UNITED STATES OF AMERICA BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator) Corporation) Docket No. ER08-1113-04 Docket No. ER08-1113-05

PRESENTATION OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION AT THE AUGUST 20, 2009 TECHNCIAL CONFERENCE

The California Independent System Operator Corporation ("the ISO") hereby submits a

copy of its presentation provided at the August 20, 2009 technical conference in the above-

captioned matter. This filing is made pursuant to the direction of the Federal Energy Regulatory

Commission ("the Commission"). At the August 20, 2009 technical conference, the

Commission requested that the ISO file a copy of it presentation.¹

Respectfully submitted,

/s/ Roger E. Smith

/s/ Andrew Ulmer

Roger E. Smith Schiff Hardin LLP 1666 K Street, NW; Suite 300 Washington, DC 20006 Tel: 202-778-6425 (facsimile) 202-778-6460 resmith@schiffhardin.com Anna McKenna Andrew Ulmer The California Independent System Operator Corporation 151 Blue Ravine Road Folsom, CA 95630 Tel: (916) 608-7209 Fax: (916) 608-7296 amckenna@caiso.com aulmer@caiso.com

> Attorneys for the California Independent System Operator Corporation

Dated: September 10, 2009

¹ See, Notice of Extension of Time dated September 9, 2009 in ER08-1113-04 and ER08-1113-05 in which the Commission reiterated that "the Commission instructed the parties that presented during the technical conference to file their presentations in the above dockets. Such filings should be made as soon as practicable."

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for 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 10th day of September 2009.

<u>/s/ Jane Ostapovich</u> Jane Ostapovich



Integrated Balancing Authority Area



FERC Technical Conference Docket ER08-1113

Mark Rothleder, Principal Market Developer California ISO

> Dr. Scott M. Harvey, Director, LECG

August 20, 2009

The IBAA structure uses Locational Marginal Pricing to manage congestion on the ISO grid.

- The IBAA structure seeks to develop accurate LMPs for interchange transactions
- LMPs should reflect the location of the change in generation output supporting the transaction and the impact of the associated power flows on binding transmission constraints on the ISO grid



The IBAA structure provides for default and alternative pricing.

- The IBAA structure provides for default pricing for interchange transactions between the ISO and IBAA
- Alternative pricing is available under a Market Efficiency Enhancement Agreement (MEEA) for entities that seek a price that reflects the actual location of the external resource supporting an interchange transactions.



The ISO requires historical and network information to negotiate a MEEA.

- Hourly metered generation data
 - Allows ISO and IBAA entity to develop weighted distribution factors for LMPs that apply to schedules and bids submitted for resources identified in a MEEA
- Hourly metered load data
 - Allows ISO and IBAA entity serving load to assess pattern of power flows in the IBAA system for accurate modeling of resources identified in a MEEA
- Injection and withdrawal points for MEEA resources
 - Allows ISO and IBAA entity to specify the location of resources identified in a MEEA



The ISO requires after-the-fact information to verify the operation of a MEEA resource.

- The ISO must verify that output of external resources identified in a MEEA increased or decreased sufficiently to support an interchange transaction
- A MEEA signatory need only submit this information in the settlement interval for which it seeks alternative pricing
- Under its tariff the ISO will use the information solely for the purpose of settling interchange transactions



Supply information is necessary to verify whether a MEEA resource operated to support an interchange transaction.

- Metered generation is necessary to determine if there is sufficient level of MEEA generation to support an interchange transaction
- Imports from other Balancing Authority Areas are necessary to determine if there are other resources that may be supporting an interchange transaction
- Purchases or exchanges within the IBAA are necessary to determine if there are other resources that may be supporting an interchange transaction

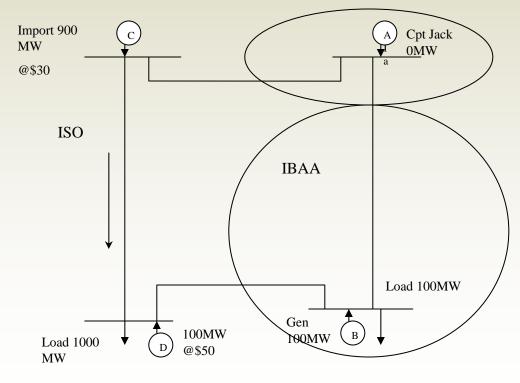


Demand information is necessary to verify the operation of a MEEA resource to support an interchange transaction.

