the CAISO Controlled Grid, Interconnection Customer shall operate the Small Generating Facility consistent with the provisions specified in Sections 1.8.3.1 and 1.8.3.2 of this SGIA.</p>	<p>The CAISO is correcting a typographical error by adding a “3” in a cross reference.</p>
<p><b>Appendix FF Attachment 1, Glossary of Terms</b></p>	<p><b>Network Upgrades</b> - Additions, modifications, and upgrades to the Participating TO's Transmission System required at or beyond the point at which the Small Generating Facility interconnects with the CAISO Controlled Grid to accommodate the interconnection of the Small Generating Facility with the CAISO Controlled Grid. Network Upgrades do not include Distribution Upgrades.</p> <p><b>Operational Control</b> - The rights of the CAISO under a Transmission Control Agreement and the CAISO Tariff to direct the parties to the Transmission Control Agreement how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting applicable reliability criteria.</p>	<p>The CAISO is correcting a typographical error by separating out the two individual definitions and bolding “operational control.” At present they are grouped as one large definition under Network Upgrades.</p>

**Attachment B – Clean Tariff**  
**Tariff Clarifications Amendment Filing**  
**California Independent System Operator Corporation**  
**December 12, 2022**

## Section 4

\* \* \* \* \*

### **4.5.1.1.6 Other Scheduling Coordinator Application Requirements**

\* \* \* \* \*

### **4.5.1.3 Additional Scheduling Coordinator ID Code Registration**

A Scheduling Coordinator Applicant is granted one Scheduling Coordinator ID Code (SCID) with its application fee. Requests may be made for additional Scheduling Coordinator ID Codes. The fee for each additional Scheduling Coordinator Identification Code is specified in Schedule 1 of Appendix F.

\* \* \* \* \*

## **4.8 Relationship Between CAISO and Intermittent Resources**

\* \* \* \* \*

**4.11.5.1** If the CAISO declares an emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment, the SUDC shall use any reasonably available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC shall not be called separately to manually shed Load. Load restoration of any voluntary Load reduction will occur once the CAISO declares that a System Emergency no longer exists.

\* \* \* \* \*

## Section 8

\* \* \* \* \*

### **8.2.3.1 Regulation Service**

The CAISO shall maintain sufficient resources immediately responsive to the CAISO's EMS control in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet NERC and WECC reliability standards and any requirements of the NRC by continuously balancing resources to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time shall be determined based on several factors as further described in the applicable Business Practice Manual, including but not limited to historic needs for Regulation Down and Regulation Up capacity as well as forecast operating conditions. In HASP, the CAISO will determine the amount of advisory Regulation from Dynamic System Resources required for each Settlement Period in the next Trading Hour. The advisory awards of Regulation from Dynamic System Resources in HASP are not binding and are re-optimized through the FMM and RTD processes in the Real-Time Market. The CAISO will take into account the speed and accuracy of regulation resources in its determination of Regulation requirements, including as it qualifies self-provided Regulation. Upon request of a Scheduling Coordinator, the CAISO will share with the Scheduling Coordinator its reasoning and any related data used to make the determination of whether the Scheduling Coordinator's self-provided Regulation capacity meets its regulation obligation.

The requirement for Regulation Down or Regulation Up needed for each Settlement Period of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time shall each be accompanied by a requirement for Mileage as determined by the CAISO. The CAISO shall determine the Mileage requirements in any Settlement Period based on Regulation capacity requirements as well as the Bid-in Regulation capacity for that Settlement Period. Subject to operator adjustment, the Mileage requirement for either Regulation Up or Regulation Down will reflect the minimum of (a) the product of the respective Regulation capacity requirement and the System Mileage Multiplier; (b) the average Instructed Mileage for the applicable Trading Hour from the prior seven (7) days; or (c) the product of each resource's

resource specific Mileage multiplier(s) and its Bid-in Regulation capacity summed for all resources.

The CAISO will publish on OASIS the estimated quantity, or the percentage used to determine the estimated quantity, of Regulation Reserves required for each hour of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time for the Trading Day. The CAISO will publish on OASIS the Mileage requirements for each hour of the Day-Ahead Market and each fifteen (15) minute period in Real-Time for the Trading Day. The CAISO will also publish on OASIS the average Instructed Mileage from the prior seven (7) days for each hour of a Trading Day no later than seven (7) calendar days after the applicable Trading Day.

\* \* \* \* \*

### **8.3.1 Procurement of Ancillary Services**

The CAISO shall operate competitive Day-Ahead and Real-Time Markets to procure Ancillary Services. The Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) applications used in the Integrated Forward Market (IFM) and the Real-Time Market (RTM) shall calculate optimal resource commitment, Energy, and Ancillary Services Awards and Schedules at least cost to End-Use Customers consistent with maintaining System Reliability. Any Scheduling Coordinator representing resources, System Units, Participating Loads, Proxy Demand Resources or imports of System Resources may submit Bids into the CAISO's Ancillary Services markets provided that it is in possession of a current certificate for the resources concerned. Regulation Up, Regulation Down, and Operating Reserves necessary to meet CAISO requirements not met by self-provision will be procured by the CAISO as described in this CAISO Tariff. The amount of Ancillary Services procured in the IFM is net of (i) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The amount of Ancillary Services procured in the Real-Time Market is net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating

Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, (iii) additional Operating Reserves procured in the FMM, and (iv) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO may procure incremental Ancillary Services in the Real-Time Market based in part on a determination during the FMM that any Ancillary Services capacity awarded or self-provided in the Day-Ahead Market is not available as a result of a resource constraint or Transmission Constraints. Resource constraints may include but are not limited to an Outage of a resource or Ramp Rate constraints. Incremental procurement in the Real-Time Market will exclude Ancillary Services Capacity the CAISO has determined is not available.

The CAISO will manage the Energy from both CAISO-procured and Self-Provided Ancillary Services as part of the FMM and Real-Time Dispatch. In the Day-Ahead Market, the CAISO procures one-hundred (100) percent of its Ancillary Service requirements based on the Day-Ahead Demand Forecast net of Self-Provided Ancillary Services. After the Day-Ahead Market, the CAISO procures additional Ancillary Services needed to meet system requirements from all resources in the Real-Time Market. The amount of Ancillary Services procured in the Real-Time Market is based on the CAISO's requirements for Ancillary Services for the Operating Hour net of Self-Provided Ancillary Services.

Awards of AS in the RTM to Non-Dynamic System Resources are for the entire next Operating Hour. The CAISO procurement of Ancillary Services from all other resources in the Real-Time Market is for a fifteen (15) minute FMM interval. The CAISO's procurement of Ancillary Services from Non-Dynamic System Resources, Dynamic System Resources and internal Generation (which includes Generation from Generating Units that are Pseudo-Ties to the CAISO Balancing Authority Area) in the Real-Time Market is based on the Ancillary Service Bids submitted or generated in the RTM consistent with the requirements in Section 30. The CAISO may also procure Ancillary Services pursuant to the requirements in Section 42.1 and as permitted under the terms and conditions of a Reliability Must-Run Contract.

The CAISO will contract for long-term Voltage Support service with owners of Reliability Must-Run Units under Reliability Must-Run Contracts. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the CAISO.

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### **8.6.4.3 Information To Be Submitted By Scheduling Coordinators For Each Service**

\* \* \* \* \*

### **8.10.3 Non-Spinning Reserve**

The CAISO will test the Non-Spinning Reserve capability of a resource by issuing unannounced Dispatch Instructions requiring the resource to ramp to its certified capacity within ten (10) minutes. The CAISO shall measure the response of the resource or Load to determine compliance with requirements. The Scheduling Coordinator for the resource shall be paid pursuant to Section 11.5.6. For a Multi-Stage Generating Resource the range of Non-Spinning capacity evaluated is the range at the applicable MSG Configuration.

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## **Section 9**

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### **9.3.3 Request Submission and Information**

The Operator or Scheduling Coordinator of facilities that comprise the CAISO Controlled Grid or of a Participating Generator, Participating Intermittent Resource, Generating Unit, System Unit, Physical Scheduling Plant, Proxy Demand Resource, Reliability Demand Response Resource, Non-Generation Resource, Participating Load, or other resource subject to the outage management requirements of Section 9, shall use the ISO's outage management system to --

- (1) Submit all outage requests under Section 9.
- (2) Provide the required information about the outage and work to be performed using the nature of work categories described in the Business Practice Manual.

- (3) For transmission outage requests, additionally provide structured and detailed outage modeling information at the facility level and/or the breaker/switch level. If the work to be performed will require a switch position to change during the outage period, the Operator or Scheduling Coordinator must submit a separate outage request for each configuration.
- (4) For resource outage requests, additionally provide the required information for the resource at the aggregate project or plant level, and also at the individual unit level for a unit de-rate greater than 50 MW, and any limitations on the resource's availability to provide each type of ancillary service for which it is certified.
- (5) Notify the CAISO of temporary changes in physical characteristics specified in the Master File, including the PMax, Minimum Load, and Ramping capability of the unit, due to changes in their actual physical characteristics. Changes in the physical characteristics related to Minimum Load shall only be for temporary increases in Minimum Load due to ambient temperature, outages of mechanical equipment, or environmental regulations.
- (6) For Outages that involve extending or increasing the scheduled duration of a Maintenance Outage or MW amount of capacity on Maintenance Outage, respectively, submit a new Outage request to cover the extension or increase in the extent of the Outage.

\* \* \* \* \*

## **Section 10**

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### **10.2.5 CAISO Authorized Inspectors**

#### **10.2.5.1 Published List of Inspectors**

The CAISO will publish on the CAISO Website, for informational purposes only, a list of the CAISO Authorized Inspectors and details of the procedure for applying to become a CAISO Authorized Inspector.

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## **Section 11**

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### **11.2.2 Calculation of Hourly RUC Compensation**

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#### **11.2.2.2 Undelivered RUC Capacity**

The CAISO will rescind a resource's RUC Availability Payment, or portion thereof, when the resource's total metered output is less than Expected Energy by more than the Tolerance Band and less than the RUC Schedule. For purposes of this calculation, total metered output will not include Energy provided or reduced as a result of AGC signals.

\* \* \* \* \*

#### **11.2.4.7 Adjustment of CRR Revenue Related to Schedules that Source and Sink in the Same Balancing Authority Area**

The CAISO will adjust the revenue from the CRRs of a CRR Holder where the Scheduling Coordinator representing that CRR Holder has submitted Bids (including Self-Schedules), in violation of Section 30.5.5 and the resulting Schedule(s) impacts the value of the CRRs in the DAM held by that CRR Holder. Such adjustment will occur if the following circumstances are all met:

- (a) A portion of the E-Tag that uses the CAISO Controlled Grid relates to a Schedule in the Day-Ahead Market;
- (b) The scheduled MW on the portion of the E-Tag using the CAISO Controlled Grid has a positive PTDF on a congested transmission element, where that congestion is measured in the direction of the CRR; and

- (c) The CRR Holder would receive payments from CRRs on the congested transmission element.

If such circumstances occur, the CAISO adjusts the CRR revenue in that Settlement Period so that the additional net CRR revenue that otherwise would be earned from the congestion created by the Schedule that results from the Bids submitted in violation of Section 30.5.5 is not paid to the CRR Holder. Instead, the CAISO will add those funds to the Hourly CRR Congestion Fund for the applicable Transmission Constraint.

\* \* \* \* \*

**11.5.2.4 [Not Used]**

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**11.8.2.4 Ramping for IFM Initial Conditions or Self-Schedules**

The CAISO shall determine the net IFM Bid Cost surplus or net IFM Bid Cost shortage across all full ramp down periods that start with an initial condition at the start of the IFM or a full ramp period within a 24 hour day-ahead market associated with a Self-Schedule any time within the full ramp period. For such full ramp periods associated with an initial condition or Self-Schedule with a net IFM Bid Cost shortfall, the net IFM Energy Bid Cost shortfall will not be included in IFM Bid Cost calculations. For the full ramp periods with a net IFM Bid Cost surplus, the surplus will be included in IFM Bid Cost calculations. For full other ramp periods not associated with an initial condition or Self-Schedule with IFM Energy Bid Cost shortfall, the shortfall will be included in IFM Bid Cost calculations. The CAISO will identify the Trading Hours scheduled as full ramp up periods as of the first hour where the resource is ramping up at full ramp until the last hour where the resource is ramping up at full ramp. Likewise, a full ramp down period will be identified as of first hour where the resource is ramping down at full ramp until the last hour that the resource is ramping down at full ramp.

\* \* \* \* \*

#### **11.8.4.1.1 RTM Start-Up Cost**

For each Settlement Interval of the applicable RTM Commitment Period, the RTM Start-Up Cost shall consist of the Start-Up Bid Cost of the Bid Cost Recovery Eligible Resource applicable to the Real-Time Market divided by the number of Settlement Intervals in the applicable RTM Commitment Period. For each Settlement Interval, only the RTM Start-Up Cost in a CAISO RTM Commitment Period is eligible for Bid Cost Recovery. The CAISO will determine the RTM Start-Up Cost for a Multi-Stage Generating Resource based on the MSG Configuration committed by the CAISO in the RTM. The following rules shall be applied in sequence and shall qualify the RTM Start-Up Cost in an RTM Commitment Period:

- (a) The RTM Start-Up Cost is zero if there is an RTM Self-Commitment Period within the RTM Commitment Period.

\* \* \* \* \*

- (g) The RTM Start-Up Cost for an RTM Commitment Period shall be qualified if an actual Start-Up occurs earlier than the start of the RTM Start-Up, if the relevant Start-Up is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the RTM Start-Up, otherwise the Start-Up Bid Cost is zero for the RTM Commitment Period.

\* \* \* \* \*

#### **11.8.4.1.2 RTM Minimum Load Cost**

The RTM Minimum Load Cost is the Minimum Load Bid Cost of the Bid Cost Recovery Eligible Resource applicable for the Real-Time Market, divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the RTM Minimum Load Cost in a CAISO RTM Commitment Period is eligible for Bid Cost Recovery. The RTM Minimum Load Cost for any Settlement Interval is zero if: (1) the

Settlement Interval is included in a RTM Self-Commitment Period for the Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource has been manually dispatched under a Legacy RMR Contract or the resource has been flagged as an RMR Dispatch in the Day-Ahead Schedule or the Real-Time Market in that Settlement Interval; (3) for all resources that are not Multi-Stage Generating Resources, that Settlement Interval is included in an IFM Commitment Period or RUC Commitment Period; or (4) the Bid Cost Recovery Eligible Resource is committed pursuant to Section 34.11.2 for the purpose of performing Ancillary Services testing, pre-commercial operation testing for Generating Units, or PMax testing. A resource's RTM Minimum Load Costs for Bid Cost Recovery purposes are subject to the application of the Real-Time Performance Metric as specified in Section 11.8.4.4. For Multi-Stage Generating Resources, the commitment period is further determined based on application of Section 11.8.1.3. For all Bid Cost Recovery Eligible Resources that the CAISO Shuts Down, either through an Exceptional Dispatch or an Economic Dispatch through the Real-Time Market, from its Day-Ahead Schedule that was also from a CAISO commitment, the RTM Minimum Load Costs will include negative Minimum Load Bid Costs for Energy between the Minimum Load as registered in the Master File, or if applicable, as modified pursuant to Section 9.3.3, and zero (0) MWhs.

\* \* \* \* \*

## **11.8.6 System-Wide IFM, RUC And RTM Bid Cost Uplift Allocation**

### **11.8.6.1 Determination of IFM, RUC and RTM Bid Cost Uplift**

For each Settlement Interval, the CAISO shall determine the IFM, RUC and RTM Bid Cost Uplift for purposes of allocating the IFM, RUC and RTM Bid Cost Uplift as described below. In determining the IFM, RUC and RTM Bid Cost Uplifts below, the Unrecovered Bid Cost Uplift Payments for MSS BCR Eligible Resources in Metered Subsystems where the MSS Operator has elected net Settlement will be included on an MSS basis and not on an individual resource basis.

- (i) The IFM Bid Cost Uplift shall be the net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

(ii) The RUC Bid Cost Uplift shall be the net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources in the CAISO Balancing Authority Area with Unrecovered Bid Cost Uplift Payments.

(iii) The RTM Bid Cost Uplift shall be the net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

#### **11.8.6.2 Sequential Netting of RUC and RTM Bid Cost Uplift**

For each Settlement Interval, the Net RUC or Real-Time Market Bid Cost Uplift is determined for the purposes of allocating Net RUC or Real-Time Market Bid Cost Uplift by the following netting rules applied:

- (i) The Net RUC Bid Cost Uplift is equal to the greater of zero or any positive RUC Bid Cost Uplift offset by negative Real-Time Market Bid Cost Uplift.
- (ii) The Net Real-Time Market Bid Cost Uplift is equal to the greater of zero or any positive Real-Time Market Bid Cost Uplift offset by any negative RUC Bid Cost Uplift.

#### **11.8.6.3 Determination of Total Positive CAISO Markets Uplifts**

##### **11.8.6.3.1 Total Positive IFM Uplift**

\* \* \* \* \*

#### **11.10.9.3 Rescission of Payments for Undelivered Ancillary Service Capacity**

If the total metered output of a Generating Unit, Participating Load, System Unit or System Resource is insufficient to supply the amount of FMM Instructed Imbalance Energy or RTD Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Spinning Reserves or awarded or self-provided Non-Spinning Reserves in any Settlement Interval, then the capacity payment associated with the difference between the scheduled amount of each Ancillary Service for which insufficient Energy was delivered and the actual output attributed to the response to the Dispatch Instruction shall be rescinded. If, after the issuance of a Dispatch Instruction associated with Non-Spinning Reserves, the actual response of a Proxy Demand Resource is insufficient to supply the amount of FMM Instructed Imbalance Energy or RTD Instructed Imbalance Energy associated with a

Dispatch Instruction issued in accordance with awarded or self-provided Non-Spinning Reserves, then the capacity payment associated with the difference between the scheduled amount and the actual amount attributed to the response to the Dispatch Instruction (as established pursuant to the applicable Business Practice Manual) shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, Proxy Demand Resource, System Unit, or System Resource is less than a deadband amount published by the CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh. For purposes of these calculations, total metered output will not include Energy provided or reduced as a result of AGC signals.

\* \* \* \* \*

#### **11.13.5 Daily RMR Excess Revenues**

For each Trading Day, the CAISO will calculate the Daily RMR Excess Revenues as the total CAISO daily sum of IFM excess payment, RC excess payment, and RTM excess payment. The RMR Resource will have its RMR Capacity Payment reduced by the IFM excess payment, if the net of all IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses calculated pursuant to Section 11.8.2 over a Trading Day is negative. The RMR Resource will have its RMR Capacity Payment reduced by the RUC excess payment, if the net of all RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses calculated pursuant to Section 11.8.3 over a Trading Day is negative. The RMR Resource will have its RMR Capacity Payment reduced by the RTM excess payment, if the net of all RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses calculated pursuant to Section 11.8.4 over a Trading Day is negative.

