

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. 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 Develop and 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 IBAA's to provide ~~alternative~~ modeling and pricing for imports or exports between the IBAA to the CAISO if the ~~IBAA entity~~MEEA signatory provides ~~the~~ required information as specified herein.

27.5.3.2.1 Information Required to Develop a Market Efficiency Enhancement Agreement

During the process of establishing an MEEA, the CAISO may ~~require that any signatory to~~request from the entity seeking to negotiate an MEEA ~~provide~~ historical hourly metered generation data for ~~all~~the entity's supply resources within the IBAA and the entity's metered load data within the IBAA in a standard electronic format, ~~for use in determining~~. This data will be used to determine the following details of the specific MEEA:

(a) the injection and withdrawal points ~~that will be used~~ to model the IBAA under the MEEA, ~~pursuant to Section 27.5.3.9.~~

(b) the list of external supply resources and loads within the IBAA over which the MEEA signatory has control or is the Load Serving Entity (for these purposes control includes ownership or any contractual arrangements that provide scheduling control and/or financial benefits of a resource);

(c) the appropriate Resource IDs that apply for the MEEA transactions pursuant to Section 27.5.3.9; and

(d) how the LMPs for transactions under the MEEA will be calculated.

27.5.3.2.1 Information Required to Obtain Pricing Under a Market Efficiency Enhancement Agreement

After the establishment of an MEEA, ~~in order to obtain the alternate pricing agreed to in the MEEA, the IBAA entity~~the CAISO or MEEA signatory may request updates of this historical data to update the model of the IBAA under the MEEA. The MEEA signatory controlling such supply resources or serving such load under the MEEA must provide the following historical hourly information in order for the MEEA pricing rules as further specified below and in the MEEA to take effect:

- (a) total metered generation owned or under the control of the MEEA signatory 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 by the MEEA signatory into the IBAA from other Balancing Authority Areas (excluding the CAISO Balancing Authority Area);
- (c) total gross energy purchases made by the MEEA signatory at delivery points within the IBAA, including:
 - (i) purchases from third parties, and
 - (ii) exchanges acquiring energy from third parties;
- (d) total metered 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~~by the MEEA signatory within the IBAA;

- (e) total gross energy scheduled by the MEEA signatory out of the IBAA into other Balancing Authority Areas (excluding the CAISO) Balancing Authority Area);
- (f) total gross energy sales made by the MEEA signatory 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 Area or reduced as the ~~location of load in the IBAA served by result of~~ an export Interchange transaction from the CAISO Balancing Authority Area. ~~Data provided~~ This hourly data shall include ~~schedules, exchanges and transactions~~ the data for the MEEA signatory itself and any ~~organizational or financial affiliation with the MEEA signatory of its Affiliates or any other organization under its control. Data shall be provided in standard electronic format in a manner and timeline that is consistent with the rules for the submission of meter data submissions timeline specified in Section 10.~~ In addition, in the event that there is a Dynamic Resource-Specific System Resource in the IBAA, the ~~IBAA entity~~ MEEA may further provide that the MEEA signatory in control of such resource may also obtain ~~alternative~~ pricing under the MEEA 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.~~ Based on the historical hourly data, if during any Trading Hour in which the CAISO has determined that an MEEA signatory (or any of its Affiliates or any other organization under its control) makes purchases and sales from the CAISO Balancing Authority Area, all of the MEEA signatory's purchases and sales from the CAISO Balancing Authority Area will be settled using the default IBAA price specified in Appendix C Section G.1 for the corresponding volume and time period.

27.5.3.2.2 Imports into the CAISO Balancing Authority Area

Under the MEEA, imports into the CAISO Balancing Authority Area at Scheduling Points that are part of an IBAA will be paid pursuant to the MEEA price as opposed to the IBAA default pricing specified in Appendix C, Section G.1, subject to the following requirements: During each Trading Hour, the volume of imports from the IBAA into the CAISO Balancing Authority Area by the MEEA signatory that would be eligible for MEEA pricing each hour is limited to the MEEA maximum eligible sales to CAISO. The MEEA maximum eligible sales to CAISO is determined as the MEEA metered generation within the IBAA less the MEEA metered load, MEEA gross exports from the IBAA to other Balancing Authority Areas, and the MEEA gross sales within the IBAA. The MEEA metered generation is the total metered output of the generating resources within the IBAA under the control of the MEEA signatory, The MEEA metered load is the total metered load served by the MEEA signatory in the IBAA. The MEEA gross exports from the IBAA to other Balancing Authority Areas includes all energy exports scheduled and delivered (i.e., “e-tagged”) by the MEEA signatory on Interchanges between the IBAA to other Balancing Authority Areas (excluding the CAISO Balancing Authority Area). MEEA gross sales within the IBAA by the MEEA signatory includes all energy sales or exchanges made with other entities at delivery points within the IBAA.