- Metered load identified in an MEEA is necessary to determine if generation identified in an MEEA is serving a purpose other than supporting an interchange transaction
- Exports to other Balancing Authorities Areas also necessary to determine if the generation identified in an MEEA is serving a purpose other than supporting an interchange transaction
- Sales or exchanges within the IBAA if generation identified in an MEEA is serving a purpose other than supporting an interchange transaction

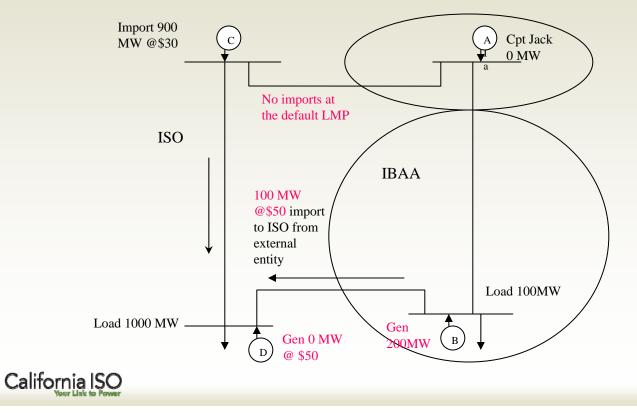


This diagram reflects load and generation in the IBAA, low-cost imports into ISO and high-cost generation in the ISO

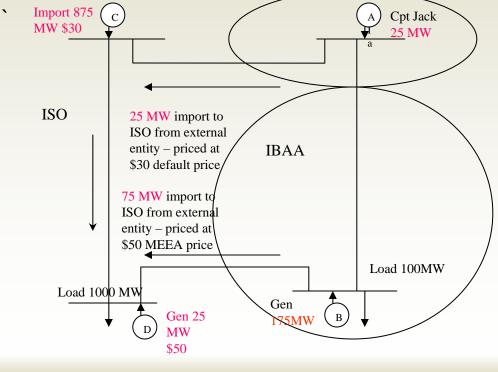




- IBAA entity generates 200 MW and imports 100 MW from the IBAA to the ISO pursuant to a MEEA
- The IBAA import enables the ISO to back-down 100MW of high-cost generation in the ISO
- The appropriate price for imports from the MEEA supported by generation at location B is \$50 instead of the \$30 IBAA default price

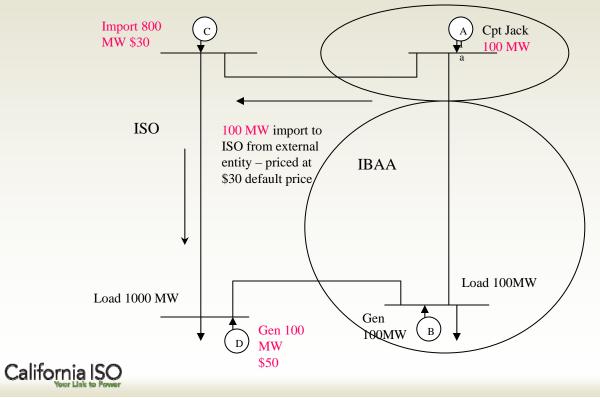


- Generator at B generates 175 MW; the MEEA entity submits a MEEA bid or schedule to import 100 MW from the IBAA to the ISO; and also imports 25 MW into the IBAA from the Pacific Northwest
- The ISO must back-down 25 MW of low-cost generation or imports to accommodate the IBAA import
- In this case IBAA entity would be eligible for MEEA price of \$50 for 75 MW of the 100 MW import to ISO