\* \* \* \* \*

#### **11.19.1 FERC Annual Charge Recovery Rate**

##### **11.19.1.1 Obligation for FERC Annual Charges**



Each Scheduling Coordinator shall be obligated to pay for the FERC Annual Charges for its use of the CAISO Controlled Grid to transmit electricity, including any use of the CAISO Controlled Grid through Existing Contracts scheduled by the Scheduling Coordinator. Any FERC Annual Charges to be assessed by FERC against the CAISO for such use of the CAISO Controlled Grid shall be assessed against Scheduling Coordinators at the FERC Annual Charge Recovery Rate. Such assessment shall be levied monthly against all Scheduling Coordinators based upon each Scheduling Coordinator's metered Demand and exports.

\* \* \* \* \*

**11.22.2.5 Allocation of the GMC Among Scheduling Coordinators**

The costs will be allocated to the service charges that comprise the Grid Management Charge according to the formula in Appendix F, Schedule 1, Part A. The costs recovered through the Grid Management Charge shall not exceed \$202 million unless the CAISO submits a tariff amendment increasing this amount pursuant to Section 205 of the FPA and FERC accepts such amendment.

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**11.29.10.4 [Not Used]**

\* \* \* \* \*

**Section 22**

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**22.1.3 Audit Results**

Exceptions identified as a result of an audit will be reviewed with the CAISO Audit Committee. The

results of the audits and actions to be taken by the CAISO as a result of the audit shall be made available to Market Participants upon request.

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## **Section 24**

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### **24.3.1 Inputs to the Unified Planning Assumptions and Study Plan**

The CAISO will develop Unified Planning Assumptions and a Study Plan using information and data from the approved Transmission Plan developed in the previous planning cycle. The CAISO will consider the following in the development of the Unified Planning Assumptions and Study Plan:

- (a) WECC base cases, as may be modified for the relevant planning horizon;

\* \* \* \* \*

- (m) The most recent Annual Interregional Information provided by other Planning Regions; and
- (n) Import Capability expansion requests submitted in comments on the draft Unified Planning Assumptions and Study.

\* \* \* \* \*

### **24.4.7 Description of Transmission Solutions**

The transmission solutions identified in the revised draft and final comprehensive Transmission Plan, or in a supplemental assessment to the final comprehensive Transmission Plan, that are subject to the competitive solicitation process will provide sufficient engineering detail to permit Project Sponsors to submit complete proposals, under section 24.5.1 to build the identified transmission solution. As further

described in the Business Practice Manual, such details may include, but are not limited to:

- (a) Minimum Conductor Ampacity;
- (b) Approximate Line impedance required;
- (c) Approximate Series compensation levels;
- (d) Substation bus and breaker configuration;
- (e) Breaker clearing times;
- (f) Transformer characteristics (capacity, impedance, tap range);
- (g) Minimum Shunt capacitor and reactor sizes;
- (h) Minimum FACTS device specifications;
- (i) RAS requirements;
- (j) Planning level cost estimates;
- (k) Projected in-service date.

\* \* \* \* \*

#### **24.5.1 Competitive Solicitation Process**

According to the schedule set forth in the Business Practice Manual, in the month following the CAISO Governing Board's approval of the comprehensive Transmission Plan, or a supplemental assessment to the final comprehensive Transmission Plan, whichever is applicable, the CAISO will initiate a period of at least ten (10) weeks that will provide an opportunity for Project Sponsors to submit specific proposals to finance, own, and construct the Regional Transmission Facilities subject to competitive solicitation identified in the comprehensive Transmission Plan or supplemental assessment. If the transmission solution adopted in Phase 2 involves an upgrade or improvement to, addition on, or a replacement of a part of an existing Participating TO facility, the Participating TO will construct and own such upgrade, improvement, addition or replacement facilities unless a Project Sponsor and the Participating TO agree to a different arrangement. For Regional Transmission Facilities with capital costs of \$50 million or less that were approved by CAISO management before Governing Board approval of the comprehensive Transmission Plan, the ten week period will be initiated following management approval of the facility, and

the Project Sponsor selection process may follow an accelerated schedule described in the Business Practice Manual. Such proposals must include plan of service details and supporting information as set forth in the Business Practice Manual sufficient to: (1) enable the CAISO to determine whether the Project Sponsor meets the qualification criteria specified in section 24.5.3.1; (2) enable the CAISO to determine whether a Project Sponsor's proposal meets the proposal qualification criteria in section 24.5.3.2; and (3) enable the CAISO, if there are multiple qualified Project Sponsors bidding on the same Regional Transmission Facility, to conduct a comparative analysis of the proposals and Project Sponsors and select an Approved Project Sponsor as described in section 24.5.3.5. The project proposal will identify the authorized governmental body from which the Project Sponsor will seek siting approval for the project. Within 30 days after the CAISO posts the revised draft comprehensive Transmission Plan, or a supplemental assessment to the final comprehensive Transmission Plan, to its website, whichever is applicable, for each Regional Transmission Facility identified in the revised draft comprehensive Transmission Plan or supplemental assessment that is subject to competitive solicitation, the CAISO will post, for informational purposes only, those existing qualification criteria and selection factors, in addition to any binding cost containment commitments, which the CAISO believes are key for purposes of selecting an Approved Project Sponsor for the particular transmission solution, consistent with the comparative analysis described in section 24.5.4 and the project sponsor qualification and selection criteria specified in sections 24.5.3.1 and 24.5.4, respectively.

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## **Section 25**

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### **25.3 Maintenance of Encumbrances**

No new Generating Unit shall adversely affect the ability of the applicable Participating TO to honor its Encumbrances existing as of the time an Interconnection Customer submits its Interconnection Request to the CAISO. The applicable Participating TO, in consultation with the CAISO, shall identify any such adverse effect on its Encumbrances in the applicable Interconnection Study. To the extent the applicable

Participating TO determines that the connection of the new Generating Unit will have an adverse effect on Encumbrances, the Interconnection Customer shall mitigate such adverse effect.

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## **Section 27**

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### **27.6 State Estimator**

The State Estimator produces a power flow solution based upon the modeled representation of the electrical network and available Real-Time SCADA telemetry. When this solution is applied to the FNM, it provides a reference of system conditions for determining Dispatch Instructions. The State Estimator also provides a reference for Real-Time Load Distribution Factors used to distribute the Real-Time CAISO Forecast of CAISO Demand as well as provide a source of historical data for the LDF library. In lieu of the State Estimator, the CAISO may use the last best State Estimator solution or use telemetry for determining Dispatch Instructions. In all cases, the CAISO shall use the Load Distribution Factors from the Load Distribution Factors library as applicable to the prevailing system and time of use conditions to determine Dispatch Instructions.

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## **Section 29**

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### **29.2 EIM Entity and EIM Sub-Entity Access to the Real-Time Market**

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**(b) Implementation of Access as an EIM Entity.**

\* \* \* \* \*

**(6) Readiness Certification.**

**(A) Certification.** The CAISO and the prospective EIM Entity shall each file a market readiness certificate with FERC at least 30 days prior to the EIM Entity Implementation Date in which a senior officer of each entity attests –

- (i) that the processes and systems of the prospective EIM entity have satisfied or will have satisfied the readiness criteria set forth in Section 29.2(b)(7) as of the EIM Entity Implementation Date;
- (ii) to any known issues requiring resolution prior to the EIM Entity Implementation Date in accordance with section 29.2(b)(8);
- (iii) to any exceptions from the established thresholds specified in the Business Practice Manuals, and that despite such exceptions the criteria were met or will be met as specified in 29.2(b)(7); and
- (iv) that the EIM Entity Implementation Date is conditional on the resolution of the known issues identified in the certificates and any unforeseen issues that undermine the satisfaction of the readiness criteria set forth in Section 29.2(b)(7).

**(B) Delay or Re-Certification.** If, subsequent to readiness certification pursuant to Section 29.2(b)(6)(A), the CAISO or the prospective EIM Entity determines that it cannot proceed with implementation on the EIM Entity Implementation Date, the CAISO or the prospective EIM Entity will notify FERC of the delay, the reason for the delay, the new EIM Entity Implementation Date if it can be determined, and whether it will need to

re-issue a portion or all of the readiness certification.

\* \* \* \* \*

## 29.9 Outages and Critical Contingencies.

\* \* \* \* \*

### (d) **Actions Regarding Scheduled Outages.**

- (1) **CAISO Evaluation of Scheduled Outages.** The CAISO will implement the transmission and Generation Outages approved by the EIM Entity or EIM Sub-Entity through the Day-Ahead Market process and will inform the EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator where applicable of any anticipated overloads.
- (2) **EIM Entity and EIM Sub-Entity Action.** Based on the information provided by the CAISO to the EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator, the EIM Entity and EIM Sub-Entity shall have the opportunity to take action to adjust or cancel Outages as it determines to be necessary.
- (3) **Notice to Reliability Coordinator.**
  - (A) **EIM Entity and EIM Sub-Entity Responsibility.** The EIM Entity and EIM Sub-Entity are responsible for informing the Reliability Coordinator of scheduled Outages.
  - (B) **CAISO Facilitation.** Upon request of an EIM Entity or EIM Sub-Entity, and without assuming any liability, the CAISO may provide a third party Reliability Coordinator with Outage information submitted to the CAISO by the EIM Entity or EIM Sub-Entity on behalf of the EIM Entity or EIM Sub-Entity.

\* \* \* \* \*

## 29.11 Settlements and Billing for EIM Market Participants.

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### (i) **EIM Administrative Charge.**

- (1) **In General.** The CAISO will charge EIM Market Participants an EIM Administrative Charge consisting of the real-time portions of the Market Services Charge and the System Operations Charge.

\* \* \* \* \*

## 29.34 EIM Operations

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### (e) **EIM Resource Plan.**

- (1) **In General.** By 10:00 a.m. of the day preceding the Operating Day, the EIM Entity Scheduling Coordinators and, if permitted by the EIM Entity, EIM Sub-Entity Scheduling Coordinators on behalf of non-participating resources and EIM Participating Resource Scheduling Coordinators on behalf of EIM Participating Resources, must submit all applicable components of the EIM Resource Plan as set forth in Section 29.34(e)(3).
- (2) **Scope.** The EIM Resource Plan components must cover a seven day horizon (with hourly detail for each resource) beginning with the Operating Day.
- (3) **Contents.** The EIM Resource Plan shall comprise-
  - (A) EIM Base Schedules of EIM Entities, EIM Sub-Entities as applicable, and EIM Participating Resources;
  - (B) Energy Bids (applicable to EIM Participating Resources only);
  - (C) EIM Upward Available Balancing Capacity;



- (D) EIM Downward Available Balancing Capacity;
  - (E) EIM Reserves to Meet NERC/WECC Contingency Reserves Requirements; and
  - (F) if the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator is not relying on the CAISO's Demand Forecast, a Demand Forecast.
- (4) **Contents of EIM Base Schedules.** EIM Base Schedules and EIM Sub-Entities of EIM Entities must include hourly-level Demand Forecasts for EIM Demand, hourly-level schedules for resources, including any hourly-level schedules below PMin that the EIM Entity seeks an accounting for, and, for EIM Entities only, hourly-level scheduled Interchanges.
- (5) **Adjustment Prior to Submission of Real-Time EIM Base Schedules.** The EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator may adjust the components of the EIM Resource Plan prior to the submission of Real-Time EIM Base Schedules up to 75 minutes before the Operating Hour.

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### **Section 30**

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#### **30.5.2.5 Supply Bids for Metered Subsystems**

Consistent with the bidding rules specified in this Section 30.5, Scheduling Coordinators that represent MSS Operators may submit Bids for Energy and Ancillary Services, including Self-Schedules and Submissions to Self-Provide an Ancillary Service, to the DAM. All Bids to supply Energy by MSS Operators must identify each Generating Unit on an individual unit basis. The CAISO will not accept aggregated Generation Bids without complying with the requirements of Section 4.9.12 of the CAISO

Tariff. All Scheduling Coordinators that represent MSS Operators must submit Demand Bids at the relevant MSS LAP. Scheduling Coordinators that represent MSS Operators must comply with Section 4.9 of the CAISO Tariff. Scheduling Coordinators that represent MSS Operators that have opted out of RUC participation pursuant to Section 31.5 must Self-Schedule one hundred percent (100%) of the Demand Forecast for the MSS. For an MSS that elects Load following, the MSS Operator shall also self-schedule or bid Supply to match the Demand Forecast. All Bids for MSSs must identify each Generating Unit on an individual unit basis or a System Unit. For an MSS that elects Load following consistent with Section 4.9.13.2, the Scheduling Coordinator for the MSS Operator must include the following additional information with its Bids: the Generating Unit(s) that are Load following; the range of the Generating Unit(s) being reserved for Load following; whether the quantity of Load following capacity is either up or down; and, if there are multiple Generating Units in the MSS, the priority list or distribution factors among the Generating Units. The CAISO will not dispatch the resource within the range declared as Load following capacity, leaving that capacity entirely available for the MSS to dispatch. The CAISO uses this information in the IFM runs and the RUC to simulate MSS Load following. The Scheduling Coordinator for the MSS Operator may change these characteristics through the Bid submission process in the RTM. If the Load following resource is also an RMR Unit, the MSS Operator must not specify the RMR Contract Capacity specified in the RMR Contract as Load following up or down capacity to allow the CAISO to access such capacity for RMR Dispatch.

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### **30.6.3 Net Benefits Test for PDRs or RDRRs**

In accordance with Section 11.6, the CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Proxy Demand Resources and Reliability Demand Response Resources. The CAISO will not accept Proxy Demand Resource or Reliability Demand Response Resource Bids for Energy below this threshold Market Clearing Price in the CAISO Markets.

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### 30.7.3 Day-Ahead Market Validation

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**Step 3:** If the Bid successfully passes validation in Step 2, it will continue through the third level of validation where the Bid will be analyzed based on its contents to identify any missing Bid components that must be present for the Bid to be valid consistent with the market rules contained in Article III of this CAISO Tariff and as reflected in the Business Practice Manuals. At this stage the Bid will either be automatically modified for correctness and assigned a status of conditionally modified or modified, or if it can be accepted as is, the Bid will be assigned a status of conditionally valid, or valid. A Bid will be automatically modified and assigned a status of modified or conditionally modified Bid, whenever the CAISO inserts or modifies a Bid component. The CAISO will insert or modify a Bid component whenever (1) a Self-Schedule quantity is less than the lowest quantity specified as an Economic Bid for either an Energy Bid or Demand Bid, in which case the CAISO extends the Self-Schedule to cover the gap; (2) for non-Resource Adequacy Resources, the CAISO will extend the Energy Bid Curve or, if the Scheduling Coordinator did not submit an Energy Bid Curve, use the Generated Bid to cover any capacity in a RUC Bid component, if necessary; and (3) for a Resource Adequacy Resource that is not a Use-Limited Resource, the CAISO will extend the Energy Bid Curve or, if the Scheduling Coordinator did not submit an Energy Bid Curve, use the Generated Bid to cover any capacity in a RUC Bid component and, if necessary, up to the full registered Resource Adequacy Capacity. The CAISO will generate a Proxy Bid or extend an Energy Bid or Self-Schedule to cover any RUC Award or Day-Ahead Schedule in the absence of any Self-Schedule or Economic Bid components, or to fill in any gaps between any Self-Schedule Bid and any Economic Bid components to cover a RUC Award or Day-Ahead Schedule. To the extent that an Energy Bid to the HASP/RTM is not accompanied by an Ancillary Services Bid, the CAISO will insert a Spinning Reserve and Non-Spinning Reserve Ancillary Services Bid at \$ 0/MW for any certified Operating Reserve capacity. The CAISO will also generate a Self-Schedule Bid for any Generating Unit that has a Day-Ahead Schedule but has not submitted Bids in HASP/RTM, up to the quantity in the Day-Ahead Schedule. Throughout the Bid evaluation process, the Scheduling Coordinator

shall have the ability to view the Bid and may choose to cancel the Bid, modify and re-submit the Bid, or leave the modified, conditionally modified or valid, conditionally valid Bid as is to be processed in the designated CAISO Market. These validation rules apply to Bids submitted on behalf of Use Limited Resources. The purpose of the validation rules is not to increase the amount of capacity that a Use Limited Resource has offered into the CAISO Markets.

\* \* \* \* \*

### **30.7.3.3 Validation Prior to Market Close and After Master File Update**

Prior to the Market Close of the DAM, after the Master File data has been updated, all Bids must be re-validated using the same process as described in Section 30.7.3.1 to produce either valid Bids or modified Bids. Throughout this process the Scheduling Coordinator shall have the ability to view the Bid and may choose to re-submit (at which point the Bid would undergo the Bid validation process described in this Section 30.7 again), cancel, or modify the Bid. Valid or modified Bids that are not re-submitted or cancelled become Clean Bids after the Market Close of the DAM. Modified Bids for Resource Adequacy Resources will reflect the full amount of the resource's Resource Adequacy Capacity.

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### **30.7.12 Validation of Bids in Excess of Soft Energy Bid Cap, Hard Energy Bid Cap, or Minimum Load Cost Hard Cap**

#### **30.7.12.1 Generally**

Except as otherwise stated in this Section 30.7.12, the validation rules in this Section 30.7.12 apply to all Energy Bids and Minimum Load Bids submitted by Scheduling Coordinators. The provisions of Sections 30.7.12.1 through 30.7.12.4 do not apply to Virtual Bids and Energy Bids submitted for Non-Resource-Specific System Resources; the provisions of Section 30.7.12.5 apply to Virtual Bids and Energy Bids submitted for Non-Resource-Specific System Resources. The CAISO will allow Bids for Non-Resource-Specific System Resources that are Resource Adequacy Resources and that exceed the Soft Energy Bid

Cap subject to the Bid price screens described in Section 30.7.12.5.1. The CAISO will allow Virtual Bids, Export Bids, Demand Bids, and Bids for Non-Resource-Specific System Resources that are not Resource Adequacy Resources and that exceed the Soft Energy Bid Cap subject to the rules specified in Section 30.7.12.5.2. The CAISO will reject Virtual Bids, Export Bids, Demand Bids, Bids for Non-Resource-Specific System Resources that exceed the Hard Energy Bid Cap.

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### **30.11.5 Application of Revised Reference Level**

For the Day-Ahead Market, the Revised Default Commitment Cost Bids and Revised Default Energy Bid will apply to the applicable Trading Day of the Day-Ahead Market. For the Real-Time Market, the Revised Default Commitment Cost Bids and Revised Default Energy Bid will apply from the Real-Time Market Trading Hour for which it is practicable for the CAISO to apply the change until the last Trading Hour of the Trading Day for which the Reference Level Change Request was specified. The CAISO will not update the applicable Reasonableness Threshold when it accepts an automated Reference Level Change Request. The CAISO will update a resource's applicable Reasonableness Threshold to equal the resource's Reference Level when it accepts a manual Reference Level Change Request. The Scheduling Coordinator may submit an application for after-CAISO Market Process adjustments pursuant to Section 30.12 for any costs not verified through the automated Reference Level Change Request process or that were rejected through the manual Reference Level Change Request process. A Multi-Stage Generating Resource cannot submit a Reference Level Change Request for its Proxy Transition Costs but the CAISO will recalculate the Proxy Transition Costs if a Scheduling Coordinator revises the Start-Up Bids that initially were the basis of calculating the Proxy Transition Cost.

