



September 5, 2019

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

**Re: California Independent System Operator Corporation  
Docket No. ER19-\_\_\_\_-000**

**Filing to Comply with Order No. 831**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO)<sup>1</sup> submits this filing to comply with the requirements the Federal Energy Regulatory Commission (Commission) established in Order No. 831.<sup>2</sup>

Order No. 831 established (1) an offer cap structure requirement, (2) a verification requirement for cost-based incremental energy offers, (3) a resource neutrality requirement, and (4) requirements for virtual transactions and external transactions. This filing includes and explains the tariff provisions the CAISO proposes to implement to comply with these requirements. With regard to the verification requirement, the tariff revisions contained in this compliance filing build upon other revisions the CAISO recently proposed in a separate but related tariff amendment to implement the Commitment Cost and Default Energy Bid Enhancements (CCDEBE) stakeholder initiative (CCDEBE Tariff Amendment).<sup>3</sup> In the attachments to this compliance filing, the baseline tariff language is

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<sup>1</sup> Capitalized terms not otherwise defined in this transmittal letter have the meanings set forth in appendix A to the CAISO tariff. References in this transmittal letter to section numbers are references to sections of the CAISO tariff unless otherwise stated.

<sup>2</sup> *Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators*, Order No. 831, FERC Stats. & Regs. ¶ 31,387 (2016) (Order No. 831), *order on reh'g and clarification*, Order No. 831-A, 161 FERC ¶ 61,156 (2017) (Order No. 831-A). The Commission issued Order Nos. 830 and 831-A in Docket No. RM16-5-000. In this transmittal letter, references to Order No. 831 mean Order Nos. 831 and 831-A together, except where the CAISO is citing specific discussion in one or the other of those Orders.

<sup>3</sup> The CAISO submitted the CCDEBE Tariff Amendment on August 30, 2019 in Docket No. ER19-2727-000, pursuant to section 205 of the Federal Power Act (FPA), 16 U.S.C. § 824d.

primarily from the CCDEBE Tariff Amendment and the tariff revisions proposed in this compliance filing are in addition to, and on top of, that baseline tariff language.

The CAISO explained in the CCDEBE Tariff Amendment that it expects to implement the tariff revisions contained therein no later than December 11, 2019.<sup>4</sup> As a result, the CAISO anticipates that they will go into effect well before the requested effective date for the tariff revisions contained in this compliance filing.

The CAISO proposes to implement the tariff revisions in this compliance filing no later than December 31, 2020, and respectfully requests waiver of the Commission's notice requirement to permit that effective date. The CAISO requests authority to provide at least fourteen days' notice of the actual effective date to the Commission and market participants. The CAISO further requests that the Commission issue an order by September 1, 2020 finding that the CAISO has complied with the requirements of Order No. 831. Commission issuance of the order by September 1, 2020 will give the CAISO and market participants regulatory certainty and sufficient time to perform preparatory activities to implement the tariff revisions contained in this compliance filing as soon as the start of the CAISO's software implementation cycle for the fall of 2020, which may occur as early as October 1, 2020.

## **I. Background**

### **A. Order No. 831**

On November 17, 2016, the Commission issued Order No. 831, which revises the incremental energy offer caps in independent system operator (ISO) and regional transmission organization (RTO) markets.<sup>5</sup> The Commission directed each ISO and RTO to implement the requirements regarding (1) offer cap structure, (2) a verification process for cost-based incremental energy offers, (3) resource neutrality, and (4) virtual transactions and external transactions.<sup>6</sup>

On November 9, 2017, the Commission issued Order No. 831-A to address rehearing and clarification requests regarding Order No. 831.

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<sup>4</sup> Transmittal letter for CCDEBE Tariff Amendment at 2, 57.

<sup>5</sup> Order No. 831 at P 1 & n.1.

<sup>6</sup> These Order No. 831 requirements are also contained in section 35.28(g)(11) of the Commission's regulations, 18 C.F.R. § 35.28(g)(11). See *Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators, et al.*, Correcting Amendment, 165 FERC ¶ 61,136 (2018).

## 1. Offer Cap Structure Requirement

Order No. 831 obligates each ISO or RTO to cap a resource's incremental energy offer at the higher of \$1,000 per megawatt-hour (MWh) or the resource's cost-based incremental energy offer.<sup>7</sup> The Commission also required each ISO and RTO to limit cost-based incremental energy offers to a hard cap of \$2,000/MWh for purposes of calculating locational marginal prices (LMPs).<sup>8</sup> A hard cap means the upper limit on incremental energy offers that ISOs and RTOs can use to calculate LMPs. The hard cap does not limit cost-based incremental energy offers a market participant may submit to the ISO or RTO.<sup>9</sup>

Further, in Order No. 831-A, the Commission granted a request for clarification of Order No. 831 submitted by the New York Independent System Operator, Inc. (NYISO) that ISOs and RTOs are permitted to apply the same offer cap to both incremental energy and minimum generation offers.<sup>10</sup> The Commission clarified that applying the same offer cap (and verification requirement) adopted in Order No. 831 to both incremental energy offers and minimum generation offers is appropriate.<sup>11</sup>

## 2. Verification Requirement for Cost-Based Incremental Energy Offers

Order No. 831 requires each ISO or RTO or its market monitoring unit to verify the actual or expected costs underlying a resource's cost-based incremental energy offer above \$1,000/MWh before that offer can be used for purposes of calculating LMPs.<sup>12</sup> The Commission declined to prescribe the manner in which cost-based incremental energy offers above \$1,000/MWh must be verified.<sup>13</sup> However, the Commission directed each ISO or RTO to explain in its compliance filing what factors it or its market monitoring unit will consider in

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<sup>7</sup> Order No. 831 at PP 42, 78. The Commission defined an incremental energy offer as the portion of a resource's energy supply offer that varies with output or level of demand reduction (*id.* at P 1 n.1), and defined a resource as a supply resource, including a demand response resource, that offers incremental energy to an ISO/RTO energy market (*id.* at P 157).

<sup>8</sup> *Id.* at P 1 & n.3, PP 42, 78. The Commission stated that incremental energy offers below \$1,000/MWh are not impacted by the directives in Order No. 831. *Id.* at P 78.

<sup>9</sup> *Id.* at P 1 n.3.

<sup>10</sup> See Order No. 831-A at P 15.

<sup>11</sup> *Id.* at P 17. The Commission also recognized that the verification process for demand response resources will necessarily differ from the verification process for generation resources. Order No. 831 at P 158.

<sup>12</sup> *Id.* at PP 42, 140.

<sup>13</sup> *Id.* at P 208.

the verification process for cost-based incremental energy offers above \$1,000/MWh, whether such factors are currently considered in existing market power mitigation provisions, or whether new practices or tariff provisions are necessary given the verification requirement.<sup>14</sup> The Commission also stated that Order No. 831 did not affect incremental energy offers below \$1,000/MWh.<sup>15</sup>

The Commission directed that if a supplier submits an incremental energy offer above \$1,000/MWh, and the actual or expected costs underlying that offer cannot be verified before the market clearing process begins, that offer may not be used to calculate LMPs. However, a resource will be eligible for a make-whole payment (*i.e.*, an after-the-fact uplift payment) if that resource is dispatched and the RTO/ISO verifies the suppliers' actual costs after-the-fact. A resource will also be eligible for a make-whole payment if it is dispatched and its verified cost-based incremental energy offer exceeds \$2,000/MWh.<sup>16</sup> The Commission permitted regional variation in the process for treating incremental energy offers above \$1,000/MWh that cannot be verified prior to the start of the market clearing process.<sup>17</sup>

The Commission stated that the basis of the uplift payment is the difference between a given resource's energy market revenues and that resource's actual short-run marginal costs of the megawatts (MW) dispatched, as verified after-the-fact by the ISO or RTO or its market-monitoring unit.<sup>18</sup> A resource may not receive an after-the-fact uplift payment for incremental energy costs greater than the costs included in its cost-based incremental energy offer.<sup>19</sup>

The Commission also stated that if an ISO or RTO chooses to retain an existing adder above cost or proposes to include a new adder above cost in a cost-based incremental energy offer above \$1,000/MWh, the adder may not exceed \$100/MWh.<sup>20</sup> However, if a resource receives an uplift payment after-the-fact because a resource's cost-based offer could not be verified prior to the market clearing process or because its cost-based offer exceeds \$2,000/MWh, the uplift payment should not include any adders above costs.<sup>21</sup> Verifiable

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<sup>14</sup> *Id.* at P 141.

<sup>15</sup> *Id.* at P 142.

<sup>16</sup> *Id.* at PP 42, 145-46.

<sup>17</sup> *Id.* at P 147.

<sup>18</sup> *Id.* at P 146.

<sup>19</sup> Order No. 831-A at P 39.

<sup>20</sup> Order No. 831 at P 207.

<sup>21</sup> *Id.*

opportunity costs are part of a cost-based incremental energy offer and, thus, are not subject to the \$100/MWh limit on an adder above cost.<sup>22</sup>

### 3. Resource Neutrality Requirement

The resource neutrality requirement obligates each ISO or RTO to ensure that all resources are eligible to submit cost-based incremental energy offers in excess of \$1,000/MWh.<sup>23</sup>

The Commission explained that a resource means any supply resource, including a demand response resource, which offers incremental energy to ISO and RTO energy markets. Such a demand response resource is subject to the verification requirement if its cost-based incremental energy offer exceeds \$1,000/MWh. The offer may include opportunity costs.<sup>24</sup> However, Order No. 831 does not apply to a capacity-only demand response resource that does not submit incremental energy offers in energy markets.<sup>25</sup>

### 4. Requirements for Virtual Transactions and External Transactions

The Commission required each ISO and RTO to permit market participants to submit virtual transactions up to \$2,000/MWh,<sup>26</sup> and similarly required each ISO and RTO to permit external transactions (sometimes also called economic exchange transactions or import and export transactions) to offer up to \$2,000/MWh.<sup>27</sup> The Commission stated that Order No. 831 does not apply to coordinated transactions schedules or emergency purchases because such transactions are administratively priced rather than based on short-run marginal cost.<sup>28</sup>

The Commission declined to require virtual transactions and external transactions above \$1,000/MWh to be subject to the verification requirement.<sup>29</sup> However, the Commission stated that ISOs and RTOs could propose measures

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<sup>22</sup> Order No. 831-A at P 38.

<sup>23</sup> Order No. 831 at PP 42, 156.

<sup>24</sup> *Id.* at P 157. Opportunity costs are legitimate short-run marginal costs and not adders above cost. Order No. 831-A at P 38.

<sup>25</sup> Order No. 831 at P 159.

<sup>26</sup> *Id.* at P 172.

<sup>27</sup> *Id.* at P 192.

<sup>28</sup> *Id.* at P 198.

