

IMM Marginal Loss Allocation Methodology Recommendation

TITF

October 26, 2010

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Monitoring Analytics

History

- **FERC Order (Docket EL08-14) required marginal loss surplus allocations for up to congestion transactions submitted in the PJM Day-Ahead Market:**
 - **These transactions require the purchase of transmission, thus contribute to the fixed costs of the transmission system, and are entitled to a share of the marginal loss surplus.**



History

February 24, 2009 Order On Request For Clarification

The Commission “clarify[ied] that we did not intend to exclude virtual traders to the extent that those traders make transmission payments that contribute to the fixed costs of the transmission grid. Accordingly, ... PJM must either propose tariff revisions that allocate transmission losses equitably among all parties that support the fixed costs of the transmission system, **without regard to whether such parties serve load**... .. In addition to virtual traders who pay transmission charges associated with Up-To congestion transactions, such proposed revisions also would include any customer with point to point transmission service or grandfathered transmission service.”



History

May 15, 2010 – Section 5.5 of PJM Tariff revision

The total Transmission Loss Charges accumulated by the Office of Interconnection in any hour shall be distributed pro-rata to each Network Service User and Transmission Customer in proportion to its ratio shares of the total MWhs of energy delivered to load (net of operating Behind The Meter Generation, but not to be less than zero) in the PJM Region that paid for transmission service during such hour), or the total exports of MWh of energy from the PJM Region, or the total MWh of cleared Up-To Congestion transactions (that paid for transmission service during such hour).



Background

Hourly MLSA Calculation per tariff

Date/Hour	Total PJM Loss Revenues (\$)	RT Load (MWh)	RT Exports (MWh)	Up-To Congestion Transactions (MWh)	Total PJM RT Load plus Exports plus Up-To Congestion Transactions (MWh)
07/01/2010 01	50,000	70,000	2,000	8,000	80,000

Hourly MLSA = (Total PJM Loss Revenues) /
(Total PJM RT Load plus Exports plus
Up-To Congestion Transactions)