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## **Section 31**

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### **31.2 Day-Ahead MPM Process**

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM process, which is a single market run that occurs prior to the IFM Market Clearing run. The Day-Ahead MPM process determines which Bids need to be mitigated to the applicable Default Energy Bids in the IFM pursuant to Section 31.2.3. For Maximum Net Dependable Capacity of Legacy RMR Units, Bids will be mitigated to the RMR Proxy Bids pursuant to Section 31.2.3. The Day-Ahead MPM process optimizes resources to meet Demand reflected in Demand Bids, including Export Bids and Virtual Demand Bids, and to procure one hundred (100) percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. Virtual Bids and Bids from Demand Response Resources, Participating Load, Hybrid Resources, and Non-Generator Resources are considered in the MPM process, but are not subject to Bid mitigation. Bids from Participating Load resources that are not subject to Bid mitigation will also be considered in the MPM process. The mitigated or unmitigated Bids and RMR Proxy Bids identified in the MPM process for all resources that cleared in the MPM are then passed to the IFM. The CAISO performs the MPM process for the DAM for the twenty-four (24) hours of the targeted Trading Day.

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### **31.5.3 RUC Procurement Target**

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#### **31.5.3.2.1 Use of RUC Zones**

The CAISO shall adjust the CAISO Forecast of CAISO Demand by RUC Zone for the conditions described in Sections 31.5.3.1.2 through 31.5.3.1.6. If any adjustments are made throughout the affected RUC Zone, such adjustments will be made consistent with the subset of system LDFs for the Nodes that define the RUC Zone(s). The CAISO will adjust the CAISO Forecast of CAISO Demand of each affected

RUC Zone, preserving the LDFs within each RUC Zone, but the relative weighting of the LDFs across the system will deviate from the original LDFs. RUC costs will be pooled together to establish the RUC Compensation Costs. As described in Section 11.6.1, Settlement of RUC Compensation Costs will not be on a RUC Zone basis.

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## **Section 34**

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### **34.1.5 Mitigating Bids in the RTM**

#### **34.1.5.1 Generally**

After the Market Close of the RTM, after the CAISO has validated the Bids pursuant to Section 30.7 and Section 34.1.4, and prior to conducting any other RTM processes, the CAISO conducts a MPM process. The results are used in the RTM optimization processes. Bids on behalf of Demand Response Resources, Participating Load, Hybrid Resources, and Non-Generator Resources are considered in the MPM process but are not subject to Bid mitigation.

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#### **34.1.6.2 Eligible Intermittent Resources using the CAISO Forecast**

Eligible Intermittent Resources that have elected to use the CAISO forecast as specified in Section 4.8.2.1.2 are not required to submit a forecast for the binding interval by 37.5 minutes prior to flow. For Participating Intermittent Resources for which Scheduling Coordinators have elected to use the output forecast provided by the CAISO and have selected such a flag in their Master File, the CAISO will use the MWh forecast data the CAISO produces for such a resource at 37.5 minutes prior to the applicable FMM as follows: (a) as the MWh amounts input to be cleared for that resource in the FMM if only a Self-Schedule is submitted, or (b) as the upper economic limit used for that resource in the FMM if an

Economic Bid with or without a Self-Schedule is submitted. Dispatch instructions may also be affected by transmission and resource operational constraints and utilization of updated forecasts. The forecast used by the CAISO will be in fifteen-minute granularity. Scheduling Coordinators representing Participating Intermittent Resources whose output is designated to satisfy a Resource Adequacy requirement must submit Variable Energy Resource Self-Schedules in the RTM in accordance with the output forecast provided by the CAISO, or an Economic Bid.

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### **34.3.2 Commitment Of Short Start Units**

RTUC produces binding and advisory Start-Up and Shut-Down Dispatch Instructions for Short Start Units that have Start-Up Times that can be committed prior to the end of the relevant time period of the RTUC run as described in Section 34.3.1. A Start-Up Dispatch Instruction is considered binding in any given RTUC run if there would not be sufficient time for a subsequent RTUC run to Start-Up the resource. A Start-Up Instruction is considered advisory if it is not binding, such that the resource could achieve its target Start-Up Time as determined in the current RTUC run in a subsequent RTUC run based on its Start-Up Time. A Shut-Down Instruction is considered binding if the resource could achieve the target Shut-Down Time as determined in the current RTUC run in a subsequent RTUC run. A Shut-Down Dispatch Instruction is considered advisory if the resource Shut-Down Instruction is not binding such that the resource could achieve its target Shut-Down time as determined in the current RTUC run in a subsequent RTUC run. A binding Dispatch Instruction that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. An advisory Dispatch Instruction changing the Commitment Status of a resource may be modified by the CAISO Operator to a binding Dispatch Instruction and communicated in accordance with Section 6.3 after review and acceptance by the CAISO Operator. For Multi-Stage Generating Resources the CAISO will also issue binding Transition Instructions when the Multi-Stage Generating Resource must change from one MSG Configuration to another. A Transition Instruction is considered binding in any given RTUC run if the Transition Time for the Multi-Stage Generating Resource is such that there would not be sufficient time for a subsequent RTUC run to transition the resource.



\* \* \* \* \*

### **34.5.1 Real-Time Economic Dispatch**

RTED mode of operation for RTD normally runs every five (5) minutes starting at approximately 7.5 minutes prior to the start of the next Dispatch Interval and produces binding Dispatch Instructions for Energy for the next Dispatch Interval and advisory Dispatch Instructions for multiple future Dispatch Intervals through at least the next Trading Hour. After being reviewed by the CAISO Operator, only binding Dispatch Instructions are communicated for the next Dispatch Interval in accordance with Section 6.3. RTED will produce a Dispatch Interval LMP for each PNode for the Dispatch Interval associated with the binding Dispatch Instructions. The RTED Dispatch target is the middle of the interval between five (5) minutes boundary points. For Variable Energy Resources that forecast with 5 minute granularity, the CAISO will use the 5-minute forecast available prior to the start of the RTD optimization as an input into the optimization to determine the instructed Energy of the resource. RTD will be based on the 5-minute forecast value, subject to transmission and resource operational constraints, as the instructed Energy for the binding RTD interval provided that the Variable Energy Resource is optimized through the RTED.

\* \* \* \* \*

### **34.7 General Dispatch Principles**

The CAISO shall conduct all Dispatch activities consistent with the following principles:

- (1) The CAISO shall issue AGC instructions electronically as often as every four (4) seconds from its Energy Management System (EMS) to resources providing Regulation and on Automatic Generation Control to meet NERC and WECC performance requirements;

\* \* \* \* \*

- (13) The CAISO may make Reliability Demand Response Resources eligible for Dispatch in accordance with applicable Operating Procedure.

\* \* \* \* \*

## **Section 36**

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### **36.4.2 Simultaneous Feasibility**

The annual and monthly CRR Allocation processes release CRRs to fulfill CRR nominations as fully as possible subject to a Simultaneous Feasibility Test. To the extent that nominations are not simultaneously feasible, the nominations are reduced in accordance with the CRR Allocation optimization formulation until simultaneous feasibility is achieved. The CRR Allocation optimization formulation, detailed in the Business Practice Manuals, utilizes a weighted least squares objective function that applies pro-rated reductions in flows on a binding constraint based on squares of the Power Transfer Distribution Factor of each CRR nomination for the binding constraint. In addition to the adjustments in Section 36.4.1.3, the Simultaneous Feasibility Test for each CRR Allocation considers:

- (a) CRRs representing ETCs, Converted Rights and any TOR capacity that was not captured in the adjustments described in Section 36.4, which the CAISO deems necessary to prevent the Congestion Settlement of ETCs, Converted Rights, and TORs from causing revenue inadequacy of allocated and auctioned CRRs;
- (b) In the case of the monthly CRR Allocation, the CRRs already released for that month in the annual CRR Allocation and Auction; and,
- (c) The CRRs allocated in previous CRR Allocation tiers as described in Sections 36.8.3.1 through 36.8.3.6.

The CAISO will be responsible for submitting CRR nominations associated with ETC and Converted Rights Self-Schedules. These nominations will be Point-to-Point CRR nominations.

\* \* \* \* \*

### **36.8.2 Load Eligible For CRRs And Eligible CRR Sinks**

Any entity that wishes to participate in the CRR Allocation process must provide information that demonstrates that it has an obligation to serve load. An LSE's eligibility for allocation of CRRs is measured by the quantity of Load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Sections 36.8.2.1 and 36.8.2.2. An OBAALSE's eligibility for allocation of CRRs is also measured by the quantity of load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Section 36.9.3. For LSEs, the information necessary may include, but is not limited to, Settlement Quality Meter Data or relevant documents filed with the California Energy Commission. For OBAALSEs, the necessary information may include, but is not limited to, historical tagged Real-Time Interchange Export Schedules and historical load data reflecting the load they serve that is exposed to Congestion Charges for the use of the CAISO Controlled Grid. In addition, each such OBAALSE shall support its data submission with a written sworn affidavit by an executive authorized to represent the OBAALSE attesting to the accuracy of the data, and the CAISO will have the right to audit the raw data and calculations used to develop the submitted data set. An LSE serving internal Load is eligible for CRRs up to its Seasonal CRR Eligible Quantity or Monthly CRR Eligible Quantity, which is derived from its Seasonal CRR Load Metric or Monthly CRR Load Metric as described in Sections 36.8.2.1 and 36.8.2.2, respectively. Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities for Qualified OBAALSEs are determined as provided in Section 36.9.3. These quantities are calculated for each LSE or Qualified OBAALSE separately for each combination of season and time of use period for the annual CRR Allocation process, and for each time of use period for each monthly CRR Allocation process, and for each CRR Sink at which the eligible LSE serves Load or the Qualified OBAALSE exports Energy from the CAISO Balancing Authority Area. MSS eligibility for CRRs will account for net or gross MSS Settlement in accordance with Section 4.9.13.1. If the MSS Operator elects net Settlement, LSEs for such MSS Load shall submit CRR Sink nominations at the MSS LAP. If the MSS elects for gross Settlement, LSEs for such MSS Load shall submit CRRs Sink nominations at the applicable Default LAP. Load that is Pumped-Storage Hydro Units but is not

Participating Load may be scheduled and settled at a PNode or Custom Load Aggregation Point and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode or Custom Load Aggregation Point. Load that is a Participating Load that is also aggregated is scheduled and settled at a Custom Load Aggregation Point that is customized specifically for such Load and, therefore, LSEs for such Participating Load shall submit CRR Sink nominations at the Custom Load Aggregation Point. Load that is Participating Load is scheduled and settled at an individual PNode, and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode. Load that is non-Participating Load, is not Pumped-Storage Hydro Units, and is not Load associated with ETCs, TORs, or MSS Operators that elects net Settlement, is scheduled and settled at the Default LAP. Therefore, LSEs for such Load shall submit CRR Sink nominations at their assigned Default LAP or Default LAPs if the Load they serve is located in more than one Default LAP. In tier 2 and tier 3 of the annual process and tier 1 and tier 2 of the monthly process, such LSEs may also submit CRR Sink nominations at a Sub-LAP of their assigned Default LAP. The CAISO will make available a list of allowable CRR Sources and Sinks to be used in the allocation at approximately the same time as the CAISO releases each CRR FNM. The allowable CRR Sinks will be consistent with the applicable CRR FNM. In the event that unforeseen changes to network conditions arise after the thirty-day release of the list of allowable CRR Sinks and warrant revisions to that list, the CAISO will provide updates to the list prior to the closing of nominations for the CRR Allocation.

\* \* \* \* \*

### **36.8.3 CRR Allocation Process**

\* \* \* \* \*

#### **36.8.3.1.3.1 Tier LT for LSEs**

The quantity of Seasonal CRRs that an LSE can nominate as Long Term CRRs is limited to twenty percent (20%) of the LSE's Adjusted Load Metric, except that an LSE that can demonstrate that more

than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources is able to submit nominations for a greater amount as provided in this section. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources, the amount of Long Term CRRs that it may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric. If an LSE's combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources is greater than twenty percent (20%) of its Adjusted Load Metric and the LSE nominates more than twenty percent (20%) of its Adjusted Load Metric as Long Term CRRs, then the CRR Sources for all of the LSE's Long Term CRR nominations must be sources associated with its demonstrated long-term procurement arrangements of ten (10) years or greater or its owned generation resources. Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub.

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### **Section 37**

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#### **37.5.2 Accurate and Timely Actual SQMD**

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### **37.8.10 Review Of Determination**

A Scheduling Coordinator that receives a Sanction, or a Market Participant whose conduct gave rise to the Sanction, may obtain immediate review of the CAISO's determination by directly appealing to FERC, in accordance with FERC's rules and procedures. In such case, the applicable Scheduling Coordinator shall also dispute the Settlement Statement containing the financial penalty, in accordance with Section 11. The Settlement Statement dispute and appeal to FERC must be made in accordance with the timeline for raising disputes specified in Section 11.29.8. The penalty will be tolled until FERC renders its decision on the appeal. The disposition by FERC of such appeal shall be final, and no separate dispute of such Sanction may be initiated under Section 13. For the purpose of applying the time limitations set forth in Section 37.10.1, a Sanction will be considered assessed when it is included on a Settlement Statement, whether or not the CAISO accepts a Scheduling Coordinator's dispute of such Settlement Statement pending resolution of an appeal to FERC in accordance with this section or Section 37.9.3.3.

\* \* \* \* \*

### **37.9.3 Settlement**

#### **37.9.3.1 Settlement Statements**

The CAISO will administer any penalties issued under this Section 37 through Settlement Statements, as relevant, issued to the responsible Scheduling Coordinator by the CAISO.

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## **Section 39**

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### **39.7.3 Default Competitive Path Designations**

\* \* \* \* \*

#### **39.7.3.1 Methodology for Determining Day-Ahead Default Competitive Path Designations for Transmission Constraints Other Than Path 15 and Path 26 Transmission Constraints**

The CAISO will designate a Transmission Constraint other than the Path 15 Transmission Constraint or the Path 26 Transmission Constraint as competitive for purposes of determining default competitive path designations for the Day-Ahead Market only if both of the following conditions are met:

- (1) Congestion occurred on the Transmission Constraint in ten (10) or more hours of the days for which the Transmission Constraint was tested for competitiveness pursuant to Section 39.7.2; and
- (2) the Transmission Constraint was deemed competitive pursuant to Section 39.7.2 in seventy-five (75) percent or more of the instances in which the Transmission Constraint was binding when tested. ¶

These calculations will be made utilizing data from the Day-Ahead Market for the most recent sixty (60) Trading Days for which data is available. The CAISO will designate a Transmission Constraint other than the Path 15 Transmission Constraint or the Path 26 Transmission Constraint as non-competitive if the CAISO lacks sufficient data to determine whether the occurrences set forth in Sections 39.7.3.1(1) and 39.7.3.1(2) took place on the Transmission Constraint over the sixty (60) Trading Day period.

\* \* \* \* \*

## **Section 40**

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#### **40.2.2.1 Reserve Margin**

- (a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the Demand Forecasts developed in accordance with Section 40.2.2.3.
- (b) For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section 40.2.1(b), the Reserve Margin for each month shall be no less than fifteen percent (15%) of the LSE's peak hourly Demand for the applicable month, as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.

\* \* \* \* \*

#### **40.4.6.2.2.3 Other Import Capability Information Postings**

The CAISO will post to the CAISO Website on a monthly basis in accordance with the schedule set forth in the Business Practice Manual, for each Intertie, the holder and that holder's quantity in MW of import capability assigned on the particular Intertie as of the reporting date.

The CAISO will also post to the CAISO Website following submission of the annual Resource Adequacy Plans under Sections 40.2.1, 40.2.2.4, 40.2.3.4, and 40.2.4, for each Intertie, by a "yes" or "no" designation, whether each holder of import capability assigned on the particular Intertie has fully included the assigned import capability in the holder's annual Resource Adequacy Plans.

\* \* \* \* \*

#### **40.6.6 Requirement for Partial Resource Adequacy Resources**

Only that output of a Resource Adequacy Resource that is designated by a Scheduling Coordinator as



Resource Adequacy Capacity in its monthly or annual Supply Plan shall have an availability obligation to the CAISO. Exports being supported by non-Resource Adequacy Capacity from a Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity as follows: If a Resource Adequacy Resource goes on a Forced Outage, until the Scheduling Coordinator provides the information requested under section 9.3.10.3.2, the CAISO shall determine if the Scheduling Coordinator indicated under section 30.5.1 (aa) that capacity from its Resource Adequacy Resource is backing a Self-Schedule of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity. If the Scheduling Coordinator has indicated capacity from its Resource Adequacy Resource is backing a Self-Schedule of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity, the CAISO will allocate the derate pro rata between the RA Capacity and the remainder of the resource's capacity up to its PMax.

\* \* \* \* \*

#### **40.6.8.1.4 Negotiated Price Option**

Under the negotiated price option, a Scheduling Coordinator shall submit a proposed Generated Bid along with supporting information and documentation as described in a Business Practice Manual. Within ten (10) Business Days of receipt, the CAISO will provide a written response. If the CAISO accepts the proposed Generated Bid, it will become effective within three (3) Business Days from the date of acceptance by the CAISO and remain in effect until: (1) the Generated Bid is modified by FERC; (2) the Generated Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Generated Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.

If the CAISO does not accept the proposed Generated Bid, the CAISO and the Scheduling Coordinator shall enter a period of good faith negotiations that terminates sixty (60) days following the date of submission of a proposed Generated Bid by a Scheduling Coordinator. If at any time during this period, the CAISO and the Scheduling Coordinator agree upon the Generated Bid, it will become effective within three (3) Business Days of the date of agreement and remain in effect until: (1) the Generated Bid

is modified by FERC; (2) the Generated Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Generated Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.

If by the end of the sixty (60) day period the CAISO and the Scheduling Coordinator fail to agree on the Generated Bid to be used under the negotiated price option, the Scheduling Coordinator has the right to file a proposed Generated Bid with FERC pursuant to Section 205 of the Federal Power Act.

During the sixty (60) day period following the submission of a proposed negotiated Generated Bid by a Scheduling Coordinator, and pending FERC's acceptance in cases where the CAISO fails to agree on the Generated Bid for use under the negotiated price option and the Scheduling Coordinator filed a proposed Generated Bid with FERC pursuant to Section 205 of the Federal Power Act, the Scheduling Coordinator has the option of electing to use any of the other options available pursuant to this Section.

The CAISO shall make an informational filing with FERC of any Generated Bids negotiated pursuant to this Section no later than seven (7) days after the end of the month in which the Generated Bids were established.

\* \* \* \* \*

#### **40.9.2 Exemptions**

- (a) **Capacity Exempt from RAAIM - All Provisions.** The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 –
- (1) Resources with a PMax less than 1.0 MW;
  - (2) Non-specified resources that provide Resource Adequacy Capacity under contracts for Energy delivered within the CAISO Balancing Authority Area;
  - (3) Participating Load that is also Pumping Load; and
  - (4) Legacy RMR Units.
- (b) **Capacity Exempt from RAAIM - Local/System.**
- (1) The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 applicable to local and system

Resource Adequacy Capacity –

- (A) Variable Energy Resources;
- (B) Combined Heat and Power Resources;
- (C) Run-of-River Resources; and
- (D) Hybrid Resources.