<sup>29</sup> *Id.* at PP 172, 192.

to address any concerns that arise from permitting virtual transactions up to \$2,000/MWh, or could propose measures to address issues regarding the absence of a verification requirement for external transactions, in a separate filing under section 205 of the FPA.<sup>30</sup>

More generally, the Commission stated that an ISO or RTO may file, pursuant to section 205 of the FPA, to propose modifications to shortage prices or other market elements that require revision in light of the offer cap reforms adopted in Order No. 831. However, the Commission did not require such modifications to comply with the Order.<sup>31</sup>

## **B. CAISO Tariff Provisions Relevant to Order No. 831**

The CAISO market processes include both day-ahead and real-time wholesale electricity markets.<sup>32</sup> The CAISO's market software system schedules and dispatches resources (*i.e.*, performs scheduling runs) and determines LMPs (*i.e.*, performs pricing runs) for those markets.<sup>33</sup>

The CAISO tariff prescribes rules for submitting bids and self-schedules of energy and ancillary services in the CAISO markets.<sup>34</sup> The CAISO market design allows suppliers to submit separate bid components for a resource's commitment costs<sup>35</sup> and for incremental energy above minimum load. Market participants can also engage in virtual bidding to speculate on price differences,

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<sup>30</sup> *Id.* at PP 176, 197.

<sup>31</sup> *Id.* at P 213. In issuing this guidance, one of the rulemaking comments the Commission was responding to was the CAISO's comment that it would face implementation challenges if it changed its current offer cap because the administrative penalty prices the CAISO uses in its market model to indicate that constraints have to be relaxed, such as the power balance constraint, are based on the offer cap. *Id.* at P 210.

<sup>32</sup> Existing tariff sections 31, *et seq.* and 34, *et seq.*; tariff appendix A, existing definition of "CAISO Markets Process". For the sake of clarity, this transmittal letter distinguishes between existing tariff provisions (*i.e.*, provisions in the current CAISO tariff), new tariff provisions (*i.e.*, new provisions that the CAISO proposes to add in the CCDEBE Tariff Amendment or in this compliance filing), revised tariff provisions (*i.e.*, existing tariff provisions that the CAISO proposes to revise in the CCDEBE Tariff Amendment or in this compliance filing), and deleted tariff provisions (*i.e.*, existing tariff provisions that the CAISO proposes to delete in the CCDEBE Tariff Amendment or in this compliance filing).

<sup>33</sup> See existing tariff sections 31.3 and 34.4.

<sup>34</sup> Existing tariff section 30, *et seq.*

<sup>35</sup> Commitment costs consist of the costs of starting up resources (start-up costs), the costs of running resources at their minimum operating levels (minimum load costs), and transition costs for resources (called multi-stage generating resources) that can operate in different configurations. See existing tariff section 30.4; tariff appendix A, existing definitions of "Multi-Stage Generating Resources", "Start-Up Cost", "Minimum Load Costs", and "Transition Cost".

hedge their physical market positions, and manage their exposure to differences between day-ahead and real-time prices.<sup>36</sup> The maximum energy bid price is \$1,000/MWh.<sup>37</sup>

Besides supplier-submitted energy bids, the CAISO market also uses cost-based default energy bids, which are mitigated bids for incremental energy above minimum load of resources subject to local market power mitigation.<sup>38</sup> To use the terminology of Order No. 831, default energy bids are cost-based incremental energy offers. When the CAISO market mitigates a resource's energy bid, the CAISO systems use the default energy bid. A default energy bid is used to determine a resource's mitigated bid prices<sup>39</sup> and to determine the resource's bid cost recovery compensation.<sup>40</sup> The CAISO market also uses default energy bids as part of several other settlement provisions.

Each supplier can choose one of three options as its preferred option for calculating default energy bids: (1) the variable cost option; (2) the negotiated rate option; or (3) the LMP option.<sup>41</sup> Further, a scheduling coordinator for a frequently mitigated unit has a fourth option for calculating default energy bids, the frequently mitigated unit option.<sup>42</sup> In a separate tariff amendment, the CAISO also recently proposed a specific type of default energy bid tailored for hydroelectric resources with storage capability.<sup>43</sup>

For a natural gas-fired resource subject to the variable cost option, the default energy bid is based on inputs that include the resource's fuel costs, which are calculated in part using natural gas price indices. For a non-natural gas-fired resource that is subject to the variable cost option, the default energy bid is

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<sup>36</sup> Existing tariff section 30.9.

<sup>37</sup> Existing tariff section 39.6.1.1. The tariff's definition of an energy bid includes virtual bids. Tariff appendix A, existing definition of "Energy Bid".

<sup>38</sup> Existing tariff section 39.7.1, *et seq.*

<sup>39</sup> The mitigated bid used is the greater of the resource's default energy bid and the competitive LMP at the resource's location. Existing tariff section 31.2.3.

<sup>40</sup> Existing tariff section 11.8, *et seq.*

<sup>41</sup> Existing tariff sections 39.7.1 through 39.7.1.3. The CAISO may also establish temporary default energy bids. Existing tariff section 39.7.1.5.

<sup>42</sup> Existing tariff section 39.7.1.4.

<sup>43</sup> See the tariff amendment the CAISO filed on July 2, 2019 in Docket No. ER19-2347-000 to enhance its local market power mitigation and reflect hydroelectric resource opportunity costs in default energy bids (LMPME Tariff Amendment). The LMPME Tariff Amendment is currently pending before the Commission. As explained in the CCDEBE Tariff Amendment, some of the proposals developed in the LMPME stakeholder process were included in the CCDEBE Tariff Amendment.

based on inputs that include the resource's fuel-equivalent costs.<sup>44</sup> Suppliers submit these values and remain static in the CAISO systems for use in each day's markets. Resources subject to the variable cost option also receive a 10 percent adder, which the Commission approved as an approximation of hard-to-quantify costs and that can be used to recover suppliers' incidental costs.<sup>45</sup> In addition, a frequently mitigated unit that is subject to the variable cost option may receive a bid adder that is either (i) a unit-specific value determined in consultation with the CAISO or (ii) a default bid adder of \$24/MWh.<sup>46</sup>

### **C. Timing of the CAISO's Filing to Comply with Order No. 831**

ISO and RTO filings to comply with Order No. 831 were due by May 8, 2017.<sup>47</sup> On May 1, 2017, the CAISO filed a motion for extension of time in Docket No. RM16-5-000 to allow it to file revisions to the CAISO tariff to comply with Order No. 831 by May 1, 2018. The CAISO explained that, unlike other ISOs and RTOs, it does not currently have a process to verify supplier costs prior to market clearing that it could build on to verify cost-based incremental energy offers. The CAISO stated that an extension would enable it to develop and implement provisions necessary to verify cost-based incremental energy offers over \$1,000/MWh through the ongoing CCDEBE stakeholder process, in which CAISO and its stakeholders were considering substantially similar issues. On May 11, 2017, the Commission granted the CAISO's motion.

The CAISO filed three subsequent motions for extension because it needed additional time to develop the proposals eventually included in the CCDEBE Tariff Amendment and new rules for establishing default energy bids for hydroelectric resources.<sup>48</sup> The Commission granted these motions, with the most recent order granting the CAISO an extension until August 30, 2019.

On August 30, 2019, the CAISO filed a motion for a modest extension of time to submit its filing to comply with Order No. 831 by September 5, 2019. Because the CAISO needed to rely on and refer to the CCDEBE Tariff Amendment in its Order No. 831 compliance filing, the CAISO had to submit the

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<sup>44</sup> Existing tariff section 39.7.1.1, *et seq.*

<sup>45</sup> *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at P 1045 (2006); *Nev. Power Co.*, 153 FERC ¶ 61,206, at P 55 (2015).

<sup>46</sup> Existing tariff sections 39.7.1.1 and 39.8.3.

<sup>47</sup> The Commission directed each ISO and RTO to submit its compliance filing within 75 days after the effective date of Order No. 831. Order No. 831 at P 220. Because Order No. 831 became effective on February 21, 2017 (see 81 Fed. Reg. 87,770 (Dec. 5, 2016)), the compliance filings were due by May 8, 2017.

<sup>48</sup> The latter was ultimately developed in the LMPME stakeholder process and included in the LMPME Tariff Amendment.



CCDEBE Tariff Amendment (which it did on August 30) and then submit the Order No. 831 compliance filing. This sequential submittal of the two filings will facilitate the Commission's review of the CAISO's Order No. 831 compliance filing and eliminate the need for duplication between the two filings.

#### **D. Stakeholder Processes**

The CCDEBE Tariff Amendment describes the stakeholder process to develop the tariff changes resulting from the underlying stakeholder initiative, which included the changes to comply with Order No. 831.<sup>49</sup> Stakeholders were given the opportunity to review and comment on the draft tariff changes to comply with Order No. 831, and no stakeholder argued that the CAISO's proposed tariff revisions fail to comply with the Order No. 831 requirements.

However, stakeholders expressed concern with two issues related to the CCDEBE tariff revisions. First, stakeholders expressed concern that the CAISO's proposal did not include any cost validation for import bids above \$1,000/MWh. In response, the CAISO initiated a stakeholder process to consider whether the CAISO should propose to verify import bids that exceed \$1,000/MWh. Second, the CAISO agree to reconsider its initial proposed pricing penalty factors that would increase to be recalibrated with the increased offer cap required by Order No. 831.

As discussed further below,<sup>50</sup> the CAISO will file any tariff changes resulting from these stakeholder processes in separate tariff amendments pursuant to section 205 of the FPA. The CAISO plans to complete the stakeholder processes by the third quarter of 2020, so it can submit any necessary tariff amendments to implement such tariff changes concurrent with its implementation of the Order No. 831 compliance filing.

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<sup>49</sup> See transmittal letter for CCDEBE Tariff Amendment at 13-14.

<sup>50</sup> See *infra* section II.D of this transmittal letter.

## II. CAISO Compliance with Order No. 831

### A. Compliance with the Offer Cap Structure Requirement

In Order No. 831, the Commission directed each ISO and RTO to cap a resource's energy offer at the higher of \$1,000/MWh or the resource's cost-based incremental energy offer.<sup>51</sup> To comply with this requirement, the CAISO proposes to revise its tariff to implement a two-tier cap structure: (1) a soft energy bid cap of \$1,000/MWh, which will apply to all energy bids except for virtual bids and bids for non-resource-specific system resources (*i.e.*, import bids that come from an external resource not identified by a specific resource and located outside of the CAISO balancing authority area);<sup>52</sup> and (2) a hard energy bid cap of \$2,000/MWh, which will apply to all energy bids.<sup>53</sup>

Under this structure, suppliers with resources subject to the soft energy bid cap may submit energy bids in excess of \$1,000/MWh by submitting a request to the CAISO to adjust the prices in a resource's default energy bid (*i.e.*, the resource's cost-based incremental energy offer).<sup>54</sup> Once the CAISO is able to validate and approve a requested change to a resource's default energy bid, then the supplier can submit an energy bid up to the price of the modified default energy bid. If the CAISO is not able to validate such a request, then the supplier's bid for the resource will be limited to the soft energy bid cap. However, the supplier will be permitted to submit a request for after-market cost recovery

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<sup>51</sup> Order No. 831 at PP 42, 78.

<sup>52</sup> Under the CAISO's current market design, resource-specific system resources are external resources that in some respects are treated like internal resources. For example, these resource may submit three-part bids (*i.e.*, start-up bids, minimum load bids, and bids for energy above minimum load). Existing tariff section 30.5.2.4. These resources are guaranteed recovery of these costs through the bid cost recovery process (see existing section 11.8, *et seq.*) and are subject to local market power mitigation (see existing tariff section 39.7, *et seq.*). Therefore, the CAISO can cost-verify offers for energy above minimum load for these resources as it does for internal resources.