$$= 50,000 / 80,000 = \$0.63 / \text{MWh}$$

Background

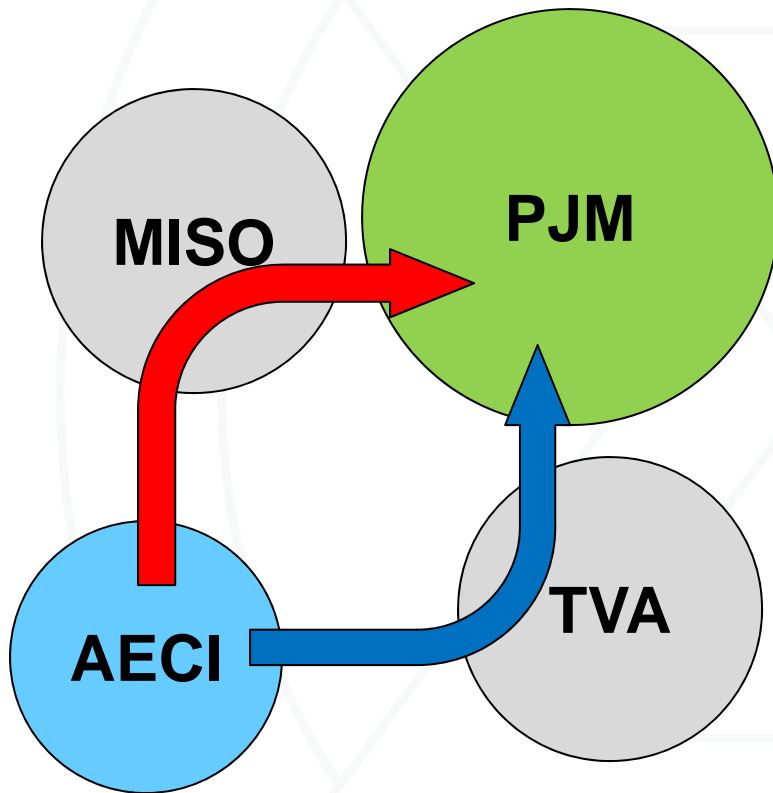
Participant MLSA Allocation per tariff

Date/Hour	Total PJM Loss Revenues (\$)	RT Load (MWh)	RT Exports (MWh)	Up-To Congestion Transactions (MWh)	Total participant RT Load plus Exports plus Up-To Congestion Transactions (MWh)
07/01/2010 01	50,000	1,000	200	100	1,300

$$\begin{aligned} \text{MLSA} &= (\text{hourly MLSA}) * \\ &\quad (\text{Total participant RT Load plus Exports plus} \\ &\quad \text{Up-To Congestion Transactions}) \\ &= \$0.63 * 1,300 = \$819.00 \end{aligned}$$

Background

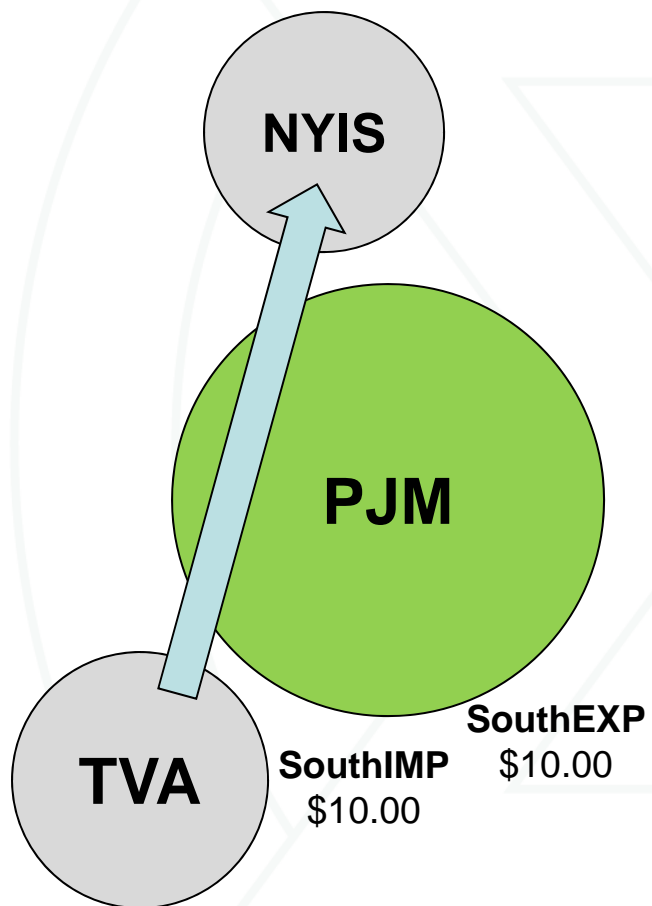
Designation of Import / Export Pricing Points



- RT Scheduled Path: AECI-MISO-PJM
- PJM OASIS: MISO-PJM
- AECI Interface Pricing Point: SouthIMP
- DA: Specify SouthIMP as Import Pricing Point to match expected real-time flow

Issue 1

Wheel Example



- **PJM OASIS: TVA-PJM-NYIS**
- **DA - Set Import PP: SouthIMP**
- **DA - Set Export PP: SouthEXP**
- **DA LMP at SouthIMP = DA LMP at SouthEXP**
- **RT LMP at SouthIMP = RT LMP at SouthEXP**
- **Zero charges, zero credits**
- **Transmission = \$0.67/MWh**
- **Marginal loss surplus allocation = \$1.85**
- **Profit of \$1.18 for every MW scheduled**