(2) The capacity of a resource with a Load-following MSS as its Scheduling Coordinator that is designated on a Load-following MSS's monthly Resource Adequacy Plan is exempt from the RAAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity, to the extent that the resource's capacity is also designated as Resource Adequacy Capacity on the monthly Supply Plan of that Load-following MSS or another Load-following MSS.

(3) Resources with Existing QF Contracts or Amended QF Contracts that are Resource Adequacy Resources are exempt from the RAAIM provisions in Section 40.9 applicable to local and system capacity –

- (A) if the QF resource previously provided Resource Adequacy Capacity pursuant to an Existing QF Contract that was executed prior to August 22, 2010 and remained in effect pursuant to California Public Utilities Commission Decision 07-09-040 that extended the term of expiring contracts until such time as the new contracts resulting from that decision are available; or
- (B) until the QF Resource's Existing QF Contract or Amended QF Contract terminates or if requested by the Scheduling Coordinator for the resource, whichever is earlier.

(c) **Capacity Exempt from RAAIM - Flexible Capacity.**

(1) The capacity of Use-Limited Resources in a combination under Section 40.10.3.2(b), 40.10.3.3(b) or 40.10.3.4(b) is exempt from the RAAIM provisions in Section 40.9 applicable to Flexible RA Capacity to the extent that the resources are committed to provide Flexible RA Capacity as a combination on their

respective monthly Supply Plans.

- (2) The Capacity of a resource with a Load-following MSS as its Scheduling Coordinator that is designated on a Load-following MSS's monthly Flexible RA Plan is exempt from the RAIM provisions in Section 40.10 applicable to Flexible RA Capacity, to the extent that the resource's capacity is also designated as Flexible RA Capacity on the monthly Supply Plan of that Load-following MSS or another Load-following MSS.

\* \* \* \* \*

#### **Section 41**

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#### **41.9 Allocation of Reliability Must-Run Contract Costs**

As specified in Section 11.13.7, the CAISO will allocate Reliability Must-Run costs not recovered through market revenues to the Scheduling Coordinators for Load-Serving Entities that serve load in the TAC Area(s) in which the need for the RMR Contract arose. These amounts paid will be allocated to each Scheduling Coordinator based on the pro-rata share of each Load-Serving Entity's TAC Area Metered Demand to total metered Demand recorded in the CAISO settlement system for the actual days of any settlement month period for which the RMR Contract was in effect.

\* \* \* \* \*

#### **Appendix A**

\* \* \* \* \*

- [Not Used]

\* \* \* \* \*

**- Settlement Statement**

Any one of the following: Initial Settlement Statement T+3B, Initial Settlement Statement T+9B, Recalculation Settlement Statement T+12B, Recalculation Settlement Statement T+55B, Recalculation Settlement Statement T+70B, Recalculation Settlement Statement T+9M, Recalculation Settlement Statement T+11M, Recalculation Settlement Statement T+18M, Recalculation Settlement Statement T+21M, Recalculation Settlement Statement T+24M, Recalculation Settlement Statement T+33M, Recalculation Settlement Statement T+36M, Unscheduled Reissue Recalculation Settlement Statement, or any other Recalculation Settlement Statement authorized by the CAISO Governing Board.

\* \* \* \* \*

**Appendix B.10**

\* \* \* \* \*

**4.3 System Emergency Response.** The SUDC will participate in Load Shedding by reducing Load on a voluntary basis when the CAISO declares an emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment. The SUDC will use any available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC will not be called separately to manually shed Load. Load restoration of any voluntary Load reduction may not commence until such time as the CAISO declares that a System Emergency no longer exists. The responsibilities of the Parties to direct and to accept direction for Load reduction or other emergency plans are stated in Sections 4.11.4 and 4.11.5 of the CAISO Tariff, and the CAISO Operating Procedures identified in Schedule 9 and CAISO Specifications identified in Schedule 6.

\* \* \* \* \*

**Appendix F**

## Schedule 1

### Grid Management Charge

\* \* \* \* \*

#### Part C - Costs Recovered through the GMC

\* \* \* \* \*

- (4) CAISO Operating Cost Reserve adjustment is the sum of:
- (a) The actual excess or shortfall in collections of the prior year's rates compared to the budgeted amounts;
  - (b) The actual excess or shortfall in CAISO Operating Costs, CAISO Other Costs and Revenues and CAISO Financing Costs for the prior year compared to the budgeted amounts except any excess in the prior year budgeted amount for self-insured healthcare costs compared to actual self-insured healthcare costs;
  - (c) The estimate of current year collections and costs compared to budgeted amounts for the current year; and
  - (d) The change in CAISO Operating Cost Reserve consistent with the level of the CAISO Operating Cost Reserve requirement.

\* \* \* \* \*

## Schedule 4

### Eligible Intermittent Resources Forecast Fee

A charge up to \$.10 per MWh shall be assessed on the metered Energy from (a) Eligible Intermittent Resources; (b) Variable Energy Resources that are EIM Participating Resources; and (c) the variable component of Hybrid Resources as a Forecast Fee, provided that Generating Units smaller than 10 MW that are not Participating Intermittent Resources and that sell power pursuant to a power purchase agreement entered into pursuant to PURPA prior to entering into a PGA or Net Scheduled PGA shall be exempt from the Forecast Fee.

The rate of the Forecast Fee shall be determined so as to recover the projected annual costs related to developing Energy forecasting systems, generating forecasts, validating forecasts, and monitoring forecast performance, that are incurred by the CAISO as a direct result of participation by Eligible Intermittent Resources, Variable Energy Resources that are EIM Participating Resources, and the variable component of Hybrid Resources in CAISO Markets, divided by their projected annual Energy production.

The initial Forecast Fee, and all subsequent changes as may be necessary from time to time to recover costs incurred by the CAISO for the forecasting conducted on the behalf of Eligible Intermittent Resources, Variable Energy Resources that are EIM Participating Resources, and the variable component of Hybrid Resources pursuant to the foregoing rate formula, shall be set forth in a Business Practice Manual.

\* \* \* \* \*

## Appendix Q

### **Eligible Intermittent Resources Protocol (EIRP)**

\* \* \* \* \*

## **2 REQUIREMENTS FOR ELIGIBLE INTERMITTENT RESOURCES, PARTICIPATING INTERMITTENT RESOURCES, AND HYBRID RESOURCES WITH VARIABLE COMPONENT**

\* \* \* \* \*

### **2.2.2 Composition of a Participating Intermittent Resource**

The CAISO shall develop criteria to determine whether one or more Eligible Intermittent Resources may be included within a Participating Intermittent Resource. Such criteria shall include:

- (a) A Participating Intermittent Resource must be at least one-half (.5) rated capacity.

\* \* \* \* \*

## **3 COMMUNICATIONS**

### **3.1 Forecast Data – Wind**

The CAISO may require various data relevant to forecasting Energy from an Eligible Intermittent Resource or Hybrid Resource with a variable component to be telemetered to the CAISO, including appropriate operational data, meteorological data or other data reasonably necessary to forecast Energy.

\* \* \* \* \*

#### **3.1.6 Shape-File Submission**

Each wind Eligible Intermittent Resource and Hybrid Resource with a wind generation component must submit a shape-file that illustrates, at a minimum, the location of the meteorological station(s), resource project corner, and all individual wind turbines comprising the resource. The shape-file must be submitted in .shp, .dbf, or other file format upon which the CAISO and resource mutually agree.

### **3.2 Forecast Data - Solar**

#### **3.2.1 Solar Generation Meteorological Station Requirements**

Each solar Eligible Intermittent Resource and Hybrid Resource with a solar generation component must install and maintain equipment required by the CAISO to support accurate power generation forecasting and the communication of such forecast, meteorological, and other required data to the CAISO consistent with the timeframes specified in this Eligible Intermittent Resource Protocol.

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### **Appendix DD**

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## **Section 6 Initial Activities and Phase I of the Interconnection Study Process for Queue Clusters**

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### **6.2. Scope and Purpose of Phase I Interconnection Study**

The Phase I Interconnection Study shall:

- (i) evaluate the impact of all Interconnection Requests received during the Cluster Application Window for a particular year on the CAISO Controlled Grid;
- (ii) preliminarily identify all LDNUs, LOPNUs, and RNUs needed to address the impacts on the CAISO Controlled Grid of the Interconnection Requests, as Assigned Network Upgrades or Conditionally Assigned Network Upgrades;
- (iii) preliminarily identify for each Interconnection Request required Interconnection Facilities;
- (iv) assess the Point of Interconnection selected by each Interconnection Customer and potential alternatives to evaluate potential efficiencies in overall transmission upgrade costs;
- (v) establish the Current Cost Responsibility Maximum Cost Responsibility, and Maximum Cost Exposure for each Interconnection Request, until the issuance of the Phase II Interconnection Study report;
- (vi) provide a good faith estimate of the cost of Interconnection Facilities for each Interconnection Request;
- (vii) provide a cost estimate of ADNUs and AOPNUs for each Generating Facility in a Queue Cluster Group Study;



- (viii) identify controls required for each Interconnection Request where the Interconnection Customer requested Interconnection Service Capacity lower than the Generating Facility Capacity;
- (ix) identify any Precursor Network Upgrades; and
- (x) identify RNUs as GRNUs or IRNUs.

The Phase I Interconnection Study will consist of a short circuit analysis, a stability analysis to the extent the CAISO and applicable Participating TO(s) reasonably expect transient or voltage stability concerns, a power flow analysis, including off-peak analysis, an On-Peak Deliverability Assessment, and an Off-Peak Deliverability Assessment for the purpose of identifying LDNUs and LOPNUs and estimating the cost of ADNUs and AOPNUs, as applicable.

\* \* \* \* \*

### **6.3.2.2 Off-Peak Deliverability Assessment.**

The CAISO, in coordination with the applicable Participating TO(s), shall perform an Off-Peak Deliverability Assessment for Interconnection Customers selecting Off-Peak Deliverability Status. The Off-Peak Deliverability Assessment will identify transmission upgrades in addition to those Delivery Network Upgrades identified in the On-Peak Deliverability Assessment, if any, for a Group Study or individual Phase I Interconnection Study that includes one or more Location Constrained Resource Interconnection Generators (LCRIG), where the fuel source or source of energy for the LCRIG substantially occurs during off-peak conditions. Interconnection Customers that (i) are not LCRIGs whose fuel source or source of energy substantially occurs off-peak, and (ii) have Full or Partial Capacity Deliverability Status, will receive Off-Peak Deliverability Status without triggering Off-Peak Network Upgrades. Energy Only Interconnection Customers that are not LCRIGs whose fuel source or source of energy substantially occurs off-peak will be Off-Peak Energy Only. LCRIGs whose fuel source or source of energy substantially occurs off-peak will receive Off-Peak Deliverability Status based upon the Off-Peak Deliverability Assessment, regardless of their On-Peak Deliverability Status.

The transmission upgrades identified under this Section shall comprise those needed for the expected output of each proposed new LCRIG or the amount of megawatt increase in the generating capacity of each existing LCRIG as listed by the Interconnection Customer in its Interconnection Request, whether studied individually or as a Group Study, to be deliverable to the aggregate of Load on the CAISO Controlled Grid under the Generation dispatch conditions studied without excessive curtailment. The methodology for the Off-Peak Deliverability Assessment will be published on the CAISO Website or, if applicable, included in a CAISO Business Practice Manual.

The CAISO will perform the Off-Peak Deliverability Assessment to identify Off-Peak Network Upgrades required for Generating Facilities to achieve Off-Peak Deliverability Status, and any such upgrades identified in the Off-Peak Deliverability Assessment as part of the Phase I Interconnection Study shall be estimated in accordance with Section 6.4. The Off-Peak Deliverability Assessment does not convey any right to deliver electricity to any specific customer or Delivery Point, nor guarantee any level of deliverability, or transmission capacity, or avoided curtailment.

The estimated costs of Local Off-Peak Network Upgrades identified in the Off-Peak Deliverability Assessment will be assigned or conditionally assigned to Interconnection Requests selecting Off-

Peak Deliverability Status based on the flow impact of each such Generating Facility on the Off-Peak Network Upgrades as determined by the Generation distribution factor methodology set forth in the Off-Peak Deliverability Assessment methodology.

The estimated costs of Area Off-Peak Network Upgrades are for information only and not assigned to any Interconnection Requests.

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## Appendix FF

### **Article 1. Scope and Limitations of Agreement**

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#### 1.8 Reactive Power and Primary Frequency Response

\* \* \* \* \*

1.8.3 **Primary Frequency Response.** Interconnection Customer shall ensure the primary frequency response capability of its Small Generating Facility by installing, maintaining, and operating a functioning governor or equivalent controls. The term “functioning governor or equivalent controls” as used herein shall mean the required hardware and/or software that provides frequency responsive real power control with the ability to sense changes in system frequency and autonomously adjust the Small Generating Facility’s real power output in accordance with the droop and deadband parameters and in the direction needed to correct frequency deviations. Interconnection Customer is required to install a governor or equivalent controls with the capability of operating: (1) with a maximum 5 percent droop and  $\pm 0.036$  Hz deadband; or (2) in accordance with the relevant droop, deadband, and timely and sustained response settings from Applicable Reliability Standards providing for equivalent or more stringent parameters. The droop characteristic shall be: (1) based on the nameplate capacity of the Small Generating Facility, and shall be linear in the range of frequencies between 59 to 61 Hz that are outside of the deadband parameter; or (2) based on Applicable Reliability Standards providing for an equivalent or more stringent parameter. The deadband parameter shall be: the range of frequencies above and below nominal (60 Hz) in which the governor or equivalent controls is not expected to adjust the Small Generating Facility’s real power output in response to frequency deviations. The deadband shall be implemented: (1) without a step to the droop curve, that is, once the frequency deviation exceeds the deadband parameter, the expected change in the Small Generating Facility’s real power output in response to frequency deviations shall start from zero and then increase (for under-frequency deviations) or decrease (for over-frequency deviations) linearly in proportion to the magnitude of the frequency deviation; or (2) in accordance with

Applicable Reliability Standards providing for an equivalent or more stringent parameter. Interconnection Customer shall notify the CAISO that the primary frequency response capability of the Small Generating Facility has been tested and confirmed during commissioning. Once Interconnection Customer has synchronized the Small Generating Facility with the CAISO Controlled Grid, Interconnection Customer shall operate the Small Generating Facility consistent with the provisions specified in Sections 1.8.3.1 and 1.8.3.2 of this SGIA. The primary frequency response requirements contained herein shall apply to both synchronous and non-synchronous Small Generating Facilities.

\* \* \* \* \*

## **Attachment 1**

### **Glossary of Terms**

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**Network Upgrades** - Additions, modifications, and upgrades to the Participating TO's Transmission System required at or beyond the point at which the Small Generating Facility interconnects with the CAISO Controlled Grid to accommodate the interconnection of the Small Generating Facility with the CAISO Controlled Grid. Network Upgrades do not include Distribution Upgrades.

**Operational Control** - The rights of the CAISO under a Transmission Control Agreement and the CAISO Tariff to direct the parties to the Transmission Control Agreement how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting applicable reliability criteria.

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**Attachment C – Marked Tariff**  
**Tariff Clarifications Amendment Filing**  
**California Independent System Operator Corporation**  
**December 12, 2022**

## Section 4

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### **4.5.1.1.6 Other Scheduling Coordinator Application Requirements~~[Not Used]~~**

\* \* \* \* \*

### **4.5.1.3 Additional Scheduling Coordinator ID Code Registration**

A Scheduling Coordinator Applicant is granted one Scheduling Coordinator ID Code (SCID) with its application fee. Requests may be made for additional Scheduling Coordinator ID Codes. The fee for each additional Scheduling Coordinator Identification Code is ~~\$500 per month, or as otherwise~~ specified in Schedule 1 of Appendix F.

\* \* \* \* \*

## **4.8 Relationship Between CAISO and Intermittent Resources**

~~The CAISO shall not accept Bids for an Eligible Intermittent Resource other than through a Scheduling Coordinator. Any Eligible Intermittent Resource that is not a Participating Intermittent Resource, or any Participating Intermittent Resource for which Bids are submitted shall be bid and settled as a Generating Unit for the associated Settlement Periods (except that the Forecast Fee shall apply in such Settlement Periods).~~

\* \* \* \* \*

**4.11.5.1** If the CAISO declares an emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment Stage 1 System Emergency, the SUDC shall use any reasonably available local communication infrastructure to request that its customers curtail their

electricity usage. The SUDC shall not be called separately ~~in Stage 3 System Emergencies~~ to manually shed Load. Load restoration of any voluntary Load reduction will occur once the CAISO declares that a System Emergency no longer exists.

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## **Section 8**

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### **8.2.3.1 Regulation Service**

The CAISO shall maintain sufficient resources immediately responsive to the CAISO's EMS control in order to provide sufficient Regulation service to allow the CAISO Balancing Authority Area to meet NERC and WECC reliability standards and any requirements of the NRC by continuously balancing resources to meet deviations between actual and scheduled Demand and to maintain Interchange Schedules. The quantity of Regulation Down and Regulation Up capacity needed for each Settlement Period of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time shall be determined based on several factors as further described in the applicable Business Practice Manual, including but not limited to historic needs for Regulation Down and Regulation Up capacity as well as forecast operating conditions. ~~by the CAISO as a percentage of the applicable CAISO Forecast of CAISO Demand for the Day-Ahead and Real-Time Markets.~~ In HASP, the CAISO will determine the amount of advisory Regulation from Dynamic System Resources required for each Settlement Period in the next Trading Hour ~~is also determined based on the CAISO Forecast of CAISO Demand.~~ The advisory awards of Regulation from Dynamic System Resources in HASP are not binding and are re-optimized through the FMM and RTD processes in the Real-Time Market. ~~The CAISO's determination is based upon its need to meet the NERC and WECC reliability standards and any requirements of the NRC.~~ The CAISO will take into account the speed and accuracy of regulation resources in its determination of Regulation requirements, including as it qualifies self-provided Regulation. Upon request of a Scheduling Coordinator, the CAISO will share with the Scheduling Coordinator its reasoning and any related data used to make the determination of whether the Scheduling Coordinator's self-provided Regulation capacity meets its

regulation obligation.

The requirement for Regulation Down or Regulation Up needed for each Settlement Period of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time shall each be accompanied by a requirement for Mileage as determined by the CAISO. The CAISO shall determine the Mileage requirements in any Settlement Period based on Regulation capacity requirements as well as the Bid-in Regulation capacity for that Settlement Period. Subject to operator adjustment, the Mileage requirement for either Regulation Up or Regulation Down will reflect the minimum of (a) the product of the respective Regulation capacity requirement and the System Mileage Multiplier; (b) the average Instructed Mileage for the applicable Trading Hour from the prior seven (7) days; or (c) the product of each resource's resource specific Mileage multiplier(s) and its Bid-in Regulation capacity summed for all resources.