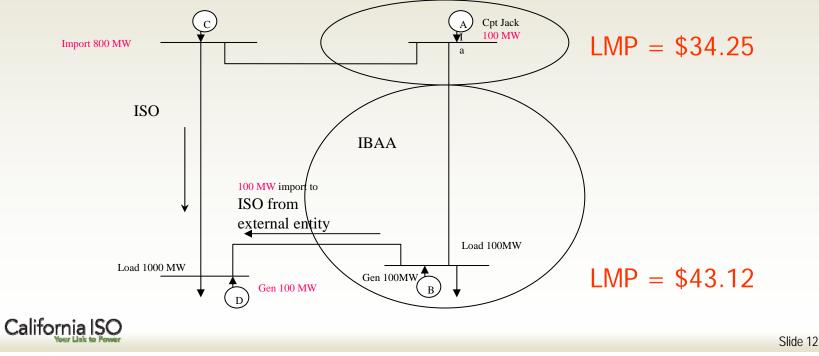




- Generator at B generates 100 MW; the MEEA entity submits a MEEA bid or schedule to import 100 MW from the IBAA to the ISO; and also imports 100 MW into the IBAA from the Pacific Northwest
- The ISO must back-down 100 MW of low-cost generation or imports to accommodate the IBAA import



- Example from actual market: The constraint 32212_E.NICOLS_115_32214_RIO OSO _115_BR_1 _1 was congested for 158 hours during the first quarter of MRTU operation. In 18 hours, this constraint's shadow price exceeded \$400/MW.
- Using 5/14/09, Hour Ending 15:00, as example: shadow price of constraint = \$472.63, LMP for resources mapped to Capt. Jack = \$34.25/MWh, and LMP for resources mapped to SMUD Hub = \$43.12. The difference between LMPs = \$8.87 (26% of the SMUD Hub's LMP). Paying 100 MW of Northwest imports at the SMUD Hub price would overpay the imports by \$887 in this hour.



The IBAA structure requires a verification process.

- LMPs for interchange transactions should reflect the value of those transactions given their actual impact on congestion on the ISO grid
- By providing alternative pricing without the proper verification data, the ISO could potentially pay an external entity LMPs for imported power that exceed the actual value of the interchange transaction to the ISO's markets and still require the ISO to re-dispatch internal resources to address congestion created by an external entity's scheduling practices



Other ISO/RTOs have designed or are designing similar structures.

PJM Interconnection

- Single Interface Pricing Point (SOUTHIMP and SOUTHEXP)
- High-Low Pricing (Applicable to external regions providing additional information and meeting interchange criterion)
- Marginal Cost Proxy Price (Under development for external regions providing additional information including generator cost data and meeting interchange criterion)



PJM's information requirements for High-Low pricing

"Such pricing point and pricing methodology shall be provided only to the extent the external balancing authority area or sub-area provides or causes to be provided to PJM real-time telemetered load, generation and similar data for such area or sub-area demonstrating that the transaction receiving such pricing sources, or sinks as appropriate, in such area or sub-area. Such data shall be of the type and in the form specified in the PJM Manuals."

PJM Operating Agreement, Second Revised Sheet No.106A.



PJM's information requirements for Marginal Cost Proxy pricing

"Such pricing point and pricing methodology shall be provided only to the extent the external balancing authority area or sub-area provides or causes to be provided to PJM (i) unit-specific, real-time telemetered output data for each unit in the PJM network model in such area or sub-area; (ii) unit specific marginal cost data for each unit in the PJM network model in such area or sub-area, prepared in accordance with the PJM Manuals and subject to the same review of the PJM Independent Market Monitor as any such cost data for internal PJM units; and iii) a day-ahead indication of each unit in such area or sub-area as to whether that unit is scheduled to run for each hour of the following day."

PJM Operating Agreement, Second Revised Sheet No.106C.



PJM's Interchange Criterion for High-Low or Marginal Cost Proxy pricing

"During any hour in which any entity makes any purchases from other external areas outside of such area or sub-area (other than delivery of external designated network resources or such other exceptions specifically documented for such area or sub-area in the PJM Manuals) at the same time that energy sales into PJM are being made, or purchases energy from PJM for delivery into such area or sub-area while sales from such area to other external areas are simultaneously implemented (subject to any exceptions specifically documented for such area or sub area in the PJM manuals), pricing will revert to the applicable import or export pricing point that would otherwise be assigned to such external area or subarea."

Second Revised Sheet Nos.106A-106B (High-Low Pricing) and Second Revised Sheet Nos.106C (Marginal Cost Pricing), PJM Operating Agreement.