<sup>53</sup> New tariff sections 30.7.12.1, 30.7.12.3, and 39.6.1.1.1 – 39.6.1.1.2 as proposed in this compliance filing; tariff appendix A, new definitions of "Soft Energy Bid Cap" and "Hard Energy Bid Cap" as proposed in this compliance filing. In this compliance filing, the CAISO also proposes to revise existing tariff sections 30.6.1.2.1(a), 30.6.1.2.2(a), and 34.10, and to revise the existing definitions in tariff appendix A of "CAISO IFM Curtailed Quantity" and "Scarcity Reserve Demand Curve Values", to reflect the addition of the new defined terms soft energy bid cap and hard energy bid cap.

<sup>54</sup> As discussed above, default energy bids are the CAISO's resource-specific cost-based mechanism for applying energy bid mitigation. The process for submitting a request to adjust the prices in a resource's default energy bid is set forth in new tariff section 30.11.2 as proposed in the CCDEBE Tariff Amendment and revised in this compliance filing.

for any difference between the soft energy bid cap and its actual fuel costs or fuel-equivalent costs.<sup>55</sup>

To comply with the requirement that each ISO and RTO limit cost-based incremental energy offers to a hard cap of \$2,000/MWh for purposes of calculating LMPs,<sup>56</sup> the CAISO proposes to define the hard energy bid cap as \$2,000/MWh. As with the soft energy bid cap, suppliers will be permitted to submit requests for after-market cost recovery to the extent their actual fuel or fuel-equivalent costs exceed \$2,000/MWh. Because the CAISO will enforce the hard energy bid cap in its market processes, energy bids used by the market will be limited to no more than \$2,000/MWh, with any costs above this amount limited to after-market verification and recovery pursuant to the tariff changes proposed in the CCDEBE Tariff Amendment and revised in this compliance filing.

This approach is comparable to those approved by the Commission in the context of other ISOs' and RTOs' Order No. 831 compliance filings. For instance, the Midcontinent Independent System Operator, Inc. (MISO) proposed to revise its tariff to reflect an "energy offer soft cap" of \$1,000/MWh and an "energy offer hard cap" of \$2,000/MWh. Similar to the CAISO's approach, the MISO also proposed to allow suppliers to bid above the \$1,000/MWh soft cap through requested adjustments to the reference levels that it utilizes for purposes of implementing its market power mitigation provisions, with offers above the \$2,000/MWh hard cap permitted for purposes of after-the-fact uplift if verified.<sup>57</sup> The Commission accepted the MISO's offer-cap structure,<sup>58</sup> as well as similar

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<sup>55</sup> See new tariff sections 30.11, et seq. and 30.12, et seq. as proposed in the CCDEBE Tariff Amendment and revised in this compliance filing. The CAISO describes these new tariff provisions in more detail below in section II.B of this transmittal letter.

<sup>56</sup> Order No. 831 at P 1 & n.3, PP 42, 78.

<sup>57</sup> *Midcontinent Indep. Sys. Operator, Inc.*, 162 FERC ¶ 61,270, at P 9 (2018). In its initial Order No. 831 compliance filing, the MISO did not permit bids above the \$2,000/MWh hard cap. The Commission found the MISO's proposal deficient in this regard. *Id.* at P 11. On further compliance, the MISO submitted revised tariff changes permitting resources to submit offers above \$2,000/MWh, with such offers ineligible to set the market clearing price but subject to consideration for after-the-fact cost recovery. The Commission generally accepted these revisions, with the exception of certain provisions regarding fast-start resources. *Id.* at PP 44-45.

<sup>58</sup> *Id.* at P 44.

offer-cap structures for the NYISO,<sup>59</sup> ISO New England Inc.,<sup>60</sup> Southwest Power Pool, Inc.,<sup>61</sup> and PJM Interconnection, L.L.C.<sup>62</sup>

Further, the CAISO proposes to establish a minimum load cost hard cap of \$2,000/MWh that represents the maximum minimum load cost used in the CAISO markets.<sup>63</sup> This minimum load cost hard cap accords with the Commission's clarification that it is appropriate for ISOs and RTOs to apply the same offer cap adopted in Order No. 831 to both incremental energy and minimum generation offers.<sup>64</sup>

## **B. Compliance with the Verification Requirement for Cost-Based Incremental Energy Offers**

In Order No. 831, the Commission expressly declined to prescribe the manner in which cost-based incremental energy offers above \$1,000/MWh must be verified.<sup>65</sup> Although each ISO and RTO must satisfy the Commission's directives regarding the verification requirement, the Commission provided significant latitude to the ISOs and RTOs regarding their means of complying with those directives. As explained below, the tariff revisions proposed in this filing, which build upon the tariff revisions contained in the CCDEBE Tariff Amendment, comply with the verification requirement. This is true both in terms of providing for verification before the relevant CAISO market process begins and after-the-fact verification for those costs that cannot be verified prior to the applicable market run, or that exceed the \$2,000/MWh hard energy bid cap.

The CAISO explained in the CCDEBE Tariff Amendment that it expects to implement the tariff revisions contained therein no later than December 11, 2019.<sup>66</sup> As a result, the CAISO anticipates that they will go in effect well before

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<sup>59</sup> *N.Y. Indep. Sys. Operator, Inc.*, 161 FERC ¶ 61,151, at PP 16, 19-21 (2017).

<sup>60</sup> *ISO New Eng. Inc.*, Commission Letter Order, Docket No. ER17-1565-000 (Nov. 9, 2017).

<sup>61</sup> *Sw. Power Pool, Inc.*, 161 FERC ¶ 61,154, at PP 19-20 (2017).

<sup>62</sup> *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,153, at PP 16-17 (2017).

<sup>63</sup> New tariff sections 30.4.4.6 and 39.6.1.1.3 as proposed in this compliance filing; existing tariff section 39.6.1.6 as revised in this compliance filing; tariff appendix A, new definition of "Minimum Load Cost Hard Cap" as proposed in this compliance filing. The CAISO will calculate the minimum load cost hard cap by dividing a resource's minimum load cost by its minimum load. Where a resource's minimum load is less than 1 MW, the CAISO will set its minimum load at 1 MW for the purpose of this calculation. *Id.*

<sup>64</sup> Order No. 831-A at PP 15, 17.

<sup>65</sup> Order No. 831 at P 208.

<sup>66</sup> Transmittal letter for CCDEBE Tariff Amendment at 2, 57.

the effective date of no later than December 1, 2020 that the CAISO requests for the tariff revisions contained in this compliance filing.

### 1. Cost Verification Prior to the CAISO Market Process

Order No. 831 required that the actual or expected costs underlying a resource's cost-based incremental energy offer above \$1,000/MWh be verified before the offer can be used for purposes of calculating LMPs.<sup>67</sup> The Commission noted its expectation that an ISO/RTO would build on its existing mitigation processes to calculate or update cost-based incremental offers, but recognizing the complexities involved, directed the ISOs and RTOs to explain in their compliance filings what factors they will consider in the verification process and "whether such factors are currently considered in existing market power mitigation provisions or whether new practices or tariff provisions are necessary."<sup>68</sup>

The CAISO currently has no process to verify supplier costs prior to the market. However, the CAISO and stakeholders developed such a cost verification in the process stakeholder initiative that resulted in the CCDEBE Tariff Amendment and this compliance filing. The CAISO submitted the CCDEBE Tariff Amendment to implement the cost verification process before the tariff revisions contained in this compliance filing go into effect. The CAISO describes that process, including the factors that the CAISO will consider in evaluating offers above the \$1,000/MWh soft energy bid cap, herein.

The cost verification process proposed in the CCDEBE Tariff Amendment builds upon the CAISO's existing process for calculating default energy bids and resource commitment cost bid caps (e.g., bid caps for start-up, minimum load, and multi-stage generator transition costs). Specifically, the CCDEBE Tariff Amendment revisions specified a process for the CAISO to adjust reference levels, which are defined as default start-up bids, default minimum load bids, and default energy bids calculated by the CAISO, upon a supplier's request prior to the CAISO market process.<sup>69</sup> Under the tariff process, a supplier that intends to submit an energy bid above the soft energy bid cap (*i.e.*, \$1,000/MWh) must submit a reference level change request based on a resource's actual or

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<sup>67</sup> Order No. 831 at PP 42, 140.

<sup>68</sup> *Id.* at P 141.

<sup>69</sup> New tariff sections 30.4.3 and 30.11, *et seq.* as proposed in the CCDEBE Tariff Amendment; tariff appendix A, new definition of "Reference Levels" as proposed in the CCDEBE Tariff Amendment. In the CCDEBE Tariff Amendment, the CAISO does not propose a process to directly revise transition cost bid caps because they are established using start-up cost reference levels, which suppliers can request to be revised.

expected fuel or fuel-equivalent costs.<sup>70</sup> Thus, suppliers can request adjustments regardless of whether resources have fuel costs (e.g., natural gas-fired resources) or fuel-equivalent costs (e.g., demand response resources).

In this compliance filing, the CAISO proposes to add new language to the tariff provisions regarding reference level change requests that the CAISO submitted in the CCDEBE Tariff Amendment to specify that a supplier whose default energy bid does not exceed the \$1,000/MWh soft energy bid cap and that intends to submit an energy bid that exceeds that bid cap must submit a reference level change request.<sup>71</sup> The CAISO will further verify energy bids in excess of the soft energy bid cap pursuant to the applicable validation rules set forth in the tariff.<sup>72</sup> *Inter alia*, the validation rules will require that if a supplier submits an energy bid price that exceeds the soft energy bid cap, the CAISO will modify the energy bid price for purposes of clearing the relevant CAISO market process to the higher of the soft energy bid cap or the resource's default energy bid as modified pursuant to a reference level change request.<sup>73</sup>

As described in the CCDEBE Tariff Amendment, to increase the flexibility for suppliers, and to maximize the opportunity to reflect cost changes in its market processes and outcomes, the CAISO proposes two alternative paths for submitting and evaluating reference level adjustments: an automated process and a manual process. Under the automated process, the supplier can request an adjustment and the CAISO market systems will compare the proposed adjusted reference level with a resource-specific reasonableness threshold calculated by the CAISO that represents a reasonable difference between a suppliers actual or expected costs for a resource and the CAISO-calculated costs.<sup>74</sup> If the cost submitted in the reference level change request is equal to or less than the applicable reasonableness threshold for the resource, the CAISO systems will approve the revised reference level. If, the cost submitted in the reference level change request exceeds the applicable reasonableness threshold

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<sup>70</sup> New tariff sections 30.11.2.1 – 30.11.2.2 as proposed in the CCDEBE Tariff Amendment.

<sup>71</sup> New tariff section 30.11.2.3 as proposed in this compliance filing.

<sup>72</sup> *Id.* (citing existing tariff section 30.7 as revised by the CCDEBE Tariff Amendment and this compliance filing).

<sup>73</sup> New tariff section 30.7.12.2 as proposed in this compliance filing. In this compliance filing, the CAISO also proposes to revise existing tariff section 11.5.6.2.5.2, which addresses the allocation of exceptional dispatch costs to scheduling coordinators, to reference the new validation rules proposed in this compliance filing and the process for adjusting reference levels prior to the CAISO market process proposed in the CCDEBE Tariff Amendment and revised in this compliance filing.