The CAISO will publish on OASIS the estimated quantity, or the percentage used to determine the estimated quantity, of Regulation Reserves required for each hour of the Day-Ahead Market and in each fifteen (15) minute period in Real-Time for the Trading Day. The CAISO will publish on OASIS the Mileage requirements for each hour of the Day-Ahead Market and each fifteen (15) minute period in Real-Time for the Trading Day. The CAISO will also publish on OASIS the average Instructed Mileage from the prior seven (7) days for each hour of a Trading Day no later than seven (7) calendar days after the applicable Trading Day.

\* \* \* \* \*

### **8.3.1 Procurement of Ancillary Services**

The CAISO shall operate competitive Day-Ahead and Real-Time Markets to procure Ancillary Services. The Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED) applications used in the Integrated Forward Market (IFM) and the Real-Time Market (RTM) shall calculate optimal resource commitment, Energy, and Ancillary Services Awards and Schedules at least cost to End-Use Customers consistent with maintaining System Reliability. Any Scheduling Coordinator representing resources, System Units, Participating Loads, Proxy Demand Resources or imports of System Resources may submit Bids into the CAISO's Ancillary Services markets provided that it is in



possession of a current certificate for the resources concerned. Regulation Up, Regulation Down, and Operating Reserves necessary to meet CAISO requirements not met by self-provision will be procured by the CAISO as described in this CAISO Tariff. The amount of Ancillary Services procured in the IFM is ~~based on the CAISO Forecast of CAISO Demand and the forecasted intertie schedules in the RTM for the Operating Hour~~ net of (i) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services and (ii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. ~~The amount of additional Ancillary Services procured in the RTM is based on the CAISO Forecast of CAISO Demand, the Day-Ahead Schedules established net interchange, and the forecast of the Intertie Schedules for the Operating Hour in the RTM net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, and (iii) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right.~~ The amount of Ancillary Services procured in the Real-Time Market is ~~based upon the CAISO Forecast of CAISO Demand and the net interchange for the Operating Hour from FMM Schedules~~ net of (i) available awarded Day-Ahead Ancillary Services, (ii) Self-Provided Ancillary Services from resources internal to the CAISO Balancing Authority Area (which includes Pseudo-Ties of Generating Units to the CAISO Balancing Authority Area) and Dynamic System Resources certified to provide Ancillary Services, (iii) additional Operating Reserves procured in the FMM, and (iv) Ancillary Services self-provided pursuant to an ETC, TOR or Converted Right. The CAISO may procure incremental Ancillary Services in the Real-Time Market based in part on a determination during the FMM that any Ancillary Services capacity awarded or self-provided in the Day-Ahead Market is not available as a result of a resource constraint or Transmission Constraints. Resource constraints may include but are not limited to an Outage of a resource or Ramp Rate constraints. Incremental procurement in the Real-Time Market will exclude Ancillary Services Capacity the CAISO has determined is not available.

The CAISO will manage the Energy from both CAISO-procured and Self-Provided Ancillary Services as part of the FMM and Real-Time Dispatch. In the Day-Ahead Market, the CAISO procures one-hundred

(100) percent of its Ancillary Service requirements based on the Day-Ahead Demand Forecast net of Self-Provided Ancillary Services. After the Day-Ahead Market, the CAISO procures additional Ancillary Services needed to meet system requirements from all resources in the Real-Time Market. The amount of Ancillary Services procured in the Real-Time Market is based on the CAISO's requirements for Ancillary Services Forecast of CAISO Demand for the Operating Hour net of Self-Provided Ancillary Services.

Awards of AS in the RTM to Non-Dynamic System Resources are for the entire next Operating Hour. The CAISO procurement of Ancillary Services from all other resources in the Real-Time Market is for a fifteen (15) minute FMM interval. The CAISO's procurement of Ancillary Services from Non-Dynamic System Resources, Dynamic System Resources and internal Generation (which includes Generation from Generating Units that are Pseudo-Ties to the CAISO Balancing Authority Area) in the Real-Time Market is based on the Ancillary Service Bids submitted or generated in the RTM consistent with the requirements in Section 30. The CAISO may also procure Ancillary Services pursuant to the requirements in Section 42.1 and as permitted under the terms and conditions of a Reliability Must-Run Contract.

The CAISO will contract for long-term Voltage Support service with owners of Reliability Must-Run Units under Reliability Must-Run Contracts. These requirements and standards apply to all Ancillary Services whether self-provided or procured by the CAISO.

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#### **8.6.4.2.3 Information To Be Submitted By Scheduling Coordinators For Each Service**

\* \* \* \* \*

#### **8.10.3 Non-Spinning Reserve**

The CAISO may will test the Non-Spinning Reserve capability of a resource by issuing unannounced Dispatch Instructions requiring the resource to ramp to its certified capacity within ten (10) minutes. The CAISO shall measure the response of the resource or Load to determine compliance with requirements.

The Scheduling Coordinator for the resource shall be paid pursuant to Section 11.5.6. For a Multi-Stage Generating Resource the range of Non-Spinning capacity evaluated is the range at the applicable MSG Configuration.

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## **Section 9**

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### **9.3.3 Request Submission and Information**

The Operator or Scheduling Coordinator of facilities that comprise the CAISO Controlled Grid or of a Participating Generator, Participating Intermittent Resource, Generating Unit, System Unit, Physical Scheduling Plant, Proxy Demand Resource, Reliability Demand Response Resource, Non-Generation Resource, Participating Load, or other resource subject to the outage management requirements of Section 9, shall use the ISO's outage management system to --

- (1) Submit all outage requests under Section 9.
- (2) Provide the required information about the outage and work to be performed using the nature of work categories described in the Business Practice Manual.
- (3) For transmission outage requests, additionally provide structured and detailed outage modeling information at the facility level and/or the breaker/switch level. If the work to be performed will require a switch position to change during the outage period, the Operator or Scheduling Coordinator must submit a separate outage request for each configuration.
- (4) For resource outage requests, additionally provide the required information for the resource at the aggregate project or plant level, and also at the individual unit level for a unit de-rate greater than 50 MW, and any limitations on the resource's availability to provide each type of ancillary service for which it is certified.
- (5) Notify the CAISO of temporary changes in physical characteristics specified in the Master

File, including the PMax, Minimum Load, and Ramping capability of the unit, due to changes in their actual physical characteristics. Changes in the physical characteristics related to Minimum Load shall only be for temporary increases in Minimum Load due to ambient temperature, outages of mechanical equipment, or environmental regulations.

- (6) For Outages that involve extending or increasing the scheduled duration of an Maintenance Outage or MW amount of capacity on Maintenance Outage, respectively, submit a new Outage request to cover the extension or increase in the extent of the Outage.

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## **Section 10**

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### **10.2.5 CAISO Authorized Inspectors**

#### **10.2.5.1 Published List of Inspectors**

The CAISO will publish on the CAISO Website, for informational purposes only, a list of the CAISO Authorized Inspectors and details of the procedure for applying to become a CAISO Authorized Inspector.

~~The CAISO will, on request, provide a copy of that list to entities that do not have access to the CAISO Website.~~

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## **Section 11**

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### **11.2.2 Calculation of Hourly RUC Compensation**

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#### **11.2.2.2 Undelivered RUC Capacity**

~~The CAISO will rescind a resource's RUC Availability Payment, or portion thereof, when the resource's total metered output is less than Expected Energy by more than the Tolerance Band and less than the RUC Schedule. For purposes of this calculation, total metered output will not include Energy provided or reduced as a result of AGC signals. For each Settlement Interval in which the total metered output for a Generating Unit, Participating Load, Proxy Demand Resource, System Unit or System Resource is less than Real-Time Expected Energy by more than the Tolerance Band and less than the RUC Schedule, the RUC Award for that Settlement Interval will be rescinded.~~

\* \* \* \* \*

#### **11.2.4.7 Adjustment of CRR Revenue Related to Schedules that Source and Sink in the Same Balancing Authority Area**

The CAISO will adjust the revenue from the CRRs of a CRR Holder where the Scheduling Coordinator representing that CRR Holder has submitted Bids (including Self-Schedules), in violation of Section 30.5.5 and the resulting Schedule(s) impacts the value of the CRRs in the DAM held by that CRR Holder. Such adjustment will occur if the following circumstances are all met:

- (a) A portion of the E-Tag that uses the CAISO Controlled Grid relates to a Schedule in the Day-Ahead Market;
- (b) The scheduled MW on the portion of the E-Tag using the CAISO Controlled Grid has a positive PTDF on a congested transmission element, where that congestion is measured in the direction of the CRR; and
- (c) The CRR Holder would receive payments from CRRs on the congested transmission element.

If such circumstances occur, the CAISO adjusts the CRR revenue in that Settlement Period so that the additional net CRR revenue that otherwise would be earned from the congestion created by the Schedule

that results from the Bids submitted in violation of Section 30.5.5 is not paid to the CRR Holder. Instead, the CAISO will add those funds to the Hourly CRR Congestion Fund for the applicable Transmission Constraint.

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#### 11.5.2.4 [Not ~~U~~used]

\* \* \* \* \*

#### 11.8.2.4 Ramping for IFM Initial Conditions or Self-Schedules

The CAISO shall determine the net IFM Bid Cost surplus or net IFM Bid Cost shortage across all full ramp down periods that start with an initial condition at the start of the IFM or a full ramp period within a 24 hour day-ahead market associated with a Self-Schedule any time within the full ramp period. For such full ramp periods associated with an initial condition or Self-Schedule with a net IFM Bid Cost shortfall, the net IFM Energy Bid Cost shortfall will not be included in IFM Bid Cost calculations. For the full ramp periods with a net IFM Bid Cost surplus, the surplus will be included in IFM Bid Cost calculations. For full other ramp periods not associated with an initial condition or Self-Schedule with IFM Energy Bid Cost shortfall, the shortfall ~~will~~with be included in IFM Bid Cost calculations. The CAISO will identify the Trading Hours scheduled as full ramp up periods as of the first hour where the resource is ramping up at full ramp until the last hour where the resource is ramping up at full ramp. Likewise, a full ramp down period will be identified as of first hour where the resource is ramping down at full ramp until the last hour that the resource is ramping down at full ramp.

\* \* \* \* \*

#### 11.8.4.1.1 RTM Start-Up Cost

For each Settlement Interval of the applicable RTM Commitment Period, the RTM Start-Up Cost shall

consist of the Start-Up Bid Cost of the Bid Cost Recovery Eligible Resource applicable to the Real-Time Market divided by the number of Settlement Intervals in the applicable RTM Commitment Period. For each Settlement Interval, only the RTM Start-Up Cost in a CAISO RTM Commitment Period is eligible for Bid Cost Recovery. The CAISO will determine the RTM Start-Up Cost for a Multi-Stage Generating Resource based on the MSG Configuration committed by the CAISO in the RTM. The following rules shall be applied in sequence and shall qualify the RTM Start-Up Cost in an RTM Commitment Period:

- (a) The RTM Start-Up Cost is zero if there is an RTM Self-Commitment Period within the RTM Commitment Period.

\* \* \* \* \*

- (g) The RTM Start-Up Cost for an RTM Commitment Period shall be qualified if an actual Start-Up occurs earlier than the start of the RTM ~~Market~~ Start-Up, if the relevant Start-Up is still within the same Trading Day and the Bid Cost Recovery Eligible Resource actually stays on until the RTM Start-Up, otherwise the Start-Up Bid Cost is zero for the RTM Commitment Period.

\* \* \* \* \*

#### **11.8.4.1.2 RTM Minimum Load Cost**

The RTM Minimum Load Cost is the Minimum Load Bid Cost of the Bid Cost Recovery Eligible Resource applicable for the Real-Time Market, divided by the number of Settlement Intervals in a Trading Hour. For each Settlement Interval, only the RTM Minimum Load Cost in a CAISO RTM Commitment Period is eligible for Bid Cost Recovery. The RTM Minimum Load Cost for any Settlement Interval is zero if: (1) the Settlement Interval is included in a RTM Self-Commitment Period for the Bid Cost Recovery Eligible Resource; (2) the Bid Cost Recovery Eligible Resource has been manually dispatched under a Legacy RMR Contract or the resource has been flagged as an RMR Dispatch in the Day-Ahead Schedule or the Real-Time Market in that Settlement Interval; (3) for all resources that are not Multi-Stage Generating

Resources, that Settlement Interval is included in an IFM Commitment Period or RUC Commitment Period; or (4) the Bid Cost Recovery Eligible Resource is committed pursuant to Section 34.11.2 for the purpose of performing Ancillary Services testing, pre-commercial operation testing for Generating Units, or PMax testing. A resource's RTM Minimum Load Costs for Bid Cost Recovery purposes are subject to the application of the Real-Time Performance Metric as specified in Section 11.8.4.4. For Multi-Stage Generating Resources, the commitment period is further determined based on application of Section 11.8.1.3. For all Bid Cost Recovery Eligible Resources that the CAISO Shuts Down, either through an Exceptional Dispatch or an Economic Dispatch through the Real-Time Market, from its Day-Ahead Schedule that was also from a CAISO commitment, the RTM Minimum Load Costs will include negative Minimum Load ~~Bid Costs~~~~Bids~~ for Energy between the Minimum Load as registered in the Master File, or if applicable, as modified pursuant to Section 9.3.3, and zero (0) MWhs.

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## **11.8.6 System-Wide IFM, RUC And RTM Bid Cost Uplift Allocation**

### **11.8.6.1 Determination of IFM, RUC and RTM Bid Cost Uplift**

For each Settlement Interval, the CAISO shall determine the IFM, RUC and RTM Bid Cost Uplift for purposes of allocating the IFM, RUC and RTM Bid Cost Uplift as described below. In determining the IFM, RUC and RTM Bid Cost Uplifts below, the Unrecovered Bid Cost Uplift Payments for MSS BCR Eligible Resources in Metered Subsystems where the MSS Operator has elected net Settlement will be included on an MSS basis and not on an individual resource basis.

- (i) The IFM Bid Cost Uplift shall be the net of the IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.
- (ii) The RUC Bid Cost Uplift shall be the net of the RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources in the CAISO Balancing Authority Area with Unrecovered Bid Cost Uplift Payments.



(iii) The RTM Bid Cost Uplift shall be the net of the RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses for a Settlement Interval of all Bid Cost Recovery Eligible Resources with Unrecovered Bid Cost Uplift Payments.

#### **11.8.6.2 Sequential Netting of RUC and RTM Bid Cost Uplift**

For each Settlement Interval, the Net RUC or Real-Time Market Bid Cost Uplift is determined for the purposes of allocating Net RUC or Real-Time Market Bid Cost Uplift by the following netting rules applied:

(i) The Net RUC Bid Cost Uplift is equal to the greater of zero or any positive RUC Bid Cost Uplift offset by negative Real-Time Market Bid Cost Uplift.

(ii) The Net Real-Time Market Bid Cost Uplift is equal to the greater of zero or any positive Real-Time Market Bid Cost Uplift offset by any negative RUC Bid Cost Uplift.

#### **11.8.6.3 Determination of Total Positive CAISO Markets Uplifts**

##### **11.8.6.3.1 Total Positive IFM Uplift**

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#### **11.10.9.3 Rescission of Payments for Undelivered Ancillary Service Capacity**

If the total metered output of a Generating Unit, Participating Load, System Unit or System Resource is insufficient to supply the amount of FMM Instructed Imbalance Energy or RTD Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Spinning Reserves or awarded or self-provided Non-Spinning Reserves in any Settlement Interval, then the capacity payment associated with the difference between the scheduled amount of each Ancillary Service for which insufficient Energy was delivered and the actual output attributed to the response to the Dispatch Instruction shall be rescinded. If, after the issuance of a Dispatch Instruction associated with Non-Spinning Reserves, the actual response of a Proxy Demand Resource is insufficient to supply the amount of FMM Instructed Imbalance Energy or RTD Instructed Imbalance Energy associated with a Dispatch Instruction issued in accordance with awarded or self-provided Non-Spinning Reserves, then the capacity payment associated with the difference between the scheduled amount and the actual amount attributed to the response to the Dispatch Instruction (as established pursuant to the applicable

Business Practice Manual) shall be rescinded. However, no capacity payment shall be rescinded if the shortfall in the metered output of the Generating Unit, Participating Load, Proxy Demand Resource, System Unit, or System Resource is less than a deadband amount published by the CAISO on the CAISO Website at least twenty-four hours prior to the Settlement Interval. For any Settlement Interval with respect to which no deadband amount has been published by the CAISO, the deadband amount shall be zero MWh. For purposes of these calculations, total metered output will not include Energy provided or reduced as a result of AGC signals.

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### **11.13.5 Daily RMR Excess Revenues**

For each Trading Day, the CAISO will calculate the Daily RMR Excess Revenues as the total CAISO daily sum of IFM excess payment, RC excess payment, and RTM excess payment. The RMR Resource will have its RMR Capacity Payment reduced by the IFM excess payment, ~~if~~ the net of all IFM Bid Cost Shortfalls and IFM Bid Cost Surpluses calculated pursuant to Section 11.8.2 over a Trading Day is negative. The RMR Resource will have its RMR Capacity Payment reduced by the RUC excess payment, if the net of all RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses calculated pursuant to Section 11.8.3 over a Trading Day is negative. The RMR Resource will have its RMR Capacity Payment reduced by the RTM excess payment, if the net of all RTM Bid Cost Shortfalls and RTM Bid Cost Surpluses calculated pursuant to Section 11.8.4 over a Trading Day is negative.

\* \* \* \* \*

### **11.19.1 FERC Annual Charge Recovery Rate**

#### **11.19.1.1 Obligation for FERC Annual Charges**

Each Scheduling Coordinator shall be obligated to pay for the FERC Annual Charges for its use of the CAISO Controlled Grid to transmit electricity, including any use of the CAISO Controlled Grid through Existing Contracts scheduled by the Scheduling Coordinator. Any FERC Annual Charges to be assessed

by FERC against the CAISO for such use of the CAISO Controlled Grid shall be assessed against Scheduling Coordinators at the FERC Annual Charge Recovery Rate, ~~as determined in accordance with Section 11.19.4.~~ Such assessment shall be levied monthly against all Scheduling Coordinators based upon each Scheduling Coordinator's metered Demand and exports.

\* \* \* \* \*

#### 11.22.2.5 Allocation of the GMC Among Scheduling Coordinators

The costs ~~will be allocated to the service charges that comprise~~ recovered through the Grid Management Charge ~~according to the formula in Appendix F, Schedule 1, Part A shall be allocated to the service charges that comprise the Grid Management Charge.~~ The costs recovered through the Grid Management Charge shall not exceed \$202 million unless the CAISO submits a tariff amendment increasing this amount pursuant to Section 205 of the FPA and FERC accepts such amendment.

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#### 11.29.10.4 ~~[Not Used]~~ Emergency Procedures

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### Section 22

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#### 22.1.3 Audit Results

Exceptions identified as a result of an audit will be reviewed with the CAISO Audit Committee. The results of the audits and actions to be taken by the CAISO as a result of the audit shall be ~~mailed-made~~ available to Market Participants upon request.

