

Attachment B – Blacklines
Integrated Balancing Authority Area Modeling and Pricing Compliance Filing
4th Replacement CAISO Tariff (MRTU)

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27.5.3 Integrated Balancing Authority Areas.

To the extent sufficient data are available or adequate estimates can be made for an IBAA, the FNM used by the CAISO for the CAISO Markets Processes will include a model of the IBAA's network topology. The CAISO monitors but does not enforce the network Constraints for an IBAA in running the CAISO Markets Processes, ~~unless enforcement of such Constraints is allowed under a Market Efficiency Enhancement Agreement~~. Similarly, the CAISO models the resistive component for transmission losses on an IBAA but does not allow such losses to determine LMPs that apply for pricing transactions to and from an IBAA and the CAISO Balancing Authority Area, unless allowed under a Market Efficiency Enhancement Agreement. As described in Section 27.5.3.4, for Bids and Schedules between the CAISO Balancing Authority Area and the IBAA, the CAISO will model the associated sources and sinks that are external to the CAISO Balancing Authority Area using individual or aggregated System Resource injections and withdrawals at locations in the FNM that allow the impact of such injections and withdrawals on the CAISO Balancing Authority Area to be reflected in the CAISO Markets Processes as accurately as possible given the information available to the CAISO.

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27.5.3.2 Information Required for Integrated Balancing Authority Area to Obtain Alternate Pricing under a Market Efficiency Enhancement Agreement

The CAISO shall enter into Market Efficiency Enhancement Agreements (MEEAs) with entities controlling supply resources within IBAs to provide alternative modeling and pricing for imports or exports between the IBAA to the CAISO if the IBAA entity provides the required information. During the process of establishing an MEEA, the CAISO may require that any signatory to an MEEA provide historical hourly metered generation data for all supply resources within the IBAA and metered load data in a standard electronic format, for use in determining the injection and withdrawal points that will be used to model the IBAA under the MEEA, pursuant to Section 27.5.3.9. After the establishment of an MEEA, in order to obtain the alternate pricing agreed to in the MEEA, the IBAA entity controlling such supply resources or serving such load under the MEEA must provide the following hourly information:

- (a) total generation within the IBAA at each of the injection points used to model the IBAA, as determined by the CAISO pursuant to Section 27.5.3.9;
- (b) total gross energy scheduled into the IBAA from other Balancing Areas (excluding the CAISO Balancing Authority Area);
- (c) total gross energy purchases made at delivery points within the IBAA, including:
 - (i) purchases from third parties, and
 - (ii) exchanges acquiring energy from third parties
- (d) total load served within the IBAA, including a calculation or estimate of load at each of the withdrawal locations used to model the IBAA, as determined by the CAISO pursuant to Section 27.5.3.9
- (e) total gross energy scheduled out of the IBAA into other Balancing Areas (excluding the CAISO)
- (f) total gross energy sales made for delivery points within the IBAA, including
 - (i) sales to third parties, and
 - (ii) exchanges providing energy to third parties

This information is necessary for the purposes of verifying the location and operation of the supply resources within an IBAA dispatched to implement an import Interchange transaction into the CAISO Balancing Authority or the location of load in the IBAA served by an export Interchange transaction from the CAISO Balancing Authority Area. Data provided shall include schedules, exchanges and transactions for the MEEA signatory and any organizational or financial affiliation with the MEEA signatory. In addition, in the event that there is a Dynamic Resource-Specific System Resource in the IBAA, the IBAA entity in control of such resource may also obtain alternative pricing for sales to the CAISO Balancing Authority Area from the Dynamic Resource-Specific System Resource, as further provided in the IBAA entities' MEEA. Data shall be provided in standard electronic format in a manner and timeline that is consistent with the scheduling, bidding, operational and Settlement requirements under the CAISO.

27.5.3.2.2 Purchases from the CAISO Balancing Authority Area

- (a) During any hour in which an MEEA entity makes sales to the CAISO Balancing Authority at the same time that the IBAA entity is making an energy purchase from the CAISO

Balancing Authority, the IBAA entity will not be charged the alternative pricing LMP but rather will be charged the default pricing point specified in Appendix C Section G.2 for the corresponding volume and time period.