Issue 1

- **Designating an up to congestion wheeling transaction with an import pricing point of SouthIMP and an export pricing point of SouthEXP creates a net zero settlement result as SouthIMP and SouthEXP are modeled the same.**
- **Such a transaction has no fundamental economic rationale.**
- **The only rationale for such a transaction is that the loss surplus allocation is greater than the cost of transmission.**
- **Wheeling transactions at the same interface profited by ~ \$3.5 million in loss surplus allocations between May 15 and August 31, 2010.**

Issue 1

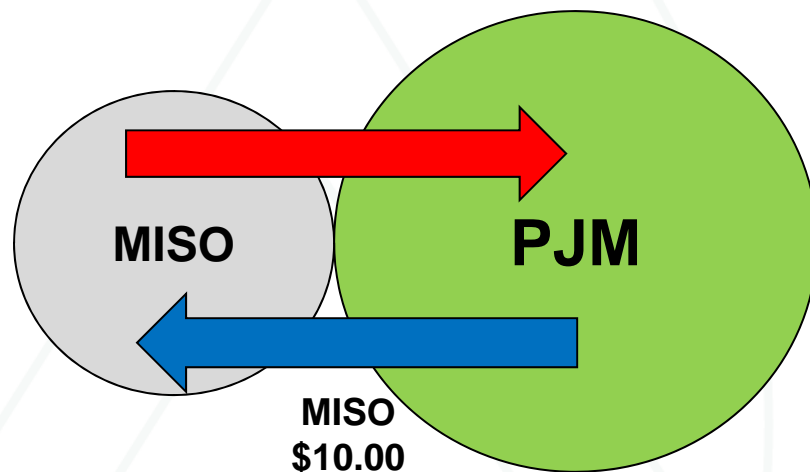
- **Why it worked in the Day-Ahead Market:**
 - **Up-To Congestion transactions are only a Day-Ahead Market product.**
 - **The flexibility allowed market participants to designate import and export pricing points.**
- **Why it didn't work in the Real-Time Market:**
 - **The flexibility of designating interface pricing points did not exist in the Real-Time Market.**
 - **There were (are) no valid transmission paths to/from the same interface.**
- **How it applied to the MLSA:**
 - **The wheeling paths were to non-MISO Balancing Authorities, thus were not free, and qualified for the Marginal Loss Allocation.**



Issue 2

Equal and Opposite Example

- **PJM OASIS 1: MISO-PJM;**
Src:MISO Sink: BusA (\$0.67)
- **PJM OASIS 2: PJM-MISO;**
Src:BusA Sink: MISO (\$0.00)
- **DA Set Import PP: MISO**
(Sink = BusA)
- **DA Set Export PP: MISO**
(Source = BusA)
- **DA LMP for MISO import = DA LMP for MISO export**
- **RT LMP for MISO import = RT LMP for MISO export**
- **Congestion from BusA to MISO = - Congestion from MISO to BusA**
- **Zero charges, zero credits**
- **Transmission = \$0.67+\$0.00 = \$0.67/MWh**
- **Marginal loss surplus allocation = \$1.85**
- **Profit of \$1.18 for every MW scheduled**



Issue 2

- **Submitting a set of equal and opposite up to congestion transactions (one import, one export) at the same bus creates the same effect as a wheeling up to congestion transaction.**
- **Such a transaction has no fundamental economic rationale.**
- **The only rationale for such a transaction is that the loss surplus allocation is greater than the cost of transmission.**
- **Equal and opposite up to congestion transactions profited by ~ \$2.4 million in loss surplus allocations between May 15 and August 31, 2010.**



Issue 2

- **Significant quantities of transmission were purchased, and scheduled against in the Day-Ahead Market with no economic basis other than the marginal loss surplus allocations.**
- **In July, the average marginal loss surplus allocation was ~\$1.32 /MWh compared to the cost of non-firm transmission of \$0.67/MWh**
- **In July, the average on-peak marginal loss surplus allocation was ~\$1.85/MWh**
- **In July, the average off-peak marginal loss surplus allocation was ~\$0.67/MWh**