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## **Section 24**

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### **24.3.1 Inputs to the Unified Planning Assumptions and Study Plan**

The CAISO will develop Unified Planning Assumptions and a Study Plan using information and data from the approved Transmission Plan developed in the previous planning cycle. The CAISO will consider the following in the development of the Unified Planning Assumptions and Study Plan:

- (a) WECC base cases, as may be modified for the relevant planning horizon;

\* \* \* \* \*

- (m) The most recent Annual Interregional Information provided by other Planning Regions; and
- (~~ne~~) Import Capability expansion requests submitted in comments on the draft Unified Planning Assumptions and Study.

\* \* \* \* \*

### **24.4.7 Description of Transmission Solutions**

The transmission solutions identified in the revised draft and final comprehensive Transmission Plan, or in a supplemental assessment to the final comprehensive Transmission Plan, that are subject to the competitive solicitation process will provide sufficient engineering detail to permit Project Sponsors to submit complete proposals, under section 24.5.1 to build the identified transmission solution. As further described in the Business Practice Manual, such details may include, but are not limited to:

- (a) Minimum Conductor Ampacity;

- (b) Approximate Line impedance required;
- (c) Approximate Series compensation levels;
- (d) Substation bus and breaker configuration;
- (e) Breaker clearing times;
- (f) Transformer characteristics (capacity, impedance, tap range);
- (g) Minimum Shunt capacitor and reactor sizes;
- (h) Minimum FACTS device specifications;
- (i) RAS requirements;
- (j) Planning level cost estimates;
- (k) Projected in-service date.

\* \* \* \* \*

#### **24.5.1 Competitive Solicitation Process**

According to the schedule set forth in the Business Practice Manual, in the month following the CAISO Governing Board's approval of the comprehensive Transmission Plan, or a supplemental assessment to the final comprehensive Transmission Plan, whichever is applicable, the CAISO will initiate a period of at least ten (10) weeks that will provide an opportunity for Project Sponsors to submit specific proposals to finance, own, and construct the Regional Transmission Facilities subject to competitive solicitation identified in the comprehensive Transmission Plan or supplemental assessment. If the transmission solution adopted in Phase 2 involves an upgrade or improvement to, addition on, or a replacement of a part of an existing Participating TO facility, the Participating TO will construct and own such upgrade, improvement, addition or replacement facilities unless a Project Sponsor and the Participating TO agree to a different arrangement. For Regional Transmission Facilities with capital costs of \$50 million or less that were approved by CAISO management before Governing Board approval of the comprehensive Transmission Plan, the ten week period will be initiated following management approval of the facility, and the Project Sponsor selection process may follow an accelerated schedule described in the Business Practice Manual. Such proposals must include plan of service details and supporting information as set

forth in the Business Practice Manual sufficient to: (1) enable the CAISO to determine whether the Project Sponsor meets the qualification criteria specified in section 24.5.3.1; (2) enable the CAISO to determine whether a Project Sponsor's proposal meets the proposal qualification criteria in section 24.5.3.2; and (3) enable the CAISO, if there are multiple qualified Project Sponsors bidding on the same Regional Transmission Facility, to conduct a comparative analysis of the proposals and Project Sponsors and select an Approved Project Sponsor as described in section 24.5.3.5. The project proposal will identify the authorized governmental body from which the Project Sponsor will seek siting approval for the project. Within 30 days after the CAISO posts the revised draft comprehensive Transmission Plan, or a supplemental assessment to the final comprehensive Transmission Plan, to its website, whichever is applicable, for each Regional Transmission Facility identified in the revised draft comprehensive Transmission Plan or supplemental assessment that is subject to competitive solicitation, the CAISO will post, for informational purposes only, those existing qualification criteria and selection factors, in addition to any binding cost containment commitments, which the CAISO believes are key for purposes of selecting an Approved Project Sponsor for the particular transmission solution, consistent with the comparative analysis described in section 24.5.4 and the project sponsor qualification and selection criteria specified in sections 24.5.3.1 and 24.5.4, respectively.

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## **Section 25**

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### **25.3 Maintenance of Encumbrances**

No new Generating Unit shall adversely affect the ability of the applicable Participating TO to honor its Encumbrances existing as of the time an Interconnection Customer submits its Interconnection Request to the CAISO. The applicable Participating TO, in consultation with the CAISO, shall identify any such adverse effect on its Encumbrances ~~in the Interconnection System Impact Study performed under Section 7 of Appendix U (the LGIP), the Phase I Interconnection Study performed under Section 6 of Appendix Y (the GIP), the system impact study performed under Section 3.4 of the SGIP, or the System Impact Study~~

~~performed under Section 5.1 of Appendix W, as applicable in the applicable Interconnection Study.~~ To the extent the applicable Participating TO determines that the connection of the new Generating Unit will have an adverse effect on Encumbrances, the Interconnection Customer shall mitigate such adverse effect.

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## **Section 27**

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### **27.6 State Estimator**

The State Estimator produces a power flow solution based upon the modeled representation of the electrical network and available Real-Time SCADA telemetry. When this solution is applied to the FNM, it provides a reference of system conditions for determining Dispatch Instructions. The State Estimator also provides a reference for Real-Time Load Distribution Factors used to distribute the Real-Time CAISO Forecast of CAISO Demand as well as provide a source of historical data for the LDF library. In lieu of the State Estimator, If the State Estimator is not capable of providing CAISO with a solution to clear the CAISO Markets, the CAISO may shall use the last best State Estimator solution or use telemetry for determining Dispatch Instructions, ~~provided the State Estimator is not unavailable for an extended period.~~ ~~If the State Estimator is not available for an extended period of time~~ In all cases, the CAISO shall use the Load Distribution Factors from the Load Distribution Factors library as applicable to the prevailing system and time of use conditions to determine Dispatch Instructions.

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## **Section 29**

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## 29.2 EIM Entity and EIM Sub-Entity Access to the Real-Time Market

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### (b) Implementation of Access as an EIM Entity.

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#### (6) Readiness Certification.

- (A) **Certification.** The CAISO and the prospective EIM Entity shall each file a market readiness certificate with ~~the~~ FERC at least 30 days prior to the EIM Entity Implementation Date in which a senior office of each entity attests –
- (i) that the processes and systems of the prospective EIM entity have satisfied or will have satisfied the readiness criteria set forth in Section 29.2(b)(7) as of the EIM Entity Implementation Date;
  - (ii) to any known issues requiring resolution prior to the EIM Entity Implementation Date in accordance with section 29.2(b)(8);
  - (iii) to any exceptions from the established thresholds specified in the Business Practice Manuals, and that despite such exceptions the criteria were met or will be met as specified in 29.2(b)(7); and
  - (iv) that the EIM Entity Implementation Date is conditional on the resolution of the known issues identified in the certificates and any unforeseen issues that undermine the satisfaction of the readiness criteria set forth in Section 29.2(b)(7).
- (B) **Delay or Re-Certification.** If, subsequent to readiness certification pursuant to Section 29.2(b)(6)(A), the CAISO or the prospective EIM



Entity determines that it cannot proceed with implementation on the EIM Entity Implementation Date, the CAISO or the prospective EIM Entity will notify ~~the~~ FERC of the delay, the reason for the delay, the new EIM Entity Implementation Date if it can be determined, and whether it will need to re-issue a portion or all of the readiness certification.

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## 29.9 Outages and Critical Contingencies.

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### (d) **Actions Regarding Scheduled Outages.**

- (1) **CAISO Evaluation of Scheduled Outages.** The CAISO will implement the transmission and Generation Outages approved by the EIM Entity or EIM Sub-Entity through the Day-Ahead Market process and will inform the EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator where applicable of any anticipated overloads.
- (2) **EIM Entity and EIM Sub-Entity Action.** Based on the information provided by the CAISO to the EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator, the EIM Entity and EIM Sub-Entity shall have the opportunity to take action to adjust or cancel Outages as it determines to be necessary.
- (3) **Notice to Reliability Coordinator.**
  - (A) **EIM Entity and EIM Sub-Entity Responsibility.** The EIM Entity and EIM Sub-Entity are responsible for informing the Reliability Coordinator of scheduled Outages.
  - (B) **CAISO Facilitation.** Upon request of an EIM Entity or EIM Sub-Entity, and without assuming any liability, the CAISO ~~may~~ provide a third

~~party~~ Reliability Coordinator with Outage information submitted to the CAISO by the EIM Entity or EIM Sub-Entity on behalf of the EIM Entity or EIM Sub-Entity.

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#### 29.11 Settlements and Billing for EIM Market Participants.

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(i) **EIM Administrative Charge.**

- (1) **In General.** The CAISO will charge EIM Market Participants an EIM Administrative Charge consisting of the real-~~time~~ portions of the Market Services Charge and the System Operations Charge.

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#### 29.34 EIM Operations

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(e) **EIM Resource Plan.**

- (1) **In General.** By 10:00 a.m. of the day preceding the Operating Day, the EIM Entity Scheduling Coordinators and, if permitted by the EIM Entity, EIM Sub-Entity Scheduling Coordinators on behalf of non-participating resources and EIM Participating Resource Scheduling Coordinators on behalf of EIM Participating Resources, must submit all applicable components of the EIM Resource Plan as set forth in Section 29.34(e)(3).
- (2) **Scope.** The EIM Resource Plan components must cover a seven day horizon (with hourly detail for each resource) beginning with the Operating Day.
- (3) **Contents.** The EIM Resource Plan shall comprise-

- (A) EIM Base Schedules of EIM Entities, EIM Sub-Entities as applicable, and EIM Participating Resources;
  - (B) Energy Bids (applicable to EIM Participating Resources only);
  - (C) EIM Upward Available Balancing Capacity;
  - (D) EIM Downward Available Balancing Capacity;
  - (E) EIM Reserves to Meet NERC/WECC Contingency Reserves Requirements; and
  - (F) if the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator is not relying on the CAISO's Demand Forecast, a Demand Forecast.
- (4) **Contents of EIM Base Schedules.** EIM Base Schedules and EIM Sub-Entities of EIM Entities must include hourly-level Demand Forecasts for EIM Demand, hourly-level schedules for resources, including any hourly-level schedules below PMin that the EIM Entity seeks an accounting for, and, for EIM Entities only, ~~and~~ hourly-level scheduled Interchanges.
- (5) **Adjustment Prior to Submission of Real-Time EIM Base Schedules.** The EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator may adjust the components of the EIM Resource Plan prior to the submission of Real-Time EIM Base Schedules up to 75 minutes before the Operating Hour.

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### **Section 30**

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#### **30.5.2.5 Supply Bids for Metered Subsystems**

Consistent with the bidding rules specified in this Section 30.5, Scheduling Coordinators that represent

MSS Operators may submit Bids for Energy and Ancillary Services, including Self-Schedules and Submissions to Self-Provide an Ancillary Service, to the DAM. All Bids to supply Energy by MSS Operators must identify each Generating Unit on an individual unit basis. The CAISO will not accept aggregated Generation Bids without complying with the requirements of Section 4.9.12 of the CAISO Tariff. All Scheduling Coordinators that represent MSS Operators must submit Demand Bids at the relevant MSS LAP. Scheduling Coordinators that represent MSS Operators must comply with Section 4.9 of the CAISO Tariff. Scheduling Coordinators that represent MSS Operators that have opted out of RUC participation pursuant to Section 31.5 must Self-Schedule one hundred percent (100%) of the Demand Forecast for the MSS. For an MSS that elects Load following, the MSS Operator shall also self-schedule or bid Supply to match the Demand Forecast. All Bids for MSSs must ~~be~~ identify each Generating Unit on an individual unit basis or a System Unit. For an MSS that elects Load following consistent with Section 4.9.13.2, the Scheduling Coordinator for the MSS Operator must include the following additional information with its Bids: the Generating Unit(s) that are Load following; the range of the Generating Unit(s) being reserved for Load following; whether the quantity of Load following capacity is either up or down; and, if there are multiple Generating Units in the MSS, the priority list or distribution factors among the Generating Units. The CAISO will not dispatch the resource within the range declared as Load following capacity, leaving that capacity entirely available for the MSS to dispatch. The CAISO uses this information in the IFM runs and the RUC to simulate MSS Load following. The Scheduling Coordinator for the MSS Operator may change these characteristics through the Bid submission process in the RTM. If the Load following resource is also an RMR Unit, the MSS Operator must not specify the RMR Contract Capacity specified in the RMR Contract as Load following up or down capacity to allow the CAISO to access such capacity for RMR Dispatch.

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### **30.6.3 Net Benefits Test for PDRs or RDRRs**

In accordance with Section 11.~~65-2.4~~, the CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Proxy Demand Resources and Reliability Demand Response Resources-. The

CAISO will not accept Proxy Demand Resource or Reliability Demand Response Resource Bids for Energy below this threshold Market Clearing Price in the CAISO Markets.

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### **30.7.3 Day-Ahead Market Validation**

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**Step 3:** If the Bid successfully passes validation in Step 2, it will continue through the third level of validation where the Bid will be analyzed based on its contents to identify any missing Bid components that must be present for the Bid to be valid consistent with the market rules contained in Article III of this CAISO Tariff and as reflected in the Business Practice Manuals. At this stage the Bid will either be automatically modified for correctness and assigned a status of conditionally modified or modified, or if it can be accepted as is, the Bid will be assigned a status of conditionally valid, or valid. A Bid will be automatically modified and assigned a status of modified or conditionally modified Bid, whenever the CAISO inserts or modifies a Bid component. The CAISO will insert or modify a Bid component whenever (1) a Self-Schedule quantity is less than the lowest quantity specified as an Economic Bid for either an Energy Bid or Demand Bid, in which case the CAISO extends the Self-Schedule to cover the gap; (2) for non-Resource Adequacy Resources, the CAISO will extend the Energy Bid Curve or, if the Scheduling Coordinator did not submit an Energy Bid Curve, use the Generated Bid to cover any capacity in a RUC Bid component, if necessary; and (3) for a Resource Adequacy Resource that is not a Use-Limited Resource, the CAISO will extend the Energy Bid Curve or, if the Scheduling Coordinator did not submit an Energy Bid Curve, use the Generated Bid to cover any capacity in a RUC Bid component and, if necessary, up to the full registered Resource Adequacy Capacity. The CAISO will generate a Proxy Bid or extend an Energy Bid or Self-Schedule to cover any RUC Award or Day-Ahead Schedule in the absence of any Self-Schedule or Economic Bid components, or to fill in any gaps between any Self-Schedule Bid and any Economic Bid components to cover a RUC Award or Day-Ahead Schedule. To the extent that an Energy Bid to the HASP/RTM is not accompanied by an Ancillary Services Bid, the CAISO

will insert a Spinning Reserve and Non-Spinning Reserve Ancillary Services Bid at \$ 0/MW for any certified Operating Reserve capacity. The CAISO will also generate a Self-Schedule Bid for any Generating Unit that has a Day-Ahead Schedule but has not submitted Bids in HASP/RTM, up to the quantity in the Day-Ahead Schedule. Throughout the Bid evaluation process, the Scheduling Coordinator shall have the ability to view the Bid and may choose to cancel the Bid, modify and re-submit the Bid, or leave the modified, conditionally modified or valid, conditionally valid Bid as is to be processed in the designated CAISO Market. ~~The CAISO will not insert or extend any Bid for a Resource Adequacy Resource that is a Use-Limited Resource.~~ These validation rules apply to Bids submitted on behalf of Use Limited Resources. The purpose of the validation rules is not to increase the amount of capacity that a Use Limited Resource has offered into the CAISO Markets.

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### **30.7.3.3 Validation Prior to Market Close and After Master File Update**

Prior to the Market Close of the DAM, after the Master File data has been updated, all Bids must be re-validated using the same process as described in Section 30.7.3.1 to produce either valid Bids or modified Bids. Throughout this process the Scheduling Coordinator shall have the ability to view the Bid and may choose to re-submit (at which point the Bid would undergo the Bid validation process described in this Section 30.7 again), cancel, or modify the Bid. Valid or modified Bids that are not re-submitted or cancelled become Clean Bids after the Market Close of the DAM. Modified Bids for Resource Adequacy Resources will reflect the ~~full capability of the resource as defined in the Master File~~ full amount of the resource's Resource Adequacy Capacity.

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## **30.7.12 Validation of Bids in Excess of Soft Energy Bid Cap, Hard Energy Bid Cap, or Minimum Load Cost Hard Cap**

### **30.7.12.1 Generally**

Except as otherwise stated in this Section 30.7.12, the validation rules in this Section 30.7.12 apply to all Energy Bids and Minimum Load Bids submitted by Scheduling Coordinators. The provisions of Sections 30.7.12.1 through 30.7.12.4 do not apply to Virtual Bids and Energy Bids submitted for Non-Resource-Specific System Resources; the provisions of Section 30.7.12.5 apply to Virtual Bids and Energy Bids submitted for Non-Resource-Specific System Resources. The CAISO will allow Bids for Non-Resource-Specific System Resources that are Resource Adequacy Resources and that exceed the Soft Energy Bid Cap subject to the Bid price screens described in Section 30.7.12.5.1. The CAISO will allow Virtual Bids, Export Bids, Demand Bids, and Bids for Non-Resource-AdequacySpecific System Resources that are not Resource Adequacy Resources and that exceed the Soft Energy Bid Cap subject to the rules specified in Section 30.7.12.5.2. The CAISO will reject Virtual Bids, Export Bids, Demand Bids, Bids for Non-Resource-Specific System Resources that exceed the Hard Energy Bid Cap.

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### **30.11.5 Application of Revised Reference Level**

For the Day-Ahead Market, the Revised Default Commitment Cost Bids and Revised Default Energy Bid will apply to the applicable Trading Day of the Day-Ahead Market. For the Real-Time Market, the Revised Default Commitment Cost Bids and Revised Default Energy Bid will apply from the Real-Time Market Trading Hour for which it is practicable for the CAISO to apply the change until the last Trading Hour of the Trading Day for which the Reference Level Change Request was specified. The CAISO will not update the applicable Reasonableness Threshold when it accepts an automated Reference Level Change Request. The CAISO will update a resource's applicable Reasonableness Threshold to equal the resource's Reference Level when it accepts a manual Reference Level Change Request. The Scheduling Coordinator may submit an application for after-CAISO Market Process adjustments pursuant to Section 30.12 for any costs not verified through the automated Reference Level Change Request process or that were rejected through the manual Reference Level Change Request process. A Multi-Stage Generating Resource cannot submit a Reference Level Change Request for its Proxy Transition Costs but the CAISO will recalculate the Proxy Transition Costs if a Scheduling Coordinator revises the

Start-Up Bids that initially were the basis of calculating the Proxy Transition Cost.

