



California Independent  
System Operator Corporation

September 2, 2009

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

**Re: California Independent System Operator Corporation  
Compliance Filing**

**Docket Nos. ER09-1281-\_\_\_\_**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO or ISO)<sup>1</sup> hereby submits an original and five copies of the instant filing in compliance with the Federal Energy Regulatory Commission's (FERC or Commission) August 4, 2009, Order on Tariff Revisions, 128 FERC ¶ 61,131 (August 4 Order). Please date-stamp the additional copy of this filing and return in the enclosed envelope.

## **I. Background**

The ISO's current market design is based on locational marginal prices as the method of financial settlement in the ISO electric markets as reflected in its FERC Electric Tariff (ISO Tariff). On June 5, 2009, the ISO submitted tariff revisions to address the calculation of the marginal cost of energy component of the locational marginal price under the ISO Tariff. Because transmission losses are unknown prior to determining the least cost solution for its market, the marginal cost of energy component is developed by using a reference bus to absorb any positive or negative power mismatches. The reference bus can be either a single node or a set of nodes on the CAISO system. The ISO uses a set of nodes referred to as the distributed reference bus.

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<sup>1</sup> Capitalized terms not otherwise defined herein have the meanings set forth in the Master Definitions Supplement, Appendix A to the ISO Tariff. Except where otherwise noted herein, references to sections are references to sections of the ISO Tariff.

In using the distributed reference bus methodology to calculate the marginal cost of energy component of locational marginal prices the ISO can use either the distributed load reference bus or the distributed generation reference bus. The preference is to use the distributed load reference bus as reflected in the ISO Tariff. Because of the market clearing issues experienced in clearing the Integrated Forward Market using the distributed load reference bus method, in its June 5, 2009, filing the ISO requested authority to fall back on the use of the distributed generation reference bus.

On August 4, 2009, the Commission accepted the proposed changes subject to further compliance requirements as discussed further below.

## **II. Discussion**

In accepting the proposed tariff changes, the Commission required one modification to the ISO's proposed tariff sheets. The ISO stated in its June 5, 2009, filing that, in the event that it employs a distributed generation reference bus, it will notify market participants of which integrated forward market runs required the use of this backstop mechanism. The Commission agreed with this commitment and stated that it is a prudent approach. However, the ISO had not included a provision in its June 5, 2009, tariff filing specifying this requirement. The Commission directed the ISO to include this provision in its tariff in a compliance filing, to be filed no later than 30 days after the date of the August 4 order.<sup>2</sup>

In compliance with this requirement, the ISO proposes to add the following statement in Section B of Appendix C of the ISO Tariff: "In the event that the ISO employs a distributed generation Reference Bus, it will notify Market Participants of which Integrated Forward Market runs required the use of this backstop mechanism." The inclusion of this statement in the ISO Tariff fulfills the Commission's compliance changes directive in this proceeding.<sup>3</sup> The ISO also notes that the market participants notice will be provided through the Daily Market Watch issuances.

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<sup>2</sup> See August 4 Order P 27.

<sup>3</sup> In addition, the Commission directed the ISO to post on its website an informational report detailing the nodal pricing ramifications resulting from the use of a distributed generation reference bus in clearing the integrated forward market after every use of the backstop provision. The Commission stated that such report should provide information similar to the summary information illustrating the effects of using the backstop provision on a nodal basis provided with the ISO's filing in this proceeding. The ISO does not oppose this directive but is separately seeking clarification or, in the alternative, rehearing regarding this reporting requirement to ensure full compliance with this directive.

**III. Materials Provided in the Instant Compliance Filing**

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

- Attachment A Clean ISO Tariff sheets incorporating the red-lined changes contained in Attachment B
- Attachment B Red-lined changes to the ISO Tariff to implement the revisions contained in this filing

**IV. Effective Date.**

The ISO requests that the Commission approve this compliance filing as submitted to be effective June 6, 2009.