Issue 2

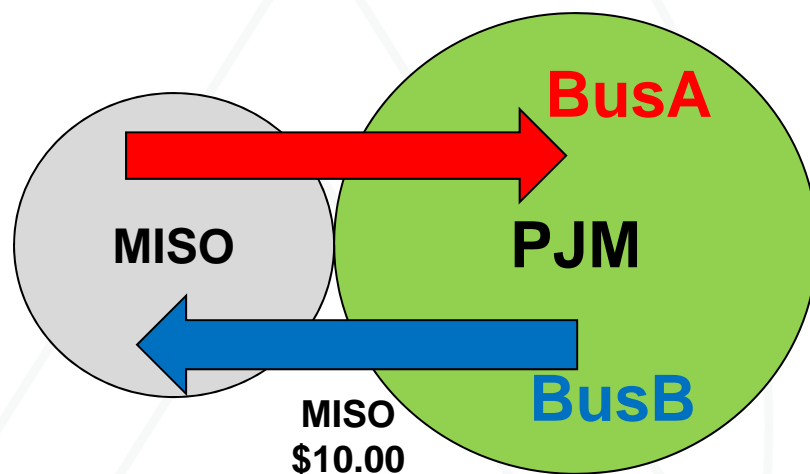
- **Why it worked in the Day-Ahead Market:**
 - **Up-To Congestion transactions are only a Day-Ahead Market product.**
- **Why it didn't work in the Real-Time Market:**
 - **Import transactions did not get a MLSA.**
 - **Export transaction was on free transmission.**
- **How it applied to the MLSA:**
 - **The equal and opposite paths were to MISO, thus the export reservation was free, limiting the transmission exposure to \$0.67.**



Issue 3

But For Example

- **PJM OASIS 1: MISO-PJM;**
Src:MISO Sink: BusA (\$0.67)
- **PJM OASIS 2: PJM-MISO;**
Src:BusB Sink: MISO (\$0.00)
- **DA Set Import PP: MISO**
(Sink = BusA)
- **DA Set Export PP: MISO**
(Source = BusB)
- **DA LMP for MISO import = DA LMP for MISO export**
- **RT LMP for MISO import = RT LMP for MISO export**
- **Congestion from BusA to MISO \sim - Congestion from MISO to BusB**
- **\sim Zero charges, \sim zero credits**
- **Transmission = \$0.67+\$0.00 = \$0.67/MWh**
- **Marginal loss surplus allocation = \$1.85**
- **Profit of \$1.18 (less minimal congestion charge) for every MW scheduled**



Issue 3

- **Submitting a set of equal and opposite up to congestion transactions (one import, one export) at buses close enough to each other creates the same effect as a wheeling up to congestion transaction.**
- **The only rationale for such a transaction is that the loss surplus allocation is greater than the cost of transmission less the minimal exposure to congestion charges between the buses.**
- **“But for” up to congestion transactions profited by ~ \$1.9 million in loss surplus allocations between May 15 and August 31, 2010.**

Issue 3

- **Why it worked in the Day-Ahead Market:**
 - **Up-To Congestion transactions are only a Day-Ahead Market product.**
- **Why it didn't work in the Real-Time Market:**
 - **Import transactions did not get a MLSA.**
 - **Export transaction was on free transmission.**
- **How it applied to the MLSA:**
 - **The equal and opposite paths were to MISO, thus the export reservation was free, limiting the transmission exposure to \$0.67.**



September 17, 2010 Tariff Modification

Section 5.5 of PJM Tariff revision

The total Transmission Loss Charges accumulated by the Office of Interconnection in any hour shall be distributed pro-rata to each Network Service User and Transmission Customer in proportion to its ratio shares of the total MWhs of energy delivered to load (net of operating Behind The Meter Generation, but not to be less than zero) in the PJM Region, or the total exports of MWh of energy from the PJM Region (that paid for transmission service during such hour). Exports of energy for which Non-Firm Point-to-Point Transmission Service was utilized and for which the Non-Firm Point-to-Point Transmission Service rate was paid will receive an allocation of the total Transmission Loss Charges based on a percentage of the MWh of energy exported on such service, determined by the ratio of Non-Firm Point-to-Point Transmission Service rate to Firm Point-to-Point Transmission Service rate.