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### **Section 31**

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#### **31.2 Day-Ahead MPM Process**

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM process, which is a single market run that occurs prior to the IFM Market Clearing run. The Day-Ahead MPM process determines which Bids need to be mitigated to the applicable Default Energy Bids in the IFM pursuant to Section 31.2.3. For Maximum Net Dependable Capacity of Legacy RMR Units, Bids will be mitigated to the RMR Proxy Bids pursuant to Section 31.2.3. The Day-Ahead MPM process optimizes resources to meet Demand reflected in Demand Bids, including Export Bids and Virtual Demand Bids, and to procure one hundred (100) percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. Virtual Bids and Bids from Demand Response Resources, Participating Load, Hybrid Resources, and Non-Generator Resources are considered in the MPM process, but are not subject to Bid mitigation. Bids from Participating Load resources that are not subject to Bid mitigation will also be considered in the MPM process. ~~Bids from resources comprised of multiple technologies that include Non-Generator Resources will remain to be subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation.~~ The mitigated or unmitigated Bids and RMR Proxy Bids identified in the MPM process for all resources that cleared in the MPM are then passed to the IFM. The CAISO performs the MPM process for the DAM for the twenty-four (24) hours of the targeted Trading Day.

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#### **31.5.3 RUC Procurement Target**



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### **31.5.3.2.1 Use of RUC Zones**

The CAISO shall adjust the CAISO Forecast of CAISO Demand by RUC Zone for the conditions described in Sections 31.5.3.1.2 through 31.5.3.1.6. If any adjustments are made throughout the affected RUC Zone, such adjustments will be made consistent with the subset of system LDFs for the Nodes that define the RUC Zone(s). The CAISO will adjust the CAISO Forecast of CAISO Demand of each affected RUC Zone, preserving the LDFs within each RUC Zone, but the relative weighting of the LDFs across the system will deviate from the original LDFs. RUC costs will be pooled together to establish the RUC Compensation Costs. As described in Section 11.-6.1, Settlement of RUC Compensation Costs will not be on a RUC Zone basis.

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## **Section 34**

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### **34.1.5 Mitigating Bids in the RTM**

#### **34.1.5.1 Generally**

After the Market Close of the RTM, after the CAISO has validated the Bids pursuant to Section 30.7 and Section 34.1.4, and prior to conducting any other RTM processes, the CAISO conducts a MPM process. The results are used in the RTM optimization processes. Bids on behalf of Demand Response Resources, Participating Load, Hybrid Resources, and Non-Generator Resources are considered in the MPM process but are not subject to Bid mitigation. ~~Bids from resources comprised of multiple technologies that include Non-Generator Resources will remain subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation.~~

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### **34.1.6.2 Eligible Intermittent Resources using the CAISO Forecast**

Eligible Intermittent Resources that have elected to use the CAISO forecast as specified in Section 4.8.2.1.2 are not required to submit a forecast for the binding interval by 37.5 minutes prior to flow. For Participating Intermittent Resources for which Scheduling Coordinators have elected to use the output forecast provided by the CAISO and have selected such a flag in their Master File, the CAISO will use the MWh forecast data the CAISO produces for such a resource at 37.5 minutes prior to the applicable FMM as follows: (a) as the MWh amounts input to be cleared for that resource in the FMM if only a Self-Schedule is submitted, ~~orand~~ (b) as the upper economic limit used for that resource in the FMM if an Economic Bid with or without a Self-Schedule is submitted. Dispatch instructions may also be affected by transmission and resource operational constraints and utilization of updated forecasts. The forecast used by the CAISO will be in fifteen-minute granularity. Scheduling Coordinators representing Participating Intermittent Resources whose output is designated to satisfy a Resource Adequacy requirement must submit Variable Energy Resource Self-Schedules in the RTM in accordance with the output forecast provided by the CAISO, or an Economic Bid.

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### **34.3.2 Commitment Of Short Start Units**

RTUC produces binding and advisory Start-Up and Shut-Down Dispatch Instructions for Short Start Units that have Start-Up Times that can be committed prior to the end of the relevant time period of the RTUC run as described in Section 34.3.1. A Start-Up Dispatch Instruction is considered binding in any given RTUC run if there would not be sufficient time for a subsequent RTUC run to Start-Up the resource. A Start-Up Instruction is considered advisory if it is not binding, such that the resource could achieve its target Start-Up Time as determined in the current RTUC run in a subsequent RTUC run based on its Start-Up Time. A Shut-Down Instruction is considered binding if the resource could achieve the target Shut-Down Time as determined in the current RTUC run in a subsequent RTUC run. A Shut-Down

Dispatch Instruction is considered advisory if the resource Shut-Down Instruction is not binding such that the resource could achieve its target Shut-Down time as determined in the current RTUC run in a subsequent RTUC run. A binding Dispatch Instruction that results in a change in Commitment Status will be issued, in accordance with Section 6.3, after review and acceptance of the Start-Up Instruction by the CAISO Operator. An advisory Dispatch Instruction changing the Commitment Status of a resource may be modified by the CAISO Operator to a binding Dispatch Instruction and communicated in accordance with Section 6.3 after review and acceptance by the CAISO Operator. ~~Only binding and not advisory Dispatch Instructions will be issued by the CAISO.~~ For Multi-Stage Generating Resources the CAISO will also issue binding Transition Instructions when the Multi-Stage Generating Resource must change from one MSG Configuration to another. A Transition Instruction is considered binding in any given RTUC run if the Transition Time for the Multi-Stage Generating Resource is such that there would not be sufficient time for a subsequent RTUC run to transition the resource.

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#### **34.5.1 Real-Time Economic Dispatch**

RTED mode of operation for RTD normally runs every five (5) minutes starting at approximately 7.5 minutes prior to the start of the next Dispatch Interval and produces binding Dispatch Instructions for Energy for the next Dispatch Interval and advisory Dispatch Instructions for multiple future Dispatch Intervals through at least the next Trading Hour. After being reviewed by the CAISO Operator, only binding Dispatch Instructions are communicated for the next Dispatch Interval in accordance with Section 6.3. RTED will produce a Dispatch Interval LMP for each PNode for the Dispatch Interval associated with the binding Dispatch Instructions. The RTED Dispatch target is the middle of the interval between five (5) minutes boundary points. For Variable Energy Resources that forecast with 5 minute granularity, the CAISO will use the 5-minute forecast available prior to the start of the RTD optimization as an input into the optimization to determine the instructed Energy of the resource. RTD will be based on the 5-minute forecast value, subject to transmission and resource operational constraints, as the instructed Energy for the binding RTD interval provided that the Variable Energy Resource is optimized through the RTED.

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### 34.7 General Dispatch Principles

The CAISO shall conduct all Dispatch activities consistent with the following principles:

- (1) The CAISO shall issue AGC instructions electronically as often as every four (4) seconds from its Energy Management System (EMS) to resources providing Regulation and on Automatic Generation Control to meet NERC and WECC performance requirements;

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- (13) The CAISO may make Reliability Demand Response Resources eligible for Dispatch in accordance with applicable Operating Procedures ~~either: (a) after issuance of a warning; (b) during stage 1, stage 2, or stage 3 of a System Emergency; or (c) for a transmission-related System Emergency.~~

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## Section 36

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### 36.4.2 Simultaneous Feasibility

The annual and monthly CRR Allocation processes release CRRs to fulfill CRR nominations as fully as possible subject to a Simultaneous Feasibility Test. To the extent that nominations are not simultaneously feasible, the nominations are reduced in accordance with the CRR Allocation optimization formulation until simultaneous feasibility is achieved. The CRR Allocation optimization formulation, detailed in the Business Practice Manuals, utilizes a weighted least squares objective function that applies pro-rated reductions in flows on a binding constraint based on squares of the Power Transfer

Distribution Factor of each CRR nomination for the binding constraint. In addition to the adjustments in Section 36.4.1.3, the Simultaneous Feasibility Test for each CRR Allocation considers:

- (a) CRRs representing ETCs, Converted Rights and any TOR capacity that was not captured in the adjustments described in Section 36.4, which the CAISO deems necessary to prevent the Congestion Settlement of ETCs, Converted Rights, and TORs from causing revenue inadequacy of allocated and auctioned CRRs;
- (b) In the case of the monthly CRR Allocation, the CRRs already released for that month in the annual CRR Allocation and Auction; and,
- (c) The CRRs allocated in previous CRR Allocation tiers as described in Sections 36.8.3.1 through 36.8.3.6.

The CAISO will be responsible for submitting CRR nominations associated with ETC and Converted Rights Self-Schedules. These nominations will be Point-to-Point CRR nominations. ~~The priority weights for these Point-to-Point CRR nominations will be given a higher value than the proxy bids associated with the nominations submitted by the CRR Allocation participants, if they are included in the same market run.~~

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### **36.8.2 Load Eligible For CRRs And Eligible CRR Sinks**

Any entity that wishes to participate in the CRR Allocation process must provide information that demonstrates that it has an obligation to serve load. An LSE's eligibility for allocation of CRRs is measured by the quantity of Load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Sections 36.8.2.1 and 36.8.2.2. An OBAALSE's eligibility for allocation of CRRs is also measured by the quantity of load that it serves that is exposed to Congestion Charges for the use of the CAISO Controlled Grid as determined in Section 36.9.3. For LSEs, the information necessary may include, but is not limited to, Settlement Quality Meter Data or relevant documents filed with the California Energy Commission. For OBAALSEs, the necessary information may

include, but is not limited to, historical tagged Real-Time Interchange Export Schedules and historical load data reflecting the load they serve that is exposed to Congestion Charges for the use of the CAISO Controlled Grid. In addition, each such OBAALSE shall support its data submission with a written sworn affidavit by an executive authorized to represent the OBAALSE attesting to the accuracy of the data, and the CAISO will have the right to audit the raw data and calculations used to develop the submitted data set. An LSE serving internal Load is eligible for CRRs up to its Seasonal CRR Eligible Quantity or Monthly CRR Eligible Quantity, which is derived from its Seasonal CRR Load Metric or Monthly CRR Load Metric as described in Sections 36.8.2.1 and 36.8.2.2, respectively. Seasonal CRR Eligible Quantities and Monthly CRR Eligible Quantities for Qualified OBAALSEs are determined as provided in Section 36.9.3. These quantities are calculated for each LSE or Qualified OBAALSE separately for each combination of season and time of use period for the annual CRR Allocation process, and for each time of use period for each monthly CRR Allocation process, and for each CRR Sink at which the eligible LSE serves Load or the Qualified OBAALSE exports Energy from the CAISO Balancing Authority Area. MSS eligibility for CRRs will account for net or gross MSS Settlement in accordance with Section 4.9.13.1. If the MSS Operator elects net Settlement, LSEs for such MSS Load shall submit CRR Sink nominations at the MSS LAP. If the MSS elects for gross Settlement, LSEs for such MSS Load shall submit CRRs Sink nominations at the applicable Default LAP. Load that is Pumped-Storage Hydro Units but is not Participating Load may be scheduled and settled at a PNode or Custom Load Aggregation Point and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode or Custom Load Aggregation Point. Load that is a Participating Load that is also aggregated is scheduled and settled at a Custom Load Aggregation Point that is customized specifically for such Load and, therefore, LSEs for such Participating Load shall submit CRR Sink nominations at the Custom Load Aggregation Point. Load that is Participating Load is scheduled and settled at an individual PNode, and therefore LSEs for such Load shall submit CRR Sink nominations at the applicable PNode. Load that is non-Participating Load, is not Pumped-Storage Hydro Units, and is not Load associated with ETCs, TORs, or MSS Operators that elects net Settlement, is scheduled and settled at the Default LAP. Therefore, LSEs for such Load shall submit CRR Sink nominations at their assigned Default LAP or Default LAPs if the Load they serve is located in more than one Default LAP. In tier 2 and tier 3 of the annual process and

tier 1 and tier 2 of the monthly process, such LSEs may also submit CRR Sink nominations at a Sub-LAP of their assigned Default LAP. The CAISO will make available, ~~prior to the beginning of the CRR Allocation process but no later than thirty (30) days before the date on which the Candidate CRR Holders or CRR Holders will be required to submit their nominations for the CRR Allocation,~~ a list of allowable CRR Sources and Sinks to be used in the allocation at approximately the same time as the CAISO releases each CRR FNM. The allowable CRR Sinks will be consistent with the applicable CRR FNM. In the event that unforeseen changes to network conditions arise after the thirty-day release of the list of allowable CRR Sinks and warrant revisions to that list, the CAISO will provide updates to the list prior to the closing of nominations for the CRR Allocation.

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### **36.8.3 CRR Allocation Process**

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#### **36.8.3.1.3.1 Tier LT for LSEs**

The quantity of Seasonal CRRs that an LSE can nominate as Long Term CRRs is limited to twenty percent (20%) of the LSE's Adjusted Load Metric, except that an LSE that can demonstrate that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources is able to submit nominations for a greater amount as provided in this section. Such demonstrations shall be provided by the requesting LSE to the CAISO through the submission of a written sworn declaration by an executive employee authorized to represent the LSE and attest to the accuracy of the data demonstration. As necessary, the CAISO may request, and such LSE must produce in a timely manner, documents in support of such declaration. If the LSE has demonstrated that more than twenty percent (20%) of its Adjusted Load Metric is covered by a combination of long-term procurement arrangements of ten (10) years or greater and ownership of Generation resources, the amount of Long Term CRRs that it

may nominate is equal to the minimum of: (i) the sum of the owned resources and long-term procurement arrangements of ten (10) years or more and (ii) fifty percent (50%) of the LSE's Adjusted Load Metric.

If an LSE's combination of long-term procurement arrangements of ten (10) years or greater and ownership of generation resources is greater than twenty percent (20%) of its Adjusted Load Metric and the LSE nominates more than twenty percent (20%) of its Adjusted Load Metric as Long Term CRRs, then the CRR Sources for all of the LSE's Long Term CRR nominations must be sources associated with its demonstrated long-term procurement arrangements of ten (10) years or greater or its owned generation resources. Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point-to-Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub. ~~Subject to the maximum quantities described above in this Section 36.8.3.1.3.1, an LSE can nominate CRRs sourced at a Trading Hub in Tier LT up to the total MW amount of the Point to Point CRRs the LSE was allocated in tiers 1 and 2 as a result of its disaggregated tier 1 and 2 nominations of CRRs sourced at that Trading Hub.~~

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### **Section 37**

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#### **37.5.2 ~~Inaccurate or Late Actual SQMD~~ Accurate and Timely Actual SQMD**

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#### **37.8.10 Review Of Determination**

A Scheduling Coordinator that receives a Sanction, or a Market Participant whose conduct gave rise to the Sanction, may obtain immediate review of the CAISO's determination by directly appealing to FERC,



in accordance with FERC's rules and procedures. In such case, the applicable Scheduling Coordinator shall also dispute the ~~Recalculation~~-Settlement Statement containing the financial penalty, in accordance with Section 11. The ~~Recalculation~~-Settlement Statement dispute and appeal to FERC must be made in accordance with the timeline for raising disputes specified in Section 11.29.8. The penalty will be tolled until FERC renders its decision on the appeal. The disposition by FERC of such appeal shall be final, and no separate dispute of such Sanction may be initiated under Section 13. For the purpose of applying the time limitations set forth in Section 37.10.1, a Sanction will be considered assessed when it is included on a ~~Recalculation~~-Settlement Statement, whether or not the CAISO accepts a Scheduling Coordinator's dispute of such ~~Recalculation~~-Settlement Statement pending resolution of an appeal to FERC in accordance with this section or Section 37.9.3.3.

\* \* \* \* \*

### **37.9.3 Settlement**

#### **37.9.3.1 Settlement Statements**

The CAISO will administer any penalties issued under this Section 37 through ~~Recalculation~~-Settlement Statements, as relevant, issued to the responsible Scheduling Coordinator by the CAISO.

\* \* \* \* \*

## **Section 39**

\* \* \* \* \*

### **39.7.3 Default Competitive Path Designations**

\* \* \* \* \*

**39.7.3.1 Methodology for Determining Day-Ahead Default Competitive Path Designations for Transmission Constraints Other Than Path 15 and Path 26 Transmission Constraints**

The CAISO will designate a Transmission Constraint other than the Path 15 Transmission Constraint or the Path 26 Transmission Constraint as competitive for purposes of determining default competitive path designations for the Day-Ahead Market only if both of the following conditions are met:

- (1) Congestion occurred on the Transmission Constraint in ten (10) or more hours of the days for which the Transmission Constraint was tested for competitiveness pursuant to Section 39.7.2; and
- (2) the Transmission Constraint was deemed competitive pursuant to Section 39.7.2 in seventy-five (75) percent or more of the instances in which the Transmission Constraint was binding when tested. ¶

These calculations will be made utilizing data from the Day-Ahead Market for the most recent sixty (60) Trading Days for which data is available. The CAISO will designate a Transmission Constraint other than the Path 15 Transmission Constraint or the Path 26 Transmission Constraint as non-competitive if the CAISO lacks sufficient data to determine whether the occurrences set forth in Sections 39.7.3.1(1) and 39.7.3.1(2) took place on the Transmission Constraint over the sixty (60) Trading Day period.

\* \* \* \* \*

**Section 40**

\* \* \* \* \*

**40.2.2.1 Reserve Margin**

- (a) The Scheduling Coordinator for a Non-CPUC Load Serving Entity must provide the CAISO with the Reserve Margin(s) adopted by the appropriate Local Regulatory Authority or federal agency for use in the annual Resource Adequacy Plan and monthly Resource Adequacy Plans listed as a percentage of the

Demand Forecasts developed in accordance with Section 40.2.2.3.

- (b) For the Scheduling Coordinator for a Non-CPUC Load Serving Entity for which the appropriate Local Regulatory Authority or federal agency has not established a Reserve Margin(s) or a CPUC Load Serving Entity subject to Section ~~40.2.1.1(b)~~40.2.1(b), the Reserve Margin for each month shall be no less than fifteen percent (15%) of the LSE's peak hourly Demand for the applicable month, as determined by the Demand Forecasts developed in accordance with Section 40.2.2.3.

\* \* \* \* \*

#### **40.4.6.2.2.3 Other Import Capability Information Postings**

The CAISO will post to the CAISO Website on a monthly basis in accordance with the schedule set forth in the Business Practice Manual, for each Intertie, the holder and that holder's quantity in MW of import capability assigned on the particular Intertie as of the reporting date.

The CAISO will also post to the CAISO Website following submission of the annual Resource Adequacy Plans under Sections 40.2.1-4, 40.2.2.4, 40.2.3.4, and 40.2.4, for each Intertie, by a "yes" or "no" designation, whether each holder of import capability assigned on the particular Intertie has fully included the assigned import capability in the holder's annual Resource Adequacy Plans.

\* \* \* \* \*

#### **40.6.6 Requirement for Partial Resource Adequacy Resources**

Only that output of a Resource Adequacy Resource that is designated by a Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Supply Plan shall have an availability obligation to the CAISO. Exports being supported by non-Resource Adequacy Capacity from a Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity as follows:- If a Resource Adequacy Resource goes on a Forced Outage, until the

Scheduling Coordinator provides the information requested under section 9.3.10.3.2, the CAISO shall determine if the Scheduling Coordinator indicated under section 30.5.1 (aa) that capacity from its Resource Adequacy Resource is backing a Self-Schedule of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity. If the Scheduling Coordinator has indicated capacity from its Resource Adequacy Resource is backing a Self-Schedule of exports at Scheduling Points explicitly sourced by non-Resource Adequacy Capacity, the CAISO will allocate the derate pro rata between the RA Capacity and the remainder of the resource's capacity up to its PMax.