**V. Conclusion**

The ISO respectfully requests that the Commission accept the instant filing as complying with the directives of the August 4 Order. Please contact the undersigned with any questions concerning this filing.

Respectfully submitted,

  
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## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 2nd day of September, 2009.

  
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Jane Ostapovich

**Attachment A – Clean Sheets**  
**Distributed Load Reference Bus Revisions**  
**Fourth Replacement CAISO Tariff**  
**September 3, 2009**

- $MCC_i$  is the LMP component representing the Marginal Cost of Congestion (also referred to as  $\rho$ ) at bus  $i$  relative to the Reference Bus.
- $MCL_i$  is the LMP component representing the Marginal Cost of Losses (also referred to as  $\gamma$ ) at bus  $i$  relative to the Reference Bus.

**B. The System Marginal Energy Cost Component of LMP**

The SMEC shall be the same for each location throughout the system. SMEC is the sensitivity of the power balance constraint at the optimal solution. The power balance constraint ensures that the physical law of conservation of Energy (the sum of Generation and imports equals the sum of Demand, including exports and Transmission Losses) is accounted for in the network solution. For the designated reference location the CAISO will utilize a distributed Load Reference Bus for which constituent PNodes are weighted using the Reference Bus distribution factors. The Load distributed Reference Bus distribution factors are based on the Load Distribution Factors at each PNode that represents cleared Load in the Integrated Forward Market or forecast Load for MPM-RRD, RUC, HASP and RTM. In the Integrated Forward Market, in the event that the market is not able to clear based on the use of a distributed load Reference Bus, the CAISO will use a distributed generation Reference Bus for which the constituent nodes and the weights are determined economically within the running of the Integrated Forward Market based on available economic bids. In the event that the ISO employs a distributed generation Reference Bus, it will notify Market Participants of which Integrated Forward Market runs required the use of this backstop mechanism. A distributed Load Reference Bus will be used for MPM-RRD, RUC, HASP and RTM regardless of whether a distributed Generation Reference Bus were used in the corresponding Integrated Forward Market run. Once the Reference Bus is selected, the System Marginal Energy Cost is the cost of economically providing the next increment of Energy at the distributed Reference Bus, based on submitted Bids.

**Attachment B – Blacklines**  
**Distributed Load Reference Bus Revisions**  
**Fourth Replacement CAISO Tariff**  
**September 3, 2009**

## CAISO APPENDIX C

### Locational Marginal Price

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#### B. The System Marginal Energy Cost Component of LMP

The SMEC shall be the same for each location throughout the system. SMEC is the sensitivity of the power balance constraint at the optimal solution. The power balance constraint ensures that the physical law of conservation of Energy (the sum of Generation and imports equals the sum of Demand, including exports and Transmission Losses) is accounted for in the network solution. For the designated reference location the CAISO will utilize a distributed Load Reference Bus for which constituent PNodes are weighted using the Reference Bus distribution factors. The Load distributed Reference Bus distribution factors are based on the Load Distribution Factors at each PNode that represents cleared Load in the Integrated Forward Market or forecast Load for MPM-RRD, RUC, HASP and RTM. In the Integrated Forward Market, in the event that the market is not able to clear based on the use of a distributed load Reference Bus, the CAISO will use a distributed generation Reference Bus for which the constituent nodes and the weights are determined economically within the running of the Integrated Forward Market based on available economic bids. In the event that the ISO employs a distributed generation Reference Bus, it will notify Market Participants of which Integrated Forward Market runs required the use of this backstop mechanism. A distributed Load Reference Bus will be used for MPM-RRD, RUC, HASP and RTM regardless of whether a distributed Generation Reference Bus were used in the corresponding Integrated Forward Market run. Once the Reference Bus is selected, the System Marginal Energy Cost is the cost of economically providing the next increment of Energy at the distributed Reference Bus, based on submitted Bids.

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