IMM Concerns / Recommendations

The IMM proposes the following, to be considered by the TITF, as in scope and recommends the wording to be included in the “Key Areas for Activity” in the TITF Charter document, for the purposes of resolving the identified issues:

Analyze potential alternatives to the endorsed/approved Operating Agreement and Tariff revisions in addressing the identified transaction issues:

- Determine all transaction types that contribute to the fixed costs of the transmission system.**
- Define an allocation method based on the contributions to the fixed costs of the transmission system.**
- Limit the allocation method so that it is fully consistent with the final FERC Order on allocation.**

IMM Concerns / Recommendations

February 24, 2009 Order On Request For Clarification

The Commission “clarify[ied] that we did not intend to exclude virtual traders to the extent that those traders make transmission payments that contribute to the fixed costs of the transmission grid. Accordingly, ... PJM must either propose **tariff revisions that allocate transmission losses equitably among all parties that support the fixed costs of the transmission system, without regard to whether such parties serve load...** ... In addition to virtual traders who pay transmission charges associated with Up-To congestion transactions, such proposed revisions also would include any customer with point to point transmission service or grandfathered transmission service.”



IMM Concerns / Recommendations

The current marginal loss surplus distribution method still does not comport with the Commission's February 24th directive that all parties that contribute to the fixed costs of the transmission system should receive an allocation of the surplus marginal losses.



IMM Concerns / Recommendations

DA/RT	Schedule Type	Transmission	Direction	Pays for transmission	Receives Allocation
DA	Fixed	Non-firm	Import	Y	N
DA	Fixed	Non-firm	Export	Y	N
DA	Fixed	Non-firm	Wheel	Y	N
DA	Dispatchable	Non-firm	Import	Y	N
DA	Dispatchable	Non-firm	Export	Y	N
DA	Dispatchable	Non-firm	Wheel	Y	N
DA	Up-To	Non-firm	Import	N	N
DA	Up-To	Non-firm	Export	N	N
DA	Up-To	Non-firm	Wheel	N	N
DA	Fixed	Firm	Import	Y	N
DA	Fixed	Firm	Export	Y	N
DA	Fixed	Firm	Wheel	Y	N
DA	Dispatchable	Firm	Import	Y	N
DA	Dispatchable	Firm	Export	Y	N
DA	Dispatchable	Firm	Wheel	Y	N
DA	Up-To	Firm	Import	N	N
DA	Up-To	Firm	Export	N	N
DA	Up-To	Firm	Wheel	N	N
RT	Normal	Non-firm	Import	Y	N
RT	Normal	Non-firm	Export	Y	Y
RT	Normal	Non-firm	Wheel	Y	Y
RT	Dispatchable	Non-firm	Import	Y	N
RT	Dispatchable	Non-firm	Export	Y	Y
RT	Dispatchable	Non-firm	Wheel	Y	Y
RT	Normal	Firm	Import	Y	N
RT	Normal	Firm	Export	Y	Y
RT	Normal	Firm	Wheel	Y	Y
RT	Dispatchable	Firm	Import	Y	N
RT	Dispatchable	Firm	Export	Y	Y
RT	Dispatchable	Firm	Wheel	Y	Y

IMM Concerns / Recommendations

February 24, 2009 Order On Request For Clarification

The Commission “clarify[ied] that we did not intend to exclude virtual traders to the extent that those traders make transmission payments that contribute to the fixed costs of the transmission grid. Accordingly, ... PJM must either propose tariff revisions that allocate transmission losses equitably among all parties that support the fixed costs of the