- (b) During any other hour in which an MEEA entity makes purchases from the CAISO Balancing Authority from the IBAA, the MEEA entity will be charged the alternative pricing for any purchases from the CAISO Balancing Authority Area up to the following quantity:
- Maximum Eligible Purchases from CAISO Balancing Authority Area = Load – Generation – Gross Imports into IBAA – Gross Purchases within IBAA.

For any energy purchases from the CAISO Balancing Authority in excess of this maximum limit, the MEEA entity will be charged the default pricing point specified in Appendix C Section G.2 for the corresponding volume and time period.

27.5.3.32 ~~Process for Establishing a New Integrated Balancing Authority Area or Market Efficiency Enhancement Agreement or Modifying an Existing Integrated Balancing Authority Area or Market Efficiency Enhancement Agreement.~~

For any IBAA entity seeking to negotiate an MEEA with the CAISO, the entity shall submit a written request for good faith negotiations to the CAISO. The CAISO shall provide a requesting IBAA entity with a form of MEEA within 30 days of the receipt of any such written request. The IBAA entity must make any requested changes to the MEEA within 30 days of receipt of a form of MEEA. The CAISO shall file an executed MEEA with FERC for review and approval under Section 205 of the Federal Power Act. In the event an MEEA is not executed within 180 days of the initial written request for an MEEA, a requesting IBAA entity may invoke the Dispute Resolution procedures under Section 13 of this Tariff.

[NOTE: PROCESS FOR IBAA CHANGES MOVED TO SECTION 27.5.3.8 BELOW.]

~~Except under exigent circumstances, the CAISO must follow a consultative process with the applicable Balancing Authority and CAISO Market Participants pursuant to the process further defined in the Business Practice Manuals, to establish a new IBAA or enter into a new MEEA or modify an existing IBAA or MEEA. Changes to an existing IBAA may include changes to the modeling of the IBAA's network topology or to the specification of the default Resource IDs described in Section 27.5.3.4. Upon completion of this process and having determined it necessary to establish a new IBAA or enter into a~~

~~new MEEA or modify an existing IBAA or MEEA, the CAISO will make any necessary filings with FERC to amend this CAISO Tariff and to submit for FERC acceptance any related MEEA as appropriate, at which time the CAISO shall also provide its supportive findings for the establishment of the new IBAA or execution of the new MEEA or modification to an existing IBAA or MEEA.~~

27.5.3.4 Use of Data Provided to CAISO under a Market Efficiency Enhancement Agreement.

~~Data provided to the CAISO pursuant to a MEEA shall be used for purposes of modeling and pricing Interchange transactions between the CAISO Balancing Authority and the relevant IBAA. Data concerning the configuration of supply resources will be incorporated into the network model data base in which the electrical network model is maintained for use by the State Estimator and which forms the basis for the FNM used by the CAISO Markets, which shall be available to Scheduling Coordinators that execute an appropriate nondisclosure agreement. Data concerning hourly transactions shall be used solely for pricing those transactions under an MEEA.~~

27.5.3.5 Measures to preserve confidentiality of data under a Market Efficiency Enhancement Agreement

~~Subject to the provisions of Section 27.5.3.4, data provided to the CAISO by any entity under an MEEA or in connection with negotiations to develop an MEEA shall be treated as confidential under Section 20 of this Tariff.~~

27.5.3.6 Dispute Resolution under Market Efficiency Enhancement Agreements

~~Any disputes arising out of or in connection with an MEEA shall be subject to the Dispute Resolution procedures of Section 13 of this Tariff.~~

27.5.3.7 Audit Rights under Market Efficiency Enhancement Agreements

~~The CAISO reserves the right to audit data supplied under a MEEA by giving written notice at least 10 business days in advance of the date that CAISO wishes to initiate such audit, with completion of the audit occurring within 180 days of such notice. Upon request of the CAISO as part of an audit, any signatory to an MEEA must provide requested information to support the hourly information provided under Section 27.5.3.2. Any signatory to an MEEA may audit the price for any transaction entered into under an MEEA by giving written notice at least ten (10) business days in advance of the date of any~~

such audit, with completion of any such audit occurring within 180 days of such notice. Each party will be responsible for its own expenses related to any audit.

