California Independent
System Operator Corporation

Integrated Balancing Authority Area – Market Efficiency Enhancement Agreements Pricing Principles and Examples on Use of Data

Department of Market Monitoring
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On compliance to the Federal Energy Regulatory Commission's order issued on September 18, 2008, on the California Independent System Operator Corporation's (CAISO) Integrated Balancing Authority Area (IBAA) filing the CAISO is proposing specific tariff language that stipulates the data required by the CAISO from market participants for the purposes of entering into a Market Efficiency Enhancement Agreement (MEEA). This paper discusses and provides examples of the pricing principles under the MEEA and how that data will be used to establish pricing to apply to MEEA signatories as opposed to the IBAA default pricing.

The fundamental goal of pricing rules under an MEEA is to ensure that MEEA pricing is provided only when the incremental source of generation supporting an import to the CAISO, or being reduced as a result of an export from the CAISO, is actually located at the injection/withdrawal points used to model and price the system of resources and loads within the IBAA of the entity entering into the MEEA. In addition to controlling actual generation within an IBAA, CAISO recognizes that entities may also engage in bilateral transactions within the IBAA and may import/export energy on interties between the IBAA and other Balancing Authority Areas (BAAs). Consequently, to ensure the fundamental pricing goal of an MEEA is achieved, CAISO requires additional data and settlement rules because it is not sufficient to simply verify the output of any physical generation resources under control of the MEEA entity within the IBAA. For example, data and rules are necessary to ensure that the incremental source of any energy being imported into the CAISO is not actually energy being imported into the IBAA from another Balancing Authority Area or purchased from another entity within the IBAA Area.

MEEA Pricing Principles:

In the application of the basic pricing principle described above, during each hour, the volume of imports from the IBAA into the CAISO *by the MEEA* signatory that would be eligible for MEEA pricing each hour would be limited as follows:

> Maximum Eligible Sales to CAISO = Metered Generation – Metered Load – Gross Exports from IBAA to other BAs – Gross Sales within the IBAA

Where:

Metered Generation represents the total metered output of generating resources within the IBAA under the control of the MEEA signatory. "Control" of resources includes ownership or any contractual arrangements that provide scheduling control and/or financial benefits of a resource.

Metered Load represents the total metered load served by the MEEA signatory in the IBAA.

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 interties between the IBAA to other Balancing Authority Areas (excluding the CAISO).

Gross Sales within the IBAA by the MEEA signatory, including all energy sales or exchanges made with other entities at delivery points within the IBAA.

All of the above calculations for the MEEA signatory must include data for all Affiliates of the MEEA signatory or entities over which the MEEA signatory exercises operational control. The term "affiliate" of a MEEA signatory is as defined in the CAISO tariff.[1] For purposes of these rules, the CAISO shall consider that an MEEA signatory has operational control of resources and/or loads represented by Scheduling Coordinator IDs used by that MEEA signatory.

During any hour in which an MEEA signatory makes sales to the CAISO (in either the IFM, HASP or RTM) at an intertie point between the IBAA and the CAISO at the same time that the MEEA signatory is making an energy purchase from the CAISO Balancing Authority Area, (in either the IFM, HASP or RTM) at an intertie point between the IBAA and the CAISO, the MEEA signatory will not be charged/paid based on the MEEA pricing LMP, but rather will be charged/paid the default pricing points for the corresponding volume and time period.

For any energy sales into the CAISO Balancing Authority Area in excess of this maximum limit, the MEAA signatory will receive the default pricing point for the corresponding volume and time period

Similarly, during each hour, the volume of exports from the CAISO into the IBAA by the MEEA signatory that would be eligible for MEEA pricing each hour would be limited as follows:

Maximum Eligible Purchases from CAISO = Metered Load – Metered Generation – Gross Imports to IBAA from other Balancing Authority Areas – Gross Purchases within IBAA

Where:

[1] Affiliate under the CAISO tariff is defined as: "With respect to a corporation, partnership or other entity, each such other corporation, partnership or other entity that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, such corporation, partnership or other entity."

Metered Generation represents the total metered output of generating resources within the IBAA under the control of the MEEA signatory. "Control" of resources includes ownership or any contractual arrangements that provide scheduling control and/or financial benefits of a resource.

Metered Load represents the total metered load served by the MEEA signatory in the IBAA.

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 interties between the IBAA to other Balancing Authority Areas (excluding the CAISO).

Gross Purchases within the IBAA by the MEEA signatory, including all energy purchases or exchanges made with other entities at delivery points within the IBAA.

For any energy purchase from the CAISO Balancing Authority in excess of this maximum limit, the MEAA signatory will pay the default pricing point for the corresponding volume and time period.

During any hour in which an MEEA signatory makes purchase from the CAISO Balancing Authority Area (in either the IFM, HASP or RTM) at an intertie point between the IBAA and the CAISO Balancing Authority Area at the same time that the IBAA entity is making an energy sale to the CAISO Balancing Authority Area, (in either the IFM, HASP or RTM) at an intertie point between the IBAA and the CAISO Balancing Authority Area, the MEEA signatory will not be charged/paid based on the MEEA pricing but rather will be charged/paid the default pricing point for the corresponding volume and time period.

Illustrative Examples

Table 1 illustrates how these settlement rules would apply to a Load Serving Entity signatory to a MEEA, that had generation in excess of its load during any hour (i.e. was "long" on physical generating resources within the IBAA).

- As shown in example A1, if the MEEA signatory had 1,000 MW of generation and 900 MW of load, the MEEA signatory would be eligible to sell up to 100 MW into the CAISO at pricing under an MEEA. The logic of this is that the physical source of the full 100 MW was the entity's generation within the IBAA.