<sup>74</sup> New tariff sections 30.11.1 – 30.11.1.1 and 30.11.3.1 as proposed in the CCDEBE Tariff Amendment; tariff appendix A, new definition of “Reasonableness Threshold” as proposed in the CCDEBE Tariff Amendment.

for the resource, the CAISO will set the revised reference level to equal the resource's reasonableness threshold.<sup>75</sup>

In this compliance filing, the CAISO proposes to add new language to the tariff provisions regarding the reasonableness threshold to specify that, for resources for which the CAISO does not calculate default energy bids, the CAISO will set the reasonableness threshold at the \$1,000/MWh soft energy bid cap.<sup>76</sup> Further, the reasonableness threshold for default energy bid or default minimum load bid adjustments will not exceed the \$2,000/MWh hard energy bid cap or the \$2,000/MWh minimum load cost hard cap, respectively.<sup>77</sup>

Subject to these specified bid cap limits on the reasonableness thresholds, the CAISO market systems will calculate the reasonableness thresholds pursuant to the process set forth in the CCDEBE Tariff Amendment. Specifically, the market systems will calculate each reasonableness threshold by increasing the fuel price component of a resource's reference level by fixed percentages so the reasonableness threshold accounts for differences between a supplier's actual or expected costs for a specific resource and the gas prices that the CAISO market systems would otherwise use. For a natural gas-fired resource, the reasonableness threshold will equal the proxy cost-based default start-up bid, proxy cost-based default minimum load bid cost, or variable cost-based default energy bid calculated for the specific resource, with the natural gas commodity price component of the calculation multiplied by 125 percent for Mondays and other weekdays after holidays (*i.e.*, days for which there is not a published same-day natural gas price index) or 110 percent for all other days.<sup>78</sup> The CAISO proposes the higher (25 percent) scalar for Mondays and other weekdays after holidays because those are the days on which actual gas purchase prices frequently exceed the published gas index price because of the longer time between the day gas is traded and the electric system operating day. For a non-natural gas-fired resource, the reasonableness threshold will equal the proxy-based default start-up bid, proxy-based default minimum load bid, or variable cost-based default energy bid, with the fuel or fuel-equivalent cost

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<sup>75</sup> New tariff section 30.11.3.3 as proposed in the CCDEBE Tariff Amendment.

<sup>76</sup> New tariff section 30.11.1.1 as proposed in the CCDEBE Tariff Amendment and revised in this compliance filing.

<sup>77</sup> *Id.* In addition, default energy bids used for purposes other than for calculating reasonableness thresholds will be subject to the soft energy bid cap, unless the CAISO has approved a reference level change request in support of an energy bid above the soft energy bid cap. Existing tariff section 39.7.1 as revised in this compliance filing.

<sup>78</sup> New tariff section 30.11.1.2.1 as proposed in the CCDEBE Tariff Amendment.

component of the calculation being multiplied by 110 percent (*i.e.*, a 10 percent scalar).<sup>79</sup>

Pursuant to the tariff revisions contained in in the CCDEBE Tariff Amendment, the CAISO may update the reasonableness thresholds under the automated process in the real-time market for all resources within the applicable fuel regions, if the same-day gas prices are greater than 10 percent more than with the gas price index previously used to calculate the reasonableness thresholds.<sup>80</sup> The CAISO may also adjust the reasonableness threshold for a specific resource if its actual fuel or fuel-equivalent costs, as observed by the CAISO after the CAISO market process, are systematically greater than the gas price indices or fuel-equivalent costs the CAISO used to calculate the resource's corresponding reference levels.<sup>81</sup> In no event will be the reasonableness threshold be lower than the default commitment cost bid or default energy bid that was in place prior to the reference level change request.<sup>82</sup>

Although suppliers will not need to submit cost documentation supporting automatic adjustment requests, they must retain supporting documentation, and the CAISO can request and audit this information.<sup>83</sup> This will allow the CAISO to confirm that the proposed adjustments are appropriate based on the supplier's actual or expected costs, especially regarding frequently submitted and approved adjustments. The necessary supporting documentation is contemporaneous documentation demonstrating the price of fuel associated with a reference level change request is based on actual or expected costs. Such documentation can include timely quotes from natural gas suppliers, gas purchase invoices, evidence of a bid price that was part of an unsuccessful good-faith effort to purchase fuel, or other appropriate documentation showing fuel or fuel-equivalent costs that reflect current gas prices.<sup>84</sup>

In addition to this automated process, the CCDEBE filing proposes to allow a supplier to request a manual reference level change request when a resource's actual expected fuel or fuel-equivalent cost exceeds the fuel or fuel-equivalent cost the CAISO used to calculate the resource's reference level by the

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<sup>79</sup> New tariff section 30.11.1.2.2 as proposed in the CCDEBE Tariff Amendment.

<sup>80</sup> New tariff section 30.11.1.3 as proposed in the CCDEBE Tariff Amendment. See also new tariff section 30.11.6 as proposed in the CCDEBE Tariff Amendment (setting forth verification rules applicable to hydro default energy bids).

<sup>81</sup> New tariff section 30.11.1.4 as proposed in the CCDEBE Tariff Amendment.

<sup>82</sup> New tariff section 30.11.1.1 as proposed in the CCDEBE Tariff Amendment.

<sup>83</sup> New tariff section 30.11.3.2 as proposed in the CCDEBE Tariff Amendment.

<sup>84</sup> Tariff appendix A, new definition of "Documentation of Contemporaneously Available Information" as proposed in the CCDEBE Tariff Amendment.



higher of 10 percent or \$0.50 per million British Thermal Units (MMBTU). Such requests must be submitted by no later than 8:00 a.m. of the day on which the applicable CAISO market run occurs. As with a request under the automated process, a supplier must have necessary supporting documentation demonstrating the basis for the reference level change. However, unlike an automated request, such documentation must accompany a manual request. The CAISO will review the documentation and, if sufficiently supported, implement the reference level change.<sup>85</sup>

If the CAISO approves an automated or manual reference level change request for the day-ahead market, the revised reference level will apply to all hours of the day-ahead market running that day. If the CAISO approves a reference level change for the real-time market, the revised reference level will apply from the first hour for which it is practicable for the CAISO to apply the change until the end of the day, unless the CAISO approves a subsequent reference level change request.<sup>86</sup> As described below, a supplier may submit an application for an after-the-fact adjustment and make-whole payment for any amounts not approved in the automated or manual reference level adjustment processes.<sup>87</sup>

## 2. After-Market Make-Whole Payments

Order No. 831 directed that if a resource submits an incremental energy offer above \$1,000/MWh and the actual or expected costs underlying that offer cannot be verified before the applicable market, the offer may not be used to calculate LMPs, but the supplier would be eligible for a make-whole payment if the resource is dispatched and the resource's actual costs above \$1,000/MWh are verified after-the-fact. Further, a supplier would be eligible for a make-whole payment if the CAISO market dispatches a resource and its verified cost-based incremental energy offer exceeds \$2,000/MWh.<sup>88</sup>

Consistent these directives, the CAISO proposes tariff revisions in the CCDEBE Tariff Amendment to allow a supplier to request additional payment for a resource's actual fuel costs or fuel-equivalent costs in specified circumstances following the CAISO market process.<sup>89</sup> To be eligible for such an additional uplift

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<sup>85</sup> New tariff section 30.11.4, *et seq.* as proposed in the CCDEBE Tariff Amendment.

<sup>86</sup> New tariff section 30.11.5 as proposed in the CCDEBE Tariff Amendment.

<sup>87</sup> *Id.*

<sup>88</sup> Order No. 831 at PP 42, 145-46.

<sup>89</sup> New tariff section 30.12, *et seq.* as proposed in the CCDEBE Tariff Amendment. These tariff revisions will supersede the existing tariff provisions allowing after-the-fact recovery of commitment-related fuel costs and marginal fuel-related costs, so the CAISO proposes to delete those existing tariff provisions in the CCDEBE Tariff Amendment. Existing tariff sections 30.11,

(i.e., make-whole) payment, the actual fuel or fuel-equivalent costs must be associated with either (a) amounts that were not approved as part of a reference level request, and therefore not reflected in a resource's energy bid in one or more market runs;<sup>90</sup> or (b) amounts that exceed the \$2,000/MWh hard energy bid cap or \$2,000/MWh minimum load cost hard cap proposed in this compliance filing.<sup>91</sup>

Pursuant to the CCDEBE Tariff Amendment, a supplier may (1) request that the CAISO evaluate the costs or (2) submit a filing to the Commission to seek cost recovery. The supplier's request or filing must satisfy specified documentation requirements.<sup>92</sup> The proposed tariff provisions specify the timeline for submitting a filing to the Commission, and the documentation requirements resemble the existing tariff provisions allowing after-the-fact recovery of commitment-related fuel costs and marginal fuel-related costs, which the Commission previously accepted and the CAISO proposes to delete in the CCDEBE Tariff Amendment.<sup>93</sup>

If a supplier requests that the CAISO evaluate the costs, the CAISO will verify whether that the submitted costs represent actually incurred fuel or fuel-equivalent costs as opposed to their expected fuel or fuel-equivalent costs that are permissible in the *ex ante* validation process, and the costs are reasonable and reflect prudent procurement practices.<sup>94</sup> If the CAISO verifies the costs and they have not already been recovered through the bid cost recovery process, the resource will receive them through a bid cost recovery uplift payment.<sup>95</sup> If the supplier instead chooses to submit a filing to the Commission, the CAISO will pay the supplier if the Commission authorizes cost recovery.<sup>96</sup>

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30.12, *et seq.*, 39.7.1.7, and 40.6.8.1.6 as proposed for deletion in the CCDEBE Tariff Amendment.

<sup>90</sup> New tariff section 30.12.1 as proposed in the CCDEBE Tariff Amendment.

<sup>91</sup> New tariff sections 30.7.12.4 and 30.12.1(b) as proposed in this compliance filing. In this compliance filing, the CAISO also proposes to designate item (a) discussed above as new tariff section 30.12.1(a).

<sup>92</sup> New tariff sections 30.14.2 – 30.14.6 as proposed in the CCDEBE Tariff Amendment.

<sup>93</sup> *Compare* new tariff sections 30.12.2 – 30.12.5 as proposed in the CCDEBE Tariff Amendment *with* existing tariff sections 30.11 and 30.12.2 – 30.12.3; *see also* transmittal letter for CCDEBE Tariff Amendment at 9, 11-12, and 45 (discussing the Aliso Canyon proceedings and the proposed deletion of the existing tariff provisions).

<sup>94</sup> New tariff section 30.12.4.2 as proposed in the CCDEBE Tariff Amendment.

<sup>95</sup> New tariff section 30.12.4.3 as proposed in the CCDEBE Tariff Amendment.

<sup>96</sup> New tariff section 30.12.5.2 as proposed in the CCDEBE Tariff Amendment. This provision is similar to the payment provisions in existing tariff sections 30.11 and 30.12.4.