For any energy imports into the CAISO Balancing Authority Area in excess of this maximum limit, the MEEA signatory will be paid the default IBAA price specified in Appendix C Section G.1 ~~for the corresponding volume and time period.~~

27.5.3.2.3 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) — Under the MEEA, exports from the CAISO Balancing Authority Area in to the IBAA at Scheduling Points that are part of an IBAA will be charged pursuant to the MEEA price as opposed to the IBAA default pricing specified in Appendix C, Section G.1, subject to the following requirements. During any other hour in which an MEEA ~~entity~~ signatory makes purchases from the CAISO Balancing Authority ~~from the IBAA Area~~, the MEEA ~~entity~~ signatory will be charged the ~~alternative pricing~~ MEEA price for any purchases from the CAISO Balancing Authority Area up to the ~~following quantity: Maximum Eligible~~~~

~~Purchases~~ MEEA maximum eligible purchases from CAISO Balancing Authority Area ~~= Load -~~
~~Generation - Gross Imports into IBAA - Gross Purchases within IBAA.~~ The MEEA maximum eligible purchases from CAISO Balancing Authority Area is the MEEA metered load less the MEEA metered generation, MEEA gross imports into the IBAA, and less MEEA gross purchases within IBAA. MEEA metered generation represents the total metered output of generating resources within the IBAA under the control of the MEEA signatory. MEEA metered load represents the total metered load served by the MEEA signatory in the IBAA. MEEA gross imports into the IBAA from other Balancing Authority Areas, by the MEEA signatory, including all energy imports by the MEEA signatory into the IBAA scheduled and delivered (i.e. "e-tagged") on Interchanges between the IBAA to other Balancing Authority Areas (excluding the CAISO Balancing Authority Area). MEEA gross purchases within the IBAA by the MEEA signatory include all energy purchases or exchanges made with other entities by the MEEA signatory at delivery points within the IBAA. For any energy purchases from the CAISO Balancing Authority Area in excess of this maximum limit, the MEEA ~~entity~~ signatory will be charged the default ~~pricing point~~ IBAA price specified in Appendix C Section G. 2.1 for the corresponding volume and time period.

27.5.3.3 Process for Establishing a 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~~ and 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~~ entity shall negotiate in good faith the terms and conditions of the MEEA. The CAISO shall file ~~an~~ any 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.]

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

Data provided to the CAISO pursuant to ~~an~~ 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~~ The data concerning hourly transactions shall be used solely for pricing MEEA transactions and for the determination of the eligible amounts as specified in the sections above. The configuration of the pricing points for the MEEA, which may include specific distribution factors for the represented resources, established through the negotiation of the MEEA will also be used for the purposes of modeling the resources in the IBAA subject to the MEEA. The CAISO and the MEEA signatory may agree to changes to these configurations over time that do not require the renegotiation of the terms of the MEEA or may agree to static terms until such time the parties re-execute a new MEEA. Such modeling information regarding the location of the 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.~~ Full Network Model, including the CRR FNM, which is used for all CAISO Markets as further described in Section 27.3. The FNM and the CRR FNM will not include the hourly transactional data provided pursuant to Section 27.5.3.2 above, except in such cases where the CAISO and the MEEA signatory have agreed to dynamic changes to the configuration of the modeling of the MEEA resources during the life of the agreement as further provided by the 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. Such audit shall be for the limited purposes of verifying that the MEEA signatory has accurately represented their available resources and has met the maximum requirements specified under Section 27.5.3.2. Upon request of the CAISO as part of ~~an~~such audit, any signatory to an MEEA ~~must~~shall provide ~~requested~~ information to support the hourly information provided under Section 27.5.3.2. ~~Any~~An MEEA 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.~~through the CAISO's Settlement and Billing Process set forth in Section 11 and through data provided to the MEEA signatory as a Market Participant under the Tariff. 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 modify an existing IBAA. 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 modify an existing IBAA, 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; at which time the CAISO shall also provide its supportive findings for the establishment of the new IBAA or modification to an existing IBAA.

27.5.3.8.1 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.

27.5.3.9 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 IBAA's, are provided in the Business Practice Manuals. Alternative Resource IDs to be used instead of the default Resource IDs ~~may~~will 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. 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 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~~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~~ These 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 to the CAISO~~ will be based on the LMP calculated for the SMUD/TID IBAA ~~hub~~ Import LMP and all imports ~~from the IBAA(s) will be based on a mapping to the IBAA(s) from the CAISO will be based on the LMP calculated for the SMUD/TID IBAA Export LMP. The SMUD/TID Import LMP will be based on modeling of supply resources that assumes all supply is from~~ the Captain Jack substation as defined by WECC. The SMUD/TID Export LMP ~~for the SMUD hub~~ will be based on the SMUD hub that reflects Intertie distribution factors developed from a seasonal power flow base case study 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~~ that requires that the SMUD ~~IBAA hub~~ is equivalenced to only the buses that comprise the System Resources, with all generation also being retained at its buses within the IBAA. 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.~~

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 and the 230 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~~ Prior to

obtaining such Resource IDs, the relevant Scheduling Coordinators shall certify that that it will only use this established Resource ID ~~only~~ for Bids, including Self-Schedules, that originate from transactions 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~~ Further, by actually using such Resource ID, the Scheduling Coordinator represents that such Bids, including Self-Schedules, originate from transactions that (a) use 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.,~~ 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. Schedules and Dispatches settled under such Resource IDs shall be subject to an LMP which has accounted for the Marginal Cost of Losses as if there is an actual physical generation facility at the Tracy Scheduling Point as opposed to the Marginal Cost of Losses under the IBAA LMPs specified in Section G.1.1 of this Appendix.

The CAISO may, from time-to-time request information from such Scheduling Coordinators to verify the legitimate use of such Resource IDs. The CAISO will calculate a re-adjustment of the Marginal Cost of Losses for any Settlement Interval in which the CAISO has determined that the Scheduling Coordinator's payments did not reflect transactions 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. Any amounts owed to the CAISO for

such ~~Payments~~ Marginal Cost of Losses re-adjustments will be recovered by the CAISO from the affected Scheduling Coordinator by netting the amounts owed from payments due 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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