27.5.3.8 Process for Adopting a New IBAA or Modifying an Existing IBAA.

[Note – this language was taken from section 27.5.3.3 as previously filed and moved to this section after we deleted the language of the MEEA process. The conforming changes below are only for the purposes of deleting the MEEA from this process and also to comply with the Commission order that it is clear that the CAISO will not change an IBAA or adopt a new IBAA without first seeking FERC-approval.]

Except under exigent circumstances, the CAISO must follow a consultative process with the applicable Balancing Authority and CAISO Market Participants pursuant to the process further defined in the Business Practice Manuals, to establish a new IBAA ~~or enter into a new MEEA~~ or modify an existing IBAA ~~or MEEA~~. Changes to an existing IBAA may include changes to the modeling of the IBAA's network topology or to the specification of the default Resource IDs described in Section 27.5.3.4. Upon completion of this process and having determined it necessary to establish a new IBAA ~~or enter into a new MEEA~~ or modify an existing IBAA ~~or MEEA~~, the CAISO will seek FERC approval under Sections 205 of the Federal Power Act of the proposed new IBAA or changes to the existing IBAA requirements; the CAISO will make any necessary filings with FERC to amend this CAISO Tariff and to submit for FERC acceptance any related MEEA as appropriate, at which time the CAISO shall also provide its supportive findings for the establishment of the new IBAA ~~or execution of the new MEEA~~ or modification to an existing IBAA ~~or MEEA~~.

27.5.3.8.13 Factors to Be Considered in Establishing a New Integrated Balancing Authority Area or Modifying an Existing Integrated Balancing Authority Area.

In establishing a new IBAA or modifying an existing IBAA, the factors that the CAISO will consider shall include, but are not limited to the following:

- (1) The number of Interties between the IBAA and the CAISO Balancing Authority Area and the distance between them;
- (2) Whether the transmission system(s) within the other Balancing Authority Area runs in parallel to major parts of the CAISO Controlled Grid;
- (3) The frequency and magnitude of unscheduled power flows at applicable Interties;

- (4) The number of hours where the actual direction of power flows was reversed from scheduled directions;
- (5) The availability of information to the CAISO for modeling accuracy; and
- (6) The estimated improvement to the CAISO's power flow modeling and Congestion Management processes to be achieved through more accurate modeling of the Balancing Authority Area.

27.5.3.94 Default Designation of External Resource Locations for Modeling Transactions Between the CAISO and an IBAA.

Prior to the establishment of a new IBAA or a change to an existing IBAA, the CAISO will define and publish default Resource IDs to be used for submitting import and export Bids and for settling import and export Schedules between the CAISO Balancing Authority Area and the IBAA. These default Resource IDs will specify in the Master File the default associations of Intertie Scheduling Point Bids and Schedules to supporting individual or aggregate System Resource injection or withdrawal locations in the FNM. The supporting injection and withdrawal locations will be determined by the CAISO to allow the impact of the associated Intertie Scheduling Point Bids and Schedules on the CAISO IBAA to be reflected in the CAISO Markets Processes as accurately as possible given the information available to the CAISO. The CAISO's methodology for determining such default Resource IDs, as well as the specific default Resource IDs that have been adopted for the currently established IBAAs, are provided in the Business Practice Manuals. Alternative Resource IDs to be used instead of the default Resource IDs may be created and adopted for use in conjunction with Intertie Scheduling Point Bids and Schedules between the CAISO Balancing Authority Area and the IBAA based on a Market Efficiency Enhancement Agreement.

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CAISO Tariff Appendix A

Master Definitions Supplement

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Market Efficiency Enhancement Agreement (MEEA)

An agreement between the CAISO and the Balancing Authority of an IBAA, or any entity or group of entities that use the transmission system of an IBAA, which provides for an alternative modeling and pricing

arrangement to the default IBAA modeling and pricing provisions provided in Section 27.5.3. The CAISO may enter into such an agreement ~~subject to FERC review and approval provided that there is a demonstrable benefit to the CAISO Markets resulting from such alternative arrangements.~~ Creation and modification of such an agreement will be pursuant to the process set forth in Section 27.5.3.2 and will be posted on the CAISO Website.