### 3. Adders Above Cost

Order No. 831 directed that if an ISO or RTO retains an existing above-cost adder or proposes a new above-cost adder in a cost-based incremental energy bid above \$1,000/MWh, the adder may not exceed \$100/MWh.<sup>97</sup> To comply with this requirement, the CAISO proposes in this compliance filing to revise its tariff to state that for any default energy bids calculated under the variable cost option that exceed \$1,000/MWh because of an approved reference level change request, any 10 percent adder or frequently mitigated unit adder will not exceed \$100/MWh.<sup>98</sup>

#### C. Compliance with the Resource Neutrality Requirement

The tariff revisions proposed in the instant filing comply with the resource neutrality requirement set forth in Order No. 831 that an ISO or RTO ensure all resources are eligible to submit cost-based incremental energy offers in excess of \$1,000/MWh.<sup>99</sup> Pursuant to these tariff revisions, suppliers with resources subject to the soft energy bid cap may submit energy bids in excess of \$1,000/MWh by submitting a request to the CAISO to adjust the prices in a resource's default energy bid (*i.e.*, the resource's cost-based incremental energy offer).<sup>100</sup> Further, virtual bids and bids for non-resource-specific system resources are not subject to the soft energy bid cap.<sup>101</sup> Therefore, suppliers will be eligible to submit those types of bids in excess of \$1,000/MWh.

As required by Order No. 831,<sup>102</sup> these same tariff provisions apply to demand response resources with proposed cost-based energy bids but not to capacity-only demand response resources. Consequently, as required by Order No. 831,<sup>103</sup> a demand response resource will be subject to verification if its proposed cost-based energy bid exceeds \$1,000/MWh. As contemplated in Order No. 831,<sup>104</sup> demand response resources may include opportunity costs in their proposed cost-based energy bids.

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<sup>97</sup> Order No. 831 at P 207.

<sup>98</sup> Existing tariff section 39.7.1.1 as revised in this compliance filing.

<sup>99</sup> Order No. 831 at PP 42, 156.

<sup>100</sup> New tariff section 39.6.1.1.1 as proposed in this compliance filing; tariff appendix A, new definition of "Soft Energy Bid Cap" as proposed in this compliance filing.

<sup>101</sup> *Id.*

<sup>102</sup> Order No. 831 at PP 157, 159

<sup>103</sup> *Id.* at P 157.

<sup>104</sup> *Id.* The Commission explained that opportunity costs are legitimate short-run marginal costs and not adders above cost. Order No. 831-A at P 38.

Similar to all other resources, the CAISO will allow demand response and storage resources to submit reference level change requests to trigger verification of any bids submitted above \$1,000/MWh. However, the CAISO does not currently calculate default energy bids for such resources because they are not subject to local market power mitigation. Therefore, the CAISO cannot verify the resource's costs through the automated reference level change request process proposed in the CCDEBE Tariff Amendment. However, such resources can submit manual reference level change requests for offers that exceed \$1,000/MWh, and if the CAISO cannot verify their costs prior to clearing the applicable CAISO market, such resources can request after-the-fact recovery. This is consistent with Order No. 831, which contemplated that the verification process for demand response resources will necessarily differ from the verification of generation resources.<sup>105</sup>

#### **D. Compliance with the Requirements for Virtual Transactions and External Transactions**

As required by Order No. 831,<sup>106</sup> the CAISO proposes in this compliance filing to revise its tariff to cap virtual transactions and imports, which the CAISO calls energy bids for non-resource-specific system resources, at \$2,000/MWh.<sup>107</sup>

However, in response to stakeholder concerns, the CAISO is conducting a stakeholder process to consider making a filing pursuant to section 205 of the FPA to address any concerns that arise from permitting external transactions up to \$2,000/MWh or from the absence of a verification requirement for external transactions. The Commission stated in Order No. 831 that an ISO or RTO could make such a proposal in a separate section 205 filing, but that it was not required by Order No. 831.<sup>108</sup>

The Commission also stated more generally that an ISO or RTO may file, pursuant to section 205 of the FPA, to propose modifications to any market elements that require revision in light of the offer cap reforms adopted in Order No. 831.<sup>109</sup> In the stakeholder process leading up to the filing of the CCDEBE Tariff Amendment, the CAISO proposed to increase the CAISO market's power balance constraint relaxation prices to be consistent with the \$2,000/MWh hard energy bid cap. Stakeholders raised concerns that the proposed parameters may trigger unnecessary high prices in the CAISO markets, including the Energy

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<sup>105</sup> Order No. 831 at P 158.

<sup>106</sup> *Id.* at PP 172, 192.

<sup>107</sup> New tariff section 30.7.12.5 as proposed in this compliance filing.

<sup>108</sup> Order No. 831 at P 197.

<sup>109</sup> *Id.* at P 213.

Imbalance Market. The CAISO plans to conduct another stakeholder process to address this issue and, pursuant to the Commission's general guidance, to submit a separate tariff amendment pursuant to Section 205 of the FPA to make any changes to the administratively set penalty parameters listed in the CAISO tariff.

The CAISO plans to complete these two stakeholder processes by the third quarter of 2020, so that it may file any tariff changes in time to implement them concurrent with its implementation of the revisions contained in this Order No. 831 compliance filing.

### **III. Effective Date, Request for Waiver of Notice Requirement, and Request for Timely Commission Order**

The CAISO proposes to implement the tariff revisions contained in this compliance filing no later than December 31, 2020. The CAISO requests authority to provide at least fourteen days' notice of the actual effective date to the Commission and market participants.<sup>110</sup> The CAISO respectfully requests waiver of the Commission's notice requirement to permit this effective date.<sup>111</sup>

The CAISO further requests that the Commission issue an order by September 1, 2020, finding that between this compliance filing and the verification process set forth in the CCDEBE Tariff Amendment, the CAISO has complied with the requirements of Order No. 831. The CAISO's yearly target date for software implementation in October 1. The CAISO intends to implement the tariff revisions to comply with Order No. 831 as part of its fall implementation cycle in 2020, which can start as early as October 1, 2020. Commission issuance of an order by September 1, 2020 will give the CAISO and market participants regulatory certainty and sufficient time to perform preparatory activities to implement the tariff revisions contained in this compliance filing as soon as October 1, 2020, but in any event no later than December 31, 2020.

For these reasons, good cause exists to issue an order by September 1, 2020 finding that the CAISO is in compliance with Order No. 831 and approving the CAISO's requested effective date for the tariff revisions contained in this compliance filing.

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<sup>110</sup> The CAISO has included an effective date of 12/31/9998 as part of the tariff records submitted with this filing. The CAISO will make a filing pursuant to Commission Filing Code 150 to provide notice of the actual effective date of these tariff records at least fourteen days prior to implementation.

<sup>111</sup> Specifically, pursuant to section 35.11 of the Commission's regulations (18 C.F.R. § 35.11), the CAISO respectfully requests waiver of the 120-day notice requirement set forth in section 35.3(a)(1) of the Commission's regulations (18 C.F.R. § 35.3(a)(1)) to permit the requested effective date.

#### **IV. Communications**

Pursuant to the Commission's regulations,<sup>112</sup> the CAISO requests that all correspondence, pleadings, and other communications concerning this filing be served upon:

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#### **V. Service**

The CAISO has served copies of this filing on the California Public Utilities Commission, the California Energy Commission, all parties with Scheduling Coordinator Agreements under the CAISO tariff, and all parties in the proceeding on the CCDEBE Tariff Amendment (Docket No. ER19-2727). In addition, the CAISO has posted a copy of the filing on the CAISO website.

#### **VI. Contents of Filing**

Besides this transmittal letter, this filing includes the following attachments:

- |              |  |
|--------------|--|
| Attachment A | Clean CAISO tariff sheets incorporating this compliance filing     |
| Attachment B | Red-lined document showing the revisions in this compliance filing |

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<sup>112</sup> 18 C.F.R. § 385.203(b)(3).

**VII. Conclusion**

For the foregoing reasons, the CAISO respectfully requests that the Commission issue an order by September 1, 2020 that (1) finds that the CAISO has complied with the requirements of Order No. 831 and (2) grants an effective date for the tariff revisions contained in this compliance filing of no later than December 31, 2020.

Respectfully submitted,

/s/ Anna A. McKenna

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**Attachment A – Clean Tariff**

**Filing to Comply with Order No. 831**

**California Independent System Operator Corporation**



**\* Note: Language that is shaded in gray is pending in the CCDEBE tariff amendment \***

#### **11.5.6.2.5.2 Allocation of Exceptional Dispatch Costs to Scheduling Coordinators**

Excess Cost Payments for the Exceptional Dispatches used for emergency conditions and to avoid Market Disruption and System Emergencies as determined pursuant to Section 11.5.6.1.1 shall be charged to Scheduling Coordinators as follows in a two-step process. First, each Scheduling Coordinator's charge shall be the lesser of:

- (i) the pro rata share of total Excess Cost Payment based upon the ratio of each Scheduling Coordinator's Net Negative Uninstructed Deviations to the total system Net Negative Uninstructed Deviations; or
- (ii) the amount obtained by multiplying the Scheduling Coordinator's Net Negative Uninstructed Deviation for each Settlement Interval and a weighted average price. The weighted average price is equal to the total Excess Cost Payments to be allocated divided by the MWh of FMM Exceptional Dispatch Energy or RTD Exceptional Dispatch Energy associated with the Excess Cost Payment.

Second, any remaining unallocated costs shall be allocated to all Scheduling Coordinators pro-rata based on their Measured Demand. For a Scheduling Coordinator of an MSS Operator that has elected to follow Load, allocation of this second category of Excess Cost Payments will be based on net metered MSS Demand. In addition, to the extent the Exceptional Dispatches are made to resolve congestion internal to the MSS, the Scheduling Coordinator for such an MSS will also be subject to these two categories of Excess Cost Payments.

A Scheduling Coordinator shall be exempt from the first category of the Excess Cost Payment allocation for a Settlement Interval if the Scheduling Coordinator has sufficient incremental Energy Bids that are from physically available resources in the Real-Time Market for Energy to cover its Net Negative Uninstructed Deviation in the given Settlement Interval and that have been approved by the CAISO consistent with Sections 30.7.12 and 30.11.

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**30.4.4.5 Resources with Greenhouse Gas Compliance Obligations**

For each resource registered with the California Air Resources Board as having a greenhouse gas compliance obligation, the information provided to the CAISO by the Scheduling Coordinator must be consistent with the information submitted to the California Air Resources Board.

**30.4.4.6 Maximum Default Minimum Load Bid**

In no case shall a Default Minimum Load Bid exceed the Minimum Load Cost Hard Cap.

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**30.6.2.1.2.1 Marginal Real-Time Dispatch Option**

A Reliability Demand Response Resource that is subject to the Marginal Real-Time Dispatch Option:

- (a) May submit either a single-segment Bid or a multi-segment bid in the Real-Time Market that must be at least ninety-five percent (95%) of the applicable Soft Energy Bid Cap.
- (b) Shall be dispatched as a marginal resource if it is dispatched by the CAISO.

**30.6.2.1.2.2 Discrete Real-Time Dispatch Option**

A Reliability Demand Response Resource that is subject to the Discrete Real-Time Dispatch Option:

- (a) May submit only a single-segment Bid in the Real-Time Market that must be at least ninety-five percent (95%) of the applicable Soft Energy Bid Cap.
- (b) Shall be dispatched as a discrete (non-marginal) resource if it is dispatched by the CAISO.

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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.

**30.7.12.2 Energy Bids that Exceed the Soft Energy Bid Cap**

In addition to all other Bid validation rules that apply to Energy Bids, if a Scheduling Coordinator submits an Energy Bid price that exceeds the Soft Energy Bid Cap, the CAISO will modify the Energy Bid price for purposes of clearing the relevant CAISO Market Process to the higher of the Soft Energy Bid Cap or the resource's Default Energy Bid as modified pursuant to a Reference Level Change Request pursuant to Section 30.11.