\* \* \* \* \*

#### **40.6.8.1.4 Negotiated Price Option**

Under the negotiated price option, a Scheduling Coordinator shall submit a proposed Generated Bid along with supporting information and documentation as described in a Business Practice Manual. Within ten (10) Business Days of receipt, the CAISO will provide a written response. If the CAISO accepts the proposed Generated Bid, it will become effective within three (3) Business Days from the date of acceptance by the CAISO and remain in effect until: (1) the Generated Bid is modified by FERC; (2) the Generated Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Generated Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.

If the CAISO does not accept the proposed Generated Bid, the CAISO and the Scheduling Coordinator shall enter a period of good faith negotiations that terminates sixty (60) days following the date of submission of a proposed Generated Bid by a Scheduling Coordinator. If at any time during this period, the CAISO and the Scheduling Coordinator agree upon the Generated Bid, it will become effective within three (3) Business Days of the date of agreement and remain in effect until: (1) the Generated Bid is modified by FERC; (2) the Generated Bid is modified by mutual agreement of the CAISO and the Scheduling Coordinator; or (3) the Generated Bid expires, is terminated or is modified pursuant to any agreed upon term or condition or pertinent FERC order.

If by the end of the sixty (60) day period the CAISO and the Scheduling Coordinator fail to agree on the

Generated Bid to be used under the negotiated price option, the Scheduling Coordinator has the right to file a proposed Generated Bid with FERC pursuant to Section 205 of the Federal Power Act.

During the sixty (60) day period following the submission of a proposed negotiated Generated Bid by a Scheduling Coordinator, and pending FERC's acceptance in cases where the CAISO fails to agree on the Generated Bid for use under the negotiated price option and the Scheduling Coordinator filed a proposed Generated Bid with FERC pursuant to Section 205 of the Federal Power Act, the Scheduling Coordinator has the option of electing to use any of the other options available pursuant to this Section.

The CAISO shall make an informational filing with FERC of any Generated Bids negotiated pursuant to this Section no later than seven (7) days after the end of the month in which the Generated Bids were established.

\* \* \* \* \*

#### **40.9.2 Exemptions**

- (a) **Capacity Exempt from RAAIM - All Provisions.** The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 –
  - (1) Resources with a PMax less than 1.0 MW;
  - (2) Non-specified resources that provide Resource Adequacy Capacity under contracts for Energy delivered within the CAISO Balancing Authority Area;
  - (3) Participating Load that is also Pumping Load; and
  - (4) Legacy RMR Units.
- (b) **Capacity Exempt from RAAIM - Local/System.**
  - (1) The entire capacity of a resource in any of the following categories is exempt from the RAAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity –
    - (A) Variable Energy Resources;
    - (B) Combined Heat and Power Resources; ~~and~~
    - (C) Run-of-River Resources; and

- (D) Hybrid Resources.
- (2) The capacity of a resource with a Load-following MSS as its Scheduling Coordinator that is designated on a Load-following MSS's monthly Resource Adequacy Plan is exempt from the RAIM provisions in Section 40.9 applicable to local and system Resource Adequacy Capacity, to the extent that the resource's capacity is also designated as Resource Adequacy Capacity on the monthly Supply Plan of that Load-following MSS or another Load-following MSS.
- (3) Resources with Existing QF Contracts or Amended QF Contracts that are Resource Adequacy Resources are exempt from the RAIM provisions in Section 40.9 applicable to local and system capacity –
  - (A) if the QF resource previously provided Resource Adequacy Capacity pursuant to an Existing QF Contract that was executed prior to August 22, 2010 and remained in effect pursuant to California Public Utilities Commission Decision 07-09-040 that extended the term of expiring contracts until such time as the new contracts resulting from that decision are available; or
  - (B) until the QF Resource's Existing QF Contract or Amended QF Contract terminates or if requested by the Scheduling Coordinator for the resource, whichever is earlier.
- (c) **Capacity Exempt from RAIM - Flexible Capacity.**
  - (1) The capacity of Use-Limited Resources in a combination under Section 40.10.3.2(b), 40.10.3.3(b) or 40.10.3.4(b) is exempt from the RAIM provisions in Section 40.9 applicable to Flexible RA Capacity to the extent that the resources are committed to provide Flexible RA Capacity as a combination on their respective monthly Supply Plans.
  - (2) The Capacity of a resource with a Load-following MSS as its Scheduling Coordinator that is designated on a Load-following MSS's monthly Flexible RA Plan is exempt from the RAIM provisions in Section 40.10 applicable to Flexible

RA Capacity, to the extent that the resource's capacity is also designated as Flexible RA Capacity on the monthly Supply Plan of that Load-following MSS or another Load-following MSS.

\* \* \* \* \*

**Section 41**

\* \* \* \* \*

**41.9 Allocation of Reliability Must-Run Contract Costs**

As specified in Section 11.13.75, the CAISO will allocate Reliability Must-Run costs not recovered through market revenues to the Scheduling Coordinators for Load-Serving Entities that serve load in the TAC Area(s) in which the need for the RMR Contract arose. These amounts paid will be allocated to each Scheduling Coordinator based on the pro-rata share of each Load-Serving Entity's TAC Area Metered Demand to total metered Demand recorded in the CAISO settlement system for the actual days of any settlement month period for which the RMR Contract was in effect.

\* \* \* \* \*

**Appendix A**

\* \* \* \* \*

- ~~AWE Notice~~**[Not Used]**

~~Alert, Warning or Emergency Notice~~

\* \* \* \* \*

**- Settlement Statement**

Any one of the following: Initial Settlement Statement T+3B, [Initial Settlement Statement T+9B](#), Recalculation Settlement Statement T+12B, Recalculation Settlement Statement T+55B, [Recalculation Settlement Statement T+70B](#), Recalculation Settlement Statement T+9M, [Recalculation Settlement Statement T+11M](#), Recalculation Settlement Statement T+18M, [Recalculation Settlement Statement T+21M](#), [Recalculation Settlement Statement T+24M](#), Recalculation Settlement Statement T+33M, Recalculation Settlement Statement T+36M, Unscheduled Reissue Recalculation Settlement Statement, or any other Recalculation Settlement Statement authorized by the CAISO Governing Board.

\* \* \* \* \*

**Appendix B.10**

\* \* \* \* \*

**4.3 System Emergency Response.** The SUDC will participate in Load Shedding by reducing Load on a voluntary basis when the CAISO declares an [emergency alert pursuant to its System Emergency Operating procedure that requests Load curtailment Stage 1 System Emergency](#). The SUDC will use any available local communication infrastructure to request that its customers curtail their electricity usage. The SUDC will not be called separately ~~in Stage 3 System Emergencies~~ to manually shed Load. Load restoration of any voluntary Load reduction may not commence until such time as the CAISO declares that a System Emergency no longer exists. The responsibilities of the Parties to direct and to accept direction for Load reduction or other emergency plans are stated in Sections 4.11.4 and 4.11.5 of the CAISO Tariff, and the CAISO Operating Procedures identified in Schedule 9 and CAISO Specifications identified in Schedule 6.

\* \* \* \* \*

**Appendix F**

**Schedule 1**

**Grid Management Charge**

\* \* \* \* \*



## Part C - Costs Recovered through the GMC

\* \* \* \* \*

- (4) CAISO Operating Cost Reserve adjustment is the sum of:
- (a) The actual excess or shortfall in collections of the prior year's rates compared to the budgeted amounts;
  - (b) The actual excess or shortfall in ~~actual~~ CAISO Operating Costs, CAISO Other Costs and Revenues and CAISO Financing Costs for the prior year compared to the budgeted amounts except any excess in the prior year budgeted amount for self-insured healthcare costs compared to actual self-insured healthcare costs;
  - (c) The estimate of current year collections and costs compared to budgeted amounts for the current year ~~except any excess in the prior year budgeted amount for self-insured healthcare costs compared to actual self-insured healthcare costs~~; and
  - (d) The change in CAISO Operating Cost Reserve consistent with the level of the CAISO Operating Cost Reserve requirement.

\* \* \* \* \*

### Schedule 4

#### Eligible Intermittent Resources Forecast Fee

A charge up to \$.10 per MWh shall be assessed on the metered Energy from (a) Eligible Intermittent Resources; (b) Variable Energy Resources that are EIM Participating Resources; and (c) the variable component of Hybrid Resources as a Forecast Fee, provided that Generating Units smaller than 10 MW that are not Participating Intermittent Resources and that sell power pursuant to a power purchase agreement entered into pursuant to PURPA prior to entering into a PGA or Net Scheduled PGA shall be exempt from the Forecast Fee.

The rate of the Forecast Fee shall be determined so as to recover the projected annual costs related to developing Energy forecasting systems, generating forecasts, validating forecasts, and monitoring forecast performance, that are incurred by the CAISO as a direct result of participation by Eligible Intermittent Resources, Variable Energy Resources that are EIM Participating Resources, and the variable component of Hybrid Resources in CAISO Markets, divided by their projected annual Energy production.

The initial Forecast Fee, and all subsequent changes as may be necessary from time to time to recover costs incurred by the CAISO for the forecasting conducted on the behalf of Eligible Intermittent Resources, Variable Energy Resources that are EIM Participating Resources, and the variable component of Hybrid Resources pursuant to the foregoing rate formula, shall be set forth in a Business Practice Manual.

\* \* \* \* \*

## Appendix Q

### Eligible Intermittent Resources Protocol (EIRP)

\* \* \* \* \*

## 2 REQUIREMENTS FOR ELIGIBLE INTERMITTENT RESOURCES, PARTICIPATING INTERMITTENT RESOURCES, AND HYBRID RESOURCES WITH VARIABLE COMPONENT

\* \* \* \* \*

### 2.2.2 Composition of a Participating Intermittent Resource

The CAISO shall develop criteria to determine whether one or more Eligible Intermittent Resources may be included within a Participating Intermittent Resource. Such criteria shall include:

(a) A Participating Intermittent Resource must be at least one-half (.5) ~~one (1)~~ MW-rated capacity.

\* \* \* \* \*

## 3 COMMUNICATIONS

### 3.1 Forecast Data – Wind

The CAISO may require various data relevant to forecasting Energy from an Eligible Intermittent Resource or Hybrid Resource with a variable component to be telemetered to the CAISO, including appropriate operational data, meteorological data or other data reasonably necessary to forecast Energy.

\* \* \* \* \*

#### 3.1.6 Shape-File Submission

Each wind Eligible Intermittent Resource and Hybrid Resource with a wind generation component must submit a shape-file that illustrates, at a minimum, the location of the meteorological station(s), resource project corner, and all individual wind turbines comprising the resource. The shape-file must be submitted in .shp, .dbf, or other file format upon which the CAISO and resource mutually agree.

### 3.2 Forecast Data - Solar

#### 3.2.1 Solar Generation Meteorological Station Requirements

Each solar Eligible Intermittent Resource and Hybrid Resource with a solar generation

component must install and maintain equipment required by the CAISO to support accurate power generation forecasting and the communication of such forecast, meteorological, and other required data to the CAISO consistent with the timeframes specified in this Eligible Intermittent Resource Protocol.

\* \* \* \* \*

## **Appendix DD**

\* \* \* \* \*

### **Section 6 Initial Activities and Phase I of the Interconnection Study Process for Queue Clusters**

\* \* \* \* \*

#### **6.2. Scope and Purpose of Phase I Interconnection Study**

The Phase I Interconnection Study shall:

- (i) evaluate the impact of all Interconnection Requests received during the Cluster Application Window for a particular year on the CAISO Controlled Grid;
- (ii) preliminarily identify all LDNUs, LOPNUs, and RNUs needed to address the impacts on the CAISO Controlled Grid of the Interconnection Requests, as Assigned Network Upgrades or Conditionally Assigned Network Upgrades;
- (iii) preliminarily identify for each Interconnection Request required Interconnection Facilities;
- (iv) assess the Point of Interconnection selected by each Interconnection Customer and potential alternatives to evaluate potential efficiencies in overall transmission upgrades costs;
- (v) establish the Current Cost Responsibility Maximum Cost Responsibility, and Maximum Cost Exposure for each Interconnection Request, until the issuance of the Phase II Interconnection Study report;
- (vi) provide a good faith estimate of the cost of Interconnection Facilities for each Interconnection Request;
- (vii) provide a cost estimate of ADNUs and AOPNUs for each Generating Facility in a Queue Cluster Group Study;
- (viii) identify controls required for each Interconnection Request where the Interconnection Customer requested Interconnection Service Capacity lower than the Generating Facility Capacity;

- (ix) identify any Precursor Network Upgrades; and
- (x) identify RNUs as GRNUs or IRNUs.

The Phase I Interconnection Study will consist of a short circuit analysis, a stability analysis to the extent the CAISO and applicable Participating TO(s) reasonably expect transient or voltage stability concerns, a power flow analysis, including off-peak analysis, an On-Peak Deliverability Assessment, and an Off-Peak Deliverability Assessment for the purpose of identifying LDNUs and LOPNUs and estimating the cost of ADNUs and AOPNUs, as applicable.

\* \* \* \* \*

### 6.3.2.2 Off-Peak Deliverability Assessment.

The CAISO, in coordination with the applicable Participating TO(s), shall perform an Off-Peak Deliverability Assessment for Interconnection Customers selecting Off-Peak Deliverability Status. The Off-Peak Deliverability Assessment will identify transmission upgrades in addition to those Delivery Network Upgrades identified in the On-Peak Deliverability Assessment, if any, for a Group Study or individual Phase I Interconnection Study that includes one or more Location Constrained Resource Interconnection Generators (LCRIG), where the fuel source or source of energy for the LCRIG substantially occurs during off-peak conditions. Interconnection Customers that (i) are not LCRIGs whose fuel source or source of energy substantially occurs off-peak, and (ii) have Full or Partial Capacity Deliverability Status, will receive Off-Peak Deliverability Status without triggering Off-Peak Network Upgrades. Energy Only Interconnection Customers that are not LCRIGs whose fuel source or source of energy substantially occurs off-peak will be Off-Peak Energy Only. LCRIGs whose fuel source or source of energy substantially occurs off-peak will receive Off-Peak Deliverability Status based upon the Off-Peak Deliverability Assessment, regardless of their On-Peak Deliverability Status.

The transmission upgrades identified under this Section shall comprise those needed for the expected output of each proposed new LCRIG or the amount of megawatt increase in the generating capacity of each existing LCRIG as listed by the Interconnection Customer in its Interconnection Request, whether studied individually or as a Group Study, to be deliverable to the aggregate of Load on the CAISO Controlled Grid under the Generation dispatch conditions studied without excessive curtailment. The methodology for the Off-Peak Deliverability Assessment will be published on the CAISO Website or, if applicable, included in a CAISO Business Practice Manual.

The CAISO will perform the Off-Peak Deliverability Assessment to identify Off-Peak Network Upgrades required for Generating Facilities to achieve Off-Peak Deliverability Status, and any such upgrades identified in the Off-Peak Deliverability Assessment as part of the Phase I Interconnection Study shall be estimated in accordance with Section 6.4. ~~The estimated costs of such upgrades identified in the assessment will be referred to as "off peak Deliverability transmission upgrades," the description of such upgrades in any report will be conceptual in nature, and such transmission upgrades will not be included as an Assigned Network Upgrade or Conditionally Assigned Network Upgrade within the applicable Interconnection Study report.~~

~~The cost of all transmission upgrades identified in the Off-Peak Deliverability Assessment performed during the course of the Phase I Interconnection Study shall be estimated in accordance with Section 6.4.~~ The Off-Peak Deliverability Assessment does not convey any right to deliver electricity to any specific customer or Delivery Point, nor guarantee any level of deliverability, or transmission capacity, or avoided curtailment.

The estimated costs of Local Off-Peak Network Upgrades identified in the Off-Peak Deliverability Assessment will be assigned or conditionally assigned to Interconnection Requests selecting Off-Peak Deliverability Status based on the flow impact of each such Generating Facility on the Off-Peak Network Upgrades as determined by the Generation distribution factor methodology set forth in the Off-Peak Deliverability Assessment methodology.

The estimated costs of Area Off-Peak Network Upgrades are for information only and not assigned to any Interconnection Requests.

\* \* \* \* \*

## Appendix FF

### **Article 1. Scope and Limitations of Agreement**

\* \* \* \* \*

#### 1.8 Reactive Power and Primary Frequency Response

\* \* \* \* \*

1.8.3 **Primary Frequency Response.** Interconnection Customer shall ensure the primary frequency response capability of its Small Generating Facility by installing, maintaining, and operating a functioning governor or equivalent controls. The term “functioning governor or equivalent controls” as used herein shall mean the required hardware and/or software that provides frequency responsive real power control with the ability to sense changes in system frequency and autonomously adjust the Small Generating Facility’s real power output in accordance with the droop and deadband parameters and in the direction needed to correct frequency deviations. Interconnection Customer is required to install a governor or equivalent controls with the capability of operating: (1) with a maximum 5 percent droop and  $\pm 0.036$  Hz deadband; or (2) in accordance with the relevant droop, deadband, and timely and sustained response settings from Applicable Reliability Standards providing for equivalent or more stringent parameters. The droop characteristic shall be: (1) based on the nameplate capacity of the Small Generating Facility, and shall be linear in the range of frequencies between 59 to 61 Hz that are outside of the deadband parameter; or (2) based on Applicable Reliability Standards providing for an equivalent or more stringent parameter. The deadband parameter shall be: the range of frequencies above and below nominal (60 Hz) in which the governor or equivalent controls is not expected to adjust the Small Generating Facility’s real power output in response to frequency deviations. The deadband shall be implemented: (1) without a step to the droop curve, that is, once the frequency deviation exceeds the deadband parameter, the expected change in the Small Generating Facility’s real power output in response to frequency deviations shall start from zero and then increase (for

under-frequency deviations) or decrease (for over-frequency deviations) linearly in proportion to the magnitude of the frequency deviation; or (2) in accordance with Applicable Reliability Standards providing for an equivalent or more stringent parameter. Interconnection Customer shall notify the CAISO that the primary frequency response capability of the Small Generating Facility has been tested and confirmed during commissioning. Once Interconnection Customer has synchronized the Small Generating Facility with the CAISO Controlled Grid, Interconnection Customer shall operate the Small Generating Facility consistent with the provisions specified in Sections 1.8.3.1 and 1.8.3.2 of this SGIA. The primary frequency response requirements contained herein shall apply to both synchronous and non-synchronous Small Generating Facilities.

\* \* \* \* \*

## Attachment 1

### Glossary of Terms

\* \* \* \* \*

**Network Upgrades** - Additions, modifications, and upgrades to the Participating TO's Transmission System required at or beyond the point at which the Small Generating Facility interconnects with the CAISO Controlled Grid to accommodate the interconnection of the Small Generating Facility with the CAISO Controlled Grid. Network Upgrades do not include Distribution Upgrades.

**Operational Control** - The rights of the CAISO under a Transmission Control Agreement and the CAISO Tariff to direct the parties to the Transmission Control Agreement how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting applicable reliability criteria.

\* \* \* \* \*