- As shown in example A2, if the MEEA signatory also had an additional 50 MW of supply from any combination of imports from other Balancing Authority Areas and/or purchases within the IBAA during this hour, the MEEA signatory could sell a total of 150 MW into the CAISO Balancing Authority Area, but would be eligible to receive the pricing under an MEEA for only 100 MW of these imports. The logic of this example is that these other sources of supply could account for up to 50 MW of energy imported into the CAISO by the MEEA signatory, so that the entity's physical generation in the IBAA may only account for 100 MW of the 150 MW of imports.

- Example A3 illustrates a case where the MEEA signatory becomes eligible to receive pricing under an MEEA for only 50 MW out of 100 MW of sales to the CAISO. As in Example A2, the MEEA signatory has a total of 50 MW of additional supply from imports from other Balancing Authority Areas and/or purchases within the IBAA. In addition, the MEEA signatory has a total of 50 MW of exports to other Balancing Authority Areas and sales within the IBAA. As a result, while the MEEA signatory could sell up to 100 MW of supply to the CAISO from the IBAA, the entity becomes eligible to receive pricing under the MEEA for only 50 MW. The logic of this is that up to 50 MW of the sales to the CAISO could be made as a result of the entities 50 MW of additional supply from imports from other Balancing Authority Areas and/or purchases within the IBAA.[2]

- Example A4 is similar to Example A3, but illustrates how the entity may become ineligible to sell any of its excess supply at pricing under an MEEA due to the fact that the total amount of supply exported to other Balancing Authority Areas or sold within the IBAA (100 MW) equals the margin by which the entity's physical generation exceeds its load within the IBAA (1,000 MW Generation – 900 MW Load = 100 MW Generation). Again, the logic illustrated in this scenario is that since the entity's entire 100 MW of excess generation may have been used to support exports to other Balancing Authority Areas or sales within the IBAA, the entity is not eligible to receive MEEA pricing for imports to the CAISO. In other words,

[2] The MEEA signatory may contend that the 50 MW of additional supply from imports from other Balancing Authority Areas and purchases within the IBAA were actually used to support the 50 MW of exports to other Balancing Authority Areas and sales within the IBAA, while the full 100 MW of imports to the CAISO were sourced from the entity's 100 MW of physical generation in excess of load (1,000 MW Generation - 900 MW Load = 100 MW Generation). However, in order to prevent potential gaming or misapplication of MEEA pricing provisions, the formula used is designed to effectively assume that any excess physical generation is first used to meet bilateral sales or exports to other Balancing Authority Areas, with any remainder being eligible for actual pricing under the MEEA.

while the entity had 50 MW of additional supply to sell to the CAISO under this scenario, this supply supporting these sales may be the 50 MW of additional supply from imports from other Balancing Authority Areas and/or purchases within the IBAA.

- Example A5 is similar to Example A4, but illustrates that while the entity could increase its sales into the CAISO by increasing its imports from other Balancing Authority Areas or purchases within the IBAA, it would remain ineligible to sell any of its excess supply at pricing under an MEEA due to the fact that the 100 MW of supply exported to other Balancing Authority Areas or sold within the IBAA equals the margin by which the entity's physical generation exceeds its load within the IBAA.

Table 1, Scenario A - LSE with Generation > Load ("Long")

	A1	A2	A3	A4	A5
Generation (minus est. losses)	1,000	1,000	1,000	1,000	1,000
Gross Imports from other BAs	0	25	25	25	50
Gross non-CAISO Purchases	0	25	25	25	50
Load	900	900	900	900	900
Gross exports to other BAs	0	0	25	50	50
Gross non-CAISO Sales	0	0	25	50	50
Potential Sales to CAISO	100	150	100	50	100
Eligible Sales to CAISO	100	100	50	0	0
Non-Eligible Sales to CAISO	0	50	50	50	100

Table 2 provides a series of examples illustrating how these settlement rules would apply to a non-Load Serving Entity owning or controlling physical generating resources within the IBAA.

- As shown example B1, a MEEA signatory with 1,000 MW of generation and no other schedules or transactions could sell up to 1,000 MW into the CAISO at the pricing under an MEEA.

- As shown in example B2, if the MEEA signatory also had an additional 50 MW of supply from any combination of imports from other Balancing Authority Areas and/or purchases within the IBAA during this hour, the entity could sell a total of 1,050 MW of imports into the CAISO. However, the MEEA signatory could receive pricing under an MEEA for only 1,000 MW of these imports, since a maximum on of 1,000 MW of imports could have been supported by the entity's generation within the IBAA.

- Example B3 is similar to B2, but assumes that the entity also had an additional 50 MW of export to other Balancing Authority Areas or sales within the IBAA. Under these conditions, the entity could receive pricing under an MEEA for only 950 MW of imports to the CAISO (1,000 MW of generation minus 50 MW of other IBAA exports/sales). Again the logic of

this approach is that up to 50 MW of imports to the CAISO may have been supported by the entity's imports from other Balancing Authority Areas or purchases within the IBAA.

- Examples B4 and B5 further illustrate how the amount of sales to the CAISO eligible for pricing under an MEEA could be limited by the entity's imports/export with other Balancing Authority Areas and sales/purchases within the IBAA.

Table 2, Scenario B – Non-LSE with Generation

	B1	B2	B3	B4	B5
Generation (minus est. losses)	1,000	1,000	1,000	1,000	1,000
Gross Imports from other BAs	0	25	25	25	50
Gross non-CAISO Purchases	0	25	25	25	50
Load	0	0	0	0	0
Gross exports to other BAs	0	0	25	50	50
Gross non-CAISO Sales	0	0	25	50	50
Potential Sales to CAISO	1,000	1,050	1,000	950	1,000
Eligible Sales to CAISO	1,000	1,000	950	900	900
Non-Eligible Sales to CAISO	0	50	50	50	100