**30.7.12.3 Energy Bids that Exceed the Hard Energy Bid Cap and Minimum Load Bids that Exceed the Minimum Load Cost Hard Cap**

All Energy Bid prices and Minimum Load Bid prices used in the CAISO Market Processes shall not exceed the Hard Energy Bid Cap or the Minimum Load Cost Hard Cap, respectively.

**30.7.12.4 After-Market Cost Recovery**

For any Energy Bid or Minimum Load Bid price submitted above the Energy Bid price or the Minimum Load Bid price the CAISO uses in the CAISO Market Processes, the Scheduling Coordinators may be eligible for after-market cost recovery pursuant to Section 30.12.

**30.7.12.5 Virtual Bids and Bids for Non-Resource-Specific System Resources**

The CAISO will reject Virtual Bid prices and Bids for Non-Resource-Specific System Resources that exceed the Hard Energy Bid Cap.

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**30.11.1 Reasonableness Thresholds**

The CAISO will calculate the Reasonableness Thresholds for the purpose of evaluating increases to Reference Levels pursuant to this Section 30.11.1.

**30.11.1.1 General Applicability**

The CAISO will calculate the Reasonableness Thresholds for all resources except for Non-Resource-

Specific System Resources. The CAISO will not calculate Reasonableness Thresholds for evaluating Reference Level Change Requests for Bids from resources other than Hydro Default Energy Bids or for Virtual Bids. In no case will Reasonableness Thresholds be lower than a resource's Default Commitment Cost Bids or Default Energy Bids that were established prior to the submission of the Reference Level Change Request. For resources for which the CAISO does not calculate Default Energy Bids, the CAISO will set the Reasonableness Threshold at the Soft Energy Bid Cap. The Reasonableness Threshold for Default Energy Bid or Default Minimum Load Bid adjustments shall not exceed the Hard Energy Bid Cap or Minimum Load Cost Hard Cap, respectively.

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### **30.11.2 Reference Level Change Requests**

#### **30.11.2.1 Applicability**

A Scheduling Coordinator may submit a Reference Level Change Request for Default Start-Up Bids, Default Minimum Load Bids, and Default Energy Bids, as applicable. Scheduling Coordinators may not submit Reference Level Change Requests for Bids by Non-Resource-Specific System Resources. Resources under the Registered Cost methodology are not eligible for Reference Level Change Requests for Default Minimum Load Bids or Default Start-Up Bids.

#### **30.11.2.2 Requirements**

Scheduling Coordinators must calculate their Reference Level Change Request amounts consistent with the methodology used to calculate the Proxy Cost-based Default Start-Up Bid, the Proxy Cost-based Default Minimum Load Bid, and the Variable Cost-based Default Energy Bid. All Reference Level Change Requests must be based on the Scheduling Coordinator's reasonable expectation that its daily actual fuel costs or fuel-equivalent costs for a given Trading Day will exceed the costs used by the CAISO to calculate the resource's Reference Levels, and must reflect reasonable and prudent procurement practices. All Reference Level Change Requests must be calculated using actual or expected fuel costs or fuel-equivalent costs supported by Documentation of Contemporaneously Available Information.

#### **30.11.2.3 Energy Bids Above the Soft Energy Bid Cap**

A Scheduling Coordinator whose Default Energy Bid does not exceed the Soft Energy Bid Cap and that intends to submit an Energy Bid that exceeds the Soft Energy Bid Cap must submit a Reference Level Change Request. The CAISO will further verify Energy Bids in excess of the Soft Energy Bid Cap pursuant to the applicable rules in Section 30.7.

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### **30.12 After-CAISO Market Process Cost Recovery**

#### **30.12.1 Applicability**

Scheduling Coordinators may request an additional uplift payment to cover a resource's actual fuel costs or fuel-equivalent costs associated with Start-Up Bid Costs, Minimum Load Bid Costs, Transition Bid Costs, and Energy Bid Costs used in the Bid Cost Recovery mechanism, and that are for:

- (a) amounts in a Reference Level Change Request that were not approved pursuant to Section 30.11; or
- (b) amounts in a Reference Level Change Request for a Default Energy Bid or Default Minimum Load Bid that exceeds the Hard Energy Bid Cap or the Minimum Load Cost Hard Cap, respectively.

\* \* \* \* \*

### **34.10 Dispatch of Energy from Ancillary Services**

The CAISO may issue Dispatch Instructions to Participating Generators, Participating Loads, Proxy Demand Resources, (via communication with the Scheduling Coordinators of Demand Response Providers) System Units and System Resources contracted to provide Ancillary Services (either procured through the CAISO Markets, Self-Provided by Scheduling Coordinators, or through Exceptional Dispatch or dispatched in accordance with a Legacy RMR Contract) for the Supply of Energy. During normal operating conditions, the CAISO may Dispatch those Participating Generators, Participating Loads, Proxy Demand Resources, System Units and System Resources that have contracted to provide Spinning

Reserve and Non-Spinning Reserve, except for those reserves designated as Contingency Only, in conjunction with the normal Dispatch of Energy. Contingency Only reserves are Operating Reserve capacity that have been designated, either by the Scheduling Coordinator or the CAISO, as available to supply Energy in the Real-Time only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency. During normal operating conditions, the CAISO may also elect to designate any reserve not previously identified as Contingency Only by Scheduling Coordinator as Contingency Only reserves. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the CAISO may dispatch Contingency Only reserves. If Contingency Only reserves are dispatched through the Real-Time Contingency Dispatch, which as described in Section 34.5.2 only Dispatches in the event of a Contingency, such Dispatch and pricing will be based on the original Energy Bids. If Contingency Only reserves are dispatched in response to a System Emergency that has occurred because the CAISO has run out of Economic Bids when no Contingency event has occurred, the Real-Time Economic Dispatch will Dispatch such Contingency Only reserves using the Hard Energy Bid Cap as the Energy Bids for such reserves and will set prices accordingly. If a Participating Generator, Participating Load, System Unit, or System Resource that is supplying Operating Reserve is Dispatched to provide Energy, the CAISO shall replace the Operating Reserve as necessary to maintain NERC and WECC reliability standards, including any requirements of the NRC. If the CAISO uses Operating Reserve to meet Real-Time Energy requirements, and if the CAISO needs Operating Reserves to satisfy NERC and WECC reliability standards, including any requirements of the NRC, the CAISO shall restore the Operating Reserves to the extent necessary to meet NERC and WECC reliability standards, including any requirements of the NRC through either the procurement of additional Operating Reserve in the Real-Time Market or the Dispatch of other Energy Bids in the Security Constrained Economic Dispatch to allow the resources that were providing Energy from the Operating Reserve to return to their Dispatch Operating Target. The Energy Bid Curve is not used by the Automatic Generation Control system when Dispatching Energy from Regulation. For Regulation Up capacity, the upper portion of the resource capacity from its Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve. For a resource providing Regulation Up or Operating Reserves the remaining Energy Bid Curve shall be allocated to any RTM AS Awards in

the following order from higher to lower capacity where applicable: (a) Spinning Reserve; and (b) Non-Spinning Reserve. For resources providing Regulation Up, the applicable upper Regulation Limit shall be used as the basis of allocation if it is lower than the upper portion of the Energy Bid Curve. The remaining portion of the Energy Bid Curve, if there is any, shall constitute a Bid for Real-Time Market Energy. For Regulation Down capacity, the lower portion of the resource capacity from its applicable Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve.

\* \* \* \* \*

### **39.6.1 Maximum Bid Prices**

Notwithstanding any other provision of this CAISO Tariff, maximum Bid price provisions of this Section 39.6.1 shall apply to limit, Energy Bids, RUC Availability Bids, and Ancillary Service Bids.

#### **39.6.1.1 Energy Bid and Minimum Load Cost Caps**

##### **39.6.1.1.1 Soft Energy Bid Caps**

All Energy Bids, except for Virtual Bids or Bids for Non-Resource-Specific System Resources, are subject to the Soft Energy Bid Cap. Scheduling Coordinators may submit Energy Bids that are subject to the Soft Energy Bid Cap in excess of the Soft Energy Bid Cap, which the CAISO will process pursuant to Section 30.11.

##### **39.6.1.1.2 Hard Energy Bid Cap**

All Energy Bids are subject to the Hard Energy Bid Cap. Scheduling Coordinators may submit Energy Bid prices in excess of the Hard Energy Bid Cap, which the CAISO will cost-verify pursuant to the rules specified in Section 30.11.

##### **39.6.1.1.3 Minimum Load Cost Hard Cap**

All Minimum Load Bids must not exceed the Minimum Load Cost Hard Cap. Scheduling Coordinators may submit Minimum Load Bid prices in excess of the Minimum Load Cost Hard Cap, which the CAISO will cost-verify pursuant to the rules specified in Section 30.11.

\* \* \* \* \*

### **39.6.1.6 Maximum Start-Up Cost and Minimum Load Cost Registered Cost Values**

The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for capacity of non-Multi-Stage Generating Resources that are eligible and elect to use the Registered Cost methodology in accordance with Section 30.4 cannot exceed the Minimum Load Cost Hard Cap and will be limited to one hundred fifty percent (150%) of the Projected Proxy Cost. The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for capacity of Multi-Stage Generating Resources that are eligible and elect to use the Registered Cost methodology in accordance with Section 30.4 will be limited to one hundred fifty percent (150%) of the Projected Proxy Cost for each MSG Configuration of the resources. The Projected Proxy Cost for natural gas-fired resources will include a gas price component, a major maintenance expense component, if available, a volumetric Grid Management Charge component, and, if eligible, a projected Greenhouse Gas Allowance Price component calculated as set forth in this Section 39.6.1.6. The Projected Proxy Cost for non-natural gas-fired resources will be based on costs provided to the CAISO pursuant to Section 30.4.5.2, a major maintenance expense component, if available, a volumetric Grid Management Charge component, and, if eligible, a projected Greenhouse Gas Allowance Price component calculated as set forth in this Section 39.6.1.6.

\* \* \* \* \*

### **39.7.1 Calculation of Default Energy Bids**

Default Energy Bids shall be calculated by the CAISO, for the on-peak hours and off-peak hours for both the DAM and RTMs, pursuant to one of the methodologies described in this Section. The Scheduling Coordinator for each Generating Unit owner or Participating Load must rank order the following options of calculating the Default Energy Bid starting with its preferred method. The Scheduling Coordinator must provide the data necessary for determining the Variable Costs unless the Negotiated Rate Option precedes the Variable Cost Option in the rank order, in which case the Scheduling Coordinator must have a negotiated rate established with the Independent Entity charged with calculating the Default Energy Bid.



If no rank order is specified for a Generating Unit or Participating Load, then the default rank order of (1) Variable Cost Option, (2) Negotiated Rate Option, (3) LMP Option will be applied. For the first ninety (90) days after changes to resource status and MSG Configurations as specified in Section 27.8.3, including the first ninety (90) days after the effective date of Section 27.8.3, the Default Energy Bid option for the resource is limited to the Negotiated Rate Option or the Variable Cost Option. Default Energy Bids used for purposes other than for calculating Reasonableness Thresholds will be subject to the Soft Energy Bid Cap, unless the CAISO has approved a Reference Level Change Request pursuant to Section 30.11 in support of an Energy Bid above the Soft Energy Bid Cap.