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CAISO TARIFF APPENDIX C

Locational Marginal Price

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G.1 Intertie Scheduling Point Price Calculation for IBAA's

G.1.1 Scheduling Point Prices

As described in Section 27.5.3, the CAISO's FNM includes a full model of the network topology of each IBAA. Consistent with the provisions of Section 27.5.3.4, the CAISO Tariff will specify Resource IDs that associate Intertie Scheduling Point Bids and Schedules with supporting injection and withdrawal locations on the FNM. As provided in Section 27.5.3.4, such Resource IDs may be specified by the CAISO based on the information available to it, or developed pursuant to a Market Efficiency Enhancement Agreement. Once these Resource IDs are established, the CAISO will determine Intertie Scheduling Point LMPs based on the injection and withdrawal locations associated with each Intertie Scheduling Point Bid and Schedule by the appropriate Resource ID. In calculating these LMPs the CAISO follows the provisions specified in Section 27.5.3 regarding the treatment of transmission Constraints and losses on the IBAA network facilities. Unless as required pursuant to an existing MEEA, the default pricing for all exports from the IBAA(s) specified in Section 27.5.3.1 will be based on the LMP for the SMUD IBAA hub and all imports from the IBAA(s) will be based on a mapping to the Captain Jack substation as defined by WECC. The LMP for the SMUD hub will be based on Intertie distribution factors developed from a seasonal power flow base case of the WECC region, which is further identified in the Business Practice Manuals using an equivalencing technique which consists of three steps, for the limited purpose of computing as follows:

1. The SMUD IBAA is equivalenced to only the buses that comprise the System Resources, with all generation also being retained at its buses. The resulting load distribution within each aggregated System Resource defines the Intertie distribution factors for exports from the CAISO Balancing Authority Area.

2. The SMUD IBAA is then equivalenced to only the buses that comprise the System Resources, but this time with no generation being retained. The difference in load at the retained buses after it is netted with generation, relative to step 1, defines the Intertie distribution factors for imports to the CAISO Balancing Authority Area.

3. Because the CAISO anticipates that a single aggregated System Resource will be used for both imports and exports, the Intertie distribution factors resulting from steps 1 and 2 are averaged. [This section is not clear. Tariff language should be clear and definitive – use of the term “anticipates” should be dropped and the actual approach for modeling import and exports should be specified. The CAISO should also state more specifically how it expects to average the Intertie distribution factors.]

G.1.2 Applicable Marginal Losses Adjustment

For import Schedules to the CAISO Balancing Authority Area at the southern terminus of the California-Oregon Transmission Project at the 500 kV bus of Tracy substation that (a) use the California-Oregon Transmission Project, and (b) are charged for losses by the Western Area Power Administration or Transmission Agency of Northern California for the use of the California-Oregon Transmission Project, the CAISO will replace the Marginal Cost of Losses at the otherwise applicable source for such Schedules with the Marginal Cost of Losses at the 500 kV bus of Tracy substation. The CAISO will establish Resource IDs that are to be used only to submit Bids, including Self-Schedules, for the purpose of establishing Schedules that are eligible for this loss adjustment. The CAISO will require the Scheduling Coordinator for such Schedules to provide an affidavit stating that it is using this established Resource ID only for Bids, including Self-Schedules that (a) use the California-Oregon Transmission Project, and (b) are charged for losses by the Western Area Power Administration or Transmission Agency of Northern California for the use of the California-Oregon Transmission Project. Such replacement of Marginal Cost of Losses is subject to a quarterly verification by the Scheduling

Coordinator receiving such adjustments. Through this verification the Scheduling Coordinator shall state under penalty of perjury the actual amounts in losses paid to Western Area Power Administration or Transmission Agency of Northern California for the use of the California-Oregon Transmission Project. In the event that the Scheduling Coordinator ceases to pay, or pays an amount for transmission losses to Western Area Power Administration or the Transmission Agency of Northern California that is less than the amount that the Scheduling Coordinator would otherwise have paid the CAISO for charges associated with the applicable Marginal Cost of Losses for their Schedules at the applicable Interties, the CAISO will adjust the losses charges for such Scheduling Coordinator to ensure that appropriate marginal losses are paid and determine any amounts owing from prior periods.. Any amounts owed to the CAISO for such Payments will be recovered in subsequent Settlements Statements and the CAISO shall with net any Payments owed to such Scheduling Coordinators until the outstanding amounts are fully recovered.

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