#### **39.7.1.1 Variable Cost Option**

For natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by adding incremental cost (comprised of incremental fuel cost plus a volumetric Grid Management Charge adder plus a greenhouse gas cost adder if applicable) with variable operation and maintenance cost, adding ten percent (10%) to the sum, and adding a Bid Adder if applicable. For non-natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by summing incremental fuel or fuel-equivalent cost plus a volumetric Grid Management Charge plus a greenhouse gas cost adder if applicable, adding ten percent (10%) to the sum, adding a Bid Adder if applicable for a Frequently Mitigated Unit, and adding the Variable Energy Opportunity Costs, if any. For any Default Energy Bids calculated under the Variable Cost Option that exceed \$1,000 per MWh because of an approved Reference Level Change Request, any ten percent (10%) adder or Frequently Mitigated Unit adder shall not exceed \$100 per MWh.

\* \* \* \* \*

### **Appendix A**

#### **Master Definitions Supplement**

\* \* \* \* \*

#### **- CAISO IFM Curtailed Quantity**

In each Trading Hour for each Scheduling Coordinator (a) the maximum of zero or the submitted Day-Ahead Self-Schedule for Demand minus the Day-Ahead Schedule for Demand in each applicable LAP, or

(b) in the event a LAP price equals the Hard Energy Bid Cap, the maximum of zero or the submitted Day-Ahead Self-Schedule for Demand plus the quantity of Demand bid at the maximum price for Energy Bids specified in Section 39.6.1.1 minus the Day-Ahead Schedule for Demand in the relevant LAP.

\* \* \* \* \*

**- Hard Energy Bid Cap**

The maximum Energy Bid Price the CAISO will use for purposes of clearing the CAISO Market Processes. The Hard Energy Bid Cap is \$2,000 per MWh.

\* \* \* \* \*

**- Minimum Load Cost Hard Cap**

The maximum Minimum Load Cost used in the CAISO Markets. The Minimum Load Cost Hard Cap is \$2,000 per MWh. The CAISO will calculate this limit by dividing a resource's Minimum Load Cost by its Minimum Load. Where a resource's Minimum Load is less than 1 MW, the CAISO will set its Minimum Load to 1 MW for the purpose of this calculation.

\* \* \* \* \*

**- Scarcity Reserve Demand Curve Values**

Fixed percentages of the Hard Energy Bid Cap reflected in the Scarcity Reserve Demand Curve that the CAISO uses to calculate Ancillary Service Shadow Prices for Regulation Up, Spinning Reserve, Non-Spinning Reserve and Regulation Down from which the CAISO determines Ancillary Service Marginal Prices when there is insufficient supply in an Ancillary Service Region or Sub-Region to meet an Ancillary Services minimum procurement requirement.

\* \* \* \* \*

**- Soft Energy Bid Cap**

The maximum Energy Bid price submitted by Scheduling Coordinators for resources, except for Virtual Bids and Bids for Non-Resource-Specific System Resources, the CAISO will use for purposes of clearing the CAISO Market Processes without cost verification pursuant to Section 30.11. The Soft Energy Bid Cap is \$1,000 per MWh.

\* \* \* \* \*

**Attachment B – Marked Tariff**

**Filing to Comply with Order No. 831**

**California Independent System Operator Corporation**

**\* Note: Language that is shaded in gray is pending in the CCDEBE tariff amendment \***

#### **11.5.6.2.5.2 Allocation of Exceptional Dispatch Costs to Scheduling Coordinators**

Excess Cost Payments for the Exceptional Dispatches used for emergency conditions and to avoid Market Disruption and System Emergencies as determined pursuant to Section 11.5.6.1.1 shall be charged to Scheduling Coordinators as follows in a two-step process. First, each Scheduling Coordinator's charge shall be the lesser of:

- (i) the pro rata share of total Excess Cost Payment based upon the ratio of each Scheduling Coordinator's Net Negative Uninstructed Deviations to the total system Net Negative Uninstructed Deviations; or
- (ii) the amount obtained by multiplying the Scheduling Coordinator's Net Negative Uninstructed Deviation for each Settlement Interval and a weighted average price. The weighted average price is equal to the total Excess Cost Payments to be allocated divided by the MWh of FMM Exceptional Dispatch Energy or RTD Exceptional Dispatch Energy associated with the Excess Cost Payment.

Second, any remaining unallocated costs shall be allocated to all Scheduling Coordinators pro-rata based on their Measured Demand. For a Scheduling Coordinator of an MSS Operator that has elected to follow Load, allocation of this second category of Excess Cost Payments will be based on net metered MSS Demand. In addition, to the extent the Exceptional Dispatches are made to resolve congestion internal to the MSS, the Scheduling Coordinator for such an MSS will also be subject to these two categories of Excess Cost Payments.

A Scheduling Coordinator shall be exempt from the first category of the Excess Cost Payment allocation for a Settlement Interval if the Scheduling Coordinator has sufficient incremental Energy Bids that are from physically available resources in the Real-Time Market for Energy to cover its Net Negative Uninstructed Deviation in the given Settlement Interval and that have been approved by the CAISO consistent with Sections 30.7.12 and 30.11~~the prices of such Energy Bids do not exceed the applicable maximum Bid level as set forth in Section 39.~~

\* \* \* \* \*

**30.4.4.5 Resources with Greenhouse Gas Compliance Obligations**

For each resource registered with the California Air Resources Board as having a greenhouse gas compliance obligation, the information provided to the CAISO by the Scheduling Coordinator must be consistent with the information submitted to the California Air Resources Board.

**30.4.4.6 ~~Maximum Default Minimum Load Bid [Not Used]~~**

~~In no case shall a Default Minimum Load Bid exceed the Minimum Load Cost Hard Cap.~~

\* \* \* \* \*

**30.6.2.1.2.1 Marginal Real-Time Dispatch Option**

A Reliability Demand Response Resource that is subject to the Marginal Real-Time Dispatch Option:

- (a) May submit either a single-segment Bid or a multi-segment bid in the Real-Time Market that must be at least ninety-five ~~(95)~~-percent (95%) of the applicable Soft Energy Bid Cap. ~~maximum Bid price and can be no greater than one hundred (100) percent of the applicable maximum Bid price set forth in Section 39.6.1.1.~~
- (b) Shall be dispatched as a marginal resource if it is dispatched by the CAISO.

**30.6.2.1.2.2 Discrete Real-Time Dispatch Option**

A Reliability Demand Response Resource that is subject to the Discrete Real-Time Dispatch Option:

- (a) May submit only a single-segment Bid in the Real-Time Market that must be at least ninety-five ~~(95)~~-percent (95%) of the applicable Soft Energy Bid Cap. ~~maximum Bid price and can be no greater than one hundred (100) percent of the applicable maximum Bid price set forth in Section 39.6.1.1.~~
- (b) Shall be dispatched as a discrete (non-marginal) resource if it is dispatched by the CAISO.

\* \* \* \* \*

**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.

**30.7.12.2 Energy Bids that Exceed the Soft Energy Bid Cap**

In addition to all other Bid validation rules that apply to Energy Bids, if a Scheduling Coordinator submits an Energy Bid price that exceeds the Soft Energy Bid Cap, the CAISO will modify the Energy Bid price for purposes of clearing the relevant CAISO Market Process to the higher of the Soft Energy Bid Cap or the resource's Default Energy Bid as modified pursuant to a Reference Level Change Request pursuant to Section 30.11.

**30.7.12.3 Energy Bids that Exceed the Hard Energy Bid Cap and Minimum Load Bids that Exceed the Minimum Load Cost Hard Cap**

All Energy Bid prices and Minimum Load Bid prices used in the CAISO Market Processes shall not exceed the Hard Energy Bid Cap or the Minimum Load Cost Hard Cap, respectively.

**30.7.12.4 After-Market Cost Recovery**

For any Energy Bid or Minimum Load Bid price submitted above the Energy Bid price or the Minimum Load Bid price the CAISO uses in the CAISO Market Processes, the Scheduling Coordinators may be eligible for after-market cost recovery pursuant to Section 30.12.

**30.7.12.5 Virtual Bids and Bids for Non-Resource-Specific System Resources**

The CAISO will reject Virtual Bid prices and Bids for Non-Resource-Specific System Resources that exceed the Hard Energy Bid Cap.

\* \* \* \* \*

### **30.11.1 Reasonableness Thresholds**

The CAISO will calculate the Reasonableness Thresholds for the purpose of evaluating increases to Reference Levels pursuant to this Section 30.11.1.

#### **30.11.1.1 General Applicability**

The CAISO will calculate the Reasonableness Thresholds for all resources except for Non-Resource-Specific System Resources. The CAISO will not calculate Reasonableness Thresholds for evaluating Reference Level Change Requests for Bids from resources other than Hydro Default Energy Bids or for Virtual Bids. In no case will Reasonableness Thresholds be lower than a resource's' Default Commitment Cost Bids or Default Energy Bids that were established prior to the submission of the Reference Level Change Request. For resources for which the CAISO does not calculate Default Energy Bids, the CAISO will set the Reasonableness Threshold at the Soft Energy Bid Cap. The Reasonableness Threshold for Default Energy Bid or Default Minimum Load Bid adjustments shall not exceed the Hard Energy Bid Cap or Minimum Load Cost Hard Cap, respectively.

\* \* \* \* \*

### **30.11.2 Reference Level Change Requests**

#### **30.11.2.1 Applicability**

A Scheduling Coordinator may submit a Reference Level Change Request for Default Start-Up Bids, Default Minimum Load Bids, and Default Energy Bids, as applicable. Scheduling Coordinators may not submit Reference Level Change Requests for Bids by Non-Resource-Specific System Resources. Resources under the Registered Cost methodology are not eligible for Reference Level Change Requests for Default Minimum Load Bids or Default Start-Up Bids.

#### **30.11.2.2 Requirements**

Scheduling Coordinators must calculate their Reference Level Change Request amounts consistent with the methodology used to calculate the Proxy Cost-based Default Start-Up Bid, the Proxy Cost-based Default Minimum Load Bid, and the Variable Cost-based Default Energy Bid. All Reference Level

Change Requests must be based on the Scheduling Coordinator's reasonable expectation that its daily actual fuel costs or fuel-equivalent costs for a given Trading Day will exceed the costs used by the CAISO to calculate the resource's Reference Levels, and must reflect reasonable and prudent procurement practices. All Reference Level Change Requests must be calculated using actual or expected fuel costs or fuel-equivalent costs supported by Documentation of Contemporaneously Available Information.

### **30.11.2.3 Energy Bids Above the Soft Energy Bid Cap**

A Scheduling Coordinator whose Default Energy Bid does not exceed the Soft Energy Bid Cap and that intends to submit an Energy Bid that exceeds the Soft Energy Bid Cap must submit a Reference Level Change Request. The CAISO will further verify Energy Bids in excess of the Soft Energy Bid Cap pursuant to the applicable rules in Section 30.7.

\* \* \* \* \*

## **30.12 After-CAISO Market Process Cost Recovery**

### **30.12.1 Applicability**

Scheduling Coordinators may request an additional uplift payment to cover a resource's actual fuel costs or fuel-equivalent costs associated with Start-Up Bid Costs, Minimum Load Bid Costs, Transition Bid Costs, and Energy Bid Costs used in the Bid Cost Recovery mechanism, and that are for:

- (a) amounts in a Reference Level Change Request that were not approved pursuant to Section 30.11; or
- (b) amounts in a Reference Level Change Request for a Default Energy Bid or Default Minimum Load Bid that exceeds the Hard Energy Bid Cap or the Minimum Load Cost Hard Cap, respectively.

\* \* \* \* \*

## **34.10 Dispatch of Energy from Ancillary Services**

The CAISO may issue Dispatch Instructions to Participating Generators, Participating Loads, Proxy



Demand Resources, (via communication with the Scheduling Coordinators of Demand Response Providers) System Units and System Resources contracted to provide Ancillary Services (either procured through the CAISO Markets, Self-Provided by Scheduling Coordinators, or through Exceptional Dispatch or dispatched in accordance with a Legacy RMR Contract) for the Supply of Energy. During normal operating conditions, the CAISO may Dispatch those Participating Generators, Participating Loads, Proxy Demand Resources, System Units and System Resources that have contracted to provide Spinning Reserve and Non-Spinning Reserve, except for those reserves designated as Contingency Only, in conjunction with the normal Dispatch of Energy. Contingency Only reserves are Operating Reserve capacity that have been designated, either by the Scheduling Coordinator or the CAISO, as available to supply Energy in the Real-Time only in the event of the occurrence of an unplanned Outage, a Contingency or an imminent or actual System Emergency. During normal operating conditions, the CAISO may also elect to designate any reserve not previously identified as Contingency Only by Scheduling Coordinator as Contingency Only reserves. In the event of an unplanned Outage, a Contingency or a threatened or actual System Emergency, the CAISO may dispatch Contingency Only reserves. If Contingency Only reserves are dispatched through the Real-Time Contingency Dispatch, which as described in Section 34.5.2 only Dispatches in the event of a Contingency, such Dispatch and pricing will be based on the original Energy Bids. If Contingency Only reserves are dispatched in response to a System Emergency that has occurred because the CAISO has run out of Economic Bids when no Contingency event has occurred, the Real-Time Economic Dispatch will Dispatch such Contingency Only reserves using ~~the Hard Energy Bid Cap maximum Bid prices as provided in Section 39.6.1~~ as the Energy Bids for such reserves and will set prices accordingly. If a Participating Generator, Participating Load, System Unit, or System Resource that is supplying Operating Reserve is Dispatched to provide Energy, the CAISO shall replace the Operating Reserve as necessary to maintain NERC and WECC reliability standards, including any requirements of the NRC. If the CAISO uses Operating Reserve to meet Real-Time Energy requirements, and if the CAISO needs Operating Reserves to satisfy NERC and WECC reliability standards, including any requirements of the NRC, the CAISO shall restore the Operating Reserves to the extent necessary to meet NERC and WECC reliability standards, including any requirements of the NRC through either the procurement of additional Operating Reserve in the Real-

Time Market or the Dispatch of other Energy Bids in the Security Constrained Economic Dispatch to allow the resources that were providing Energy from the Operating Reserve to return to their Dispatch Operating Target. The Energy Bid Curve is not used by the Automatic Generation Control system when Dispatching Energy from Regulation. For Regulation Up capacity, the upper portion of the resource capacity from its Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve. For a resource providing Regulation Up or Operating Reserves the remaining Energy Bid Curve shall be allocated to any RTM AS Awards in the following order from higher to lower capacity where applicable: (a) Spinning Reserve; and (b) Non-Spinning Reserve. For resources providing Regulation Up, the applicable upper Regulation Limit shall be used as the basis of allocation if it is lower than the upper portion of the Energy Bid Curve. The remaining portion of the Energy Bid Curve, if there is any, shall constitute a Bid for Real-Time Market Energy. For Regulation Down capacity, the lower portion of the resource capacity from its applicable Regulation Limit is allocated to Regulation regardless of its Energy Bid Curve.

\* \* \* \* \*

### 39.6.1 Maximum Bid Prices

Notwithstanding any other provision of this CAISO Tariff, maximum Bid price provisions of this Section 39.6.1 shall apply to limit, Energy Bids, RUC Availability Bids, and Ancillary Service Bids ~~as specified below.~~

#### 39.6.1.1 ~~Maximum Price for Energy Bid~~ and Minimum Load Cost Caps

##### 39.6.1.1.1 Soft Energy Bid Caps

~~All Energy Bids, except for Virtual Bids or Bids for Non-Resource-Specific System Resources, are subject to the Soft Energy Bid Cap. Scheduling Coordinators may submit Energy Bids that are subject to the Soft Energy Bid Cap in excess of the Soft Energy Bid Cap, which the CAISO will process pursuant to Section 30.11. For the twelve (12) months following the effective date of this Section, the maximum Energy Bid prices shall be \$500/MWh. After the twelfth month following the effective date of this Section, the maximum Energy Bid price shall be \$750/MWh. After the twenty fourth month following the effective date of this Section, the maximum Energy Bid price shall be \$1,000/MWh.~~

#### **39.6.1.1.2 Hard Energy Bid Cap**

All Energy Bids are subject to the Hard Energy Bid Cap. Scheduling Coordinators may submit Energy Bid prices in excess of the Hard Energy Bid Cap, which the CAISO will cost-verify pursuant to the rules specified in Section 30.11.

#### **39.6.1.1.3 Minimum Load Cost Hard Cap**

All Minimum Load Bids must not exceed the Minimum Load Cost Hard Cap. Scheduling Coordinators may submit Minimum Load Bid prices in excess of the Minimum Load Cost Hard Cap, which the CAISO will cost-verify pursuant to the rules specified in Section 30.11.

\* \* \* \* \*

#### **39.6.1.6 Maximum Start-Up Cost and Minimum Load Cost Registered Cost Values**

The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for capacity of non-Multi-Stage Generating Resources that are eligible and elect to use the Registered Cost methodology in accordance with Section 30.4 cannot exceed the Minimum Load Cost Hard Cap and will be limited to **one hundred fifty percent (150%)** of the Projected Proxy Cost. The maximum Start-Up Cost and Minimum Load Cost values registered in the Master File by Scheduling Coordinators for capacity of Multi-Stage Generating Resources that are eligible and elect to use the Registered Cost methodology in accordance with Section 30.4 will be limited to **one hundred fifty percent (150%)** of the Projected Proxy Cost for each MSG Configuration of the resources. The Projected Proxy Cost for natural gas-fired resources will include a gas price component, a major maintenance expense component, if available, a volumetric Grid Management Charge component, and, if eligible, a projected Greenhouse Gas Allowance Price component calculated as set forth in this Section 39.6.1.6. The Projected Proxy Cost for non-natural gas-fired resources will be based on costs provided to the CAISO pursuant to Section 30.4.5.2, a major maintenance expense component, if available, a volumetric Grid Management Charge component, and, if eligible, a projected Greenhouse Gas Allowance Price component calculated as set forth in this Section 39.6.1.6.

\* \* \* \* \*

### **39.7.1 Calculation of Default Energy Bids**

Default Energy Bids shall be calculated by the CAISO, for the on-peak hours and off-peak hours for both the DAM and RTMs, pursuant to one of the methodologies described in this Section. The Scheduling Coordinator for each Generating Unit owner or Participating Load must rank order the following options of calculating the Default Energy Bid starting with its preferred method. The Scheduling Coordinator must provide the data necessary for determining the Variable Costs unless the Negotiated Rate Option precedes the Variable Cost Option in the rank order, in which case the Scheduling Coordinator must have a negotiated rate established with the Independent Entity charged with calculating the Default Energy Bid. If no rank order is specified for a Generating Unit or Participating Load, then the default rank order of (1) Variable Cost Option, (2) Negotiated Rate Option, (3) LMP Option will be applied. For the first ninety (90) days after changes to resource status and MSG Configurations as specified in Section 27.8.3, including the first ninety (90) days after the effective date of Section 27.8.3, the Default Energy Bid option for the resource is limited to the Negotiated Rate Option or the Variable Cost Option. Default Energy Bids used for purposes other than for calculating Reasonableness Thresholds will be subject to the Soft Energy Bid Cap, unless the CAISO has approved a Reference Level Change Request pursuant to Section 30.11 in support of an Energy Bid above the Soft Energy Bid Cap.

#### **39.7.1.1 Variable Cost Option**

For natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by adding incremental cost (comprised of incremental fuel cost plus a volumetric Grid Management Charge adder plus a greenhouse gas cost adder if applicable) with variable operation and maintenance cost, adding ten percent (10%) to the sum, and adding a Bid Adder if applicable. For non-natural gas-fueled units, the Variable Cost Option will calculate the Default Energy Bid by summing incremental fuel or fuel-equivalent cost plus a volumetric Grid Management Charge plus a greenhouse gas cost adder if applicable, adding ten percent (10%) to the sum, adding a Bid Adder if applicable for a Frequently Mitigated Unit, and adding the Variable Energy Opportunity Costs, if any. For any Default Energy Bids calculated under the Variable Cost Option that exceed \$1,000 per MWh because of an approved Reference Level Change Request,

any ten percent (10%) adder or Frequently Mitigated Unit adder shall not exceed \$100 per MWh.

\* \* \* \* \*

## Appendix A

### Master Definitions Supplement

\* \* \* \* \*

#### - CAISO IFM Curtailed Quantity

In each Trading Hour for each Scheduling Coordinator (a) the maximum of zero or the submitted Day-Ahead Self-Schedule for Demand minus the Day-Ahead Schedule for Demand in each applicable LAP, or (b) in the event a LAP price equals the Hard Energy Bid Cap~~maximum price for Energy Bids specified in Section 39.6.1.1~~, the maximum of zero or the submitted Day-Ahead Self-Schedule for Demand plus the quantity of Demand bid at the maximum price for Energy Bids specified in Section 39.6.1.1 minus the Day-Ahead Schedule for Demand in the relevant LAP.

\* \* \* \* \*

#### - Hard Energy Bid Cap

The maximum Energy Bid Price the CAISO will use for purposes of clearing the CAISO Market Processes. The Hard Energy Bid Cap is \$2,000 per MWh.

\* \* \* \* \*

#### - Minimum Load Cost Hard Cap

The maximum Minimum Load Cost used in the CAISO Markets. The Minimum Load Cost Hard Cap is \$2,000 per MWh. The CAISO will calculate this limit by dividing a resource's Minimum Load Cost by its Minimum Load. Where a resource's Minimum Load is less than 1 MW, the CAISO will set its Minimum Load to 1 MW for the purpose of this calculation.

\* \* \* \* \*

#### - Scarcity Reserve Demand Curve Values

Fixed percentages of the ~~maximum~~Hard Energy Bid Cap~~price permitted under Section 39.6.1.1~~ reflected

in the Scarcity Reserve Demand Curve that the CAISO uses to calculate Ancillary Service Shadow Prices for Regulation Up, Spinning Reserve, Non-Spinning Reserve and Regulation Down from which the CAISO determines Ancillary Service Marginal Prices when there is insufficient supply in an Ancillary Service Region or Sub-Region to meet an Ancillary Services minimum procurement requirement.

\* \* \* \* \*

**- Soft Energy Bid Cap**

The maximum Energy Bid price submitted by Scheduling Coordinators for resources, except for Virtual Bids and Bids for Non-Resource-Specific System Resources, the CAISO will use for purposes of clearing the CAISO Market Processes without cost verification pursuant to Section 30.11. The Soft Energy Bid Cap is \$1,000 per MWh.

\* \* \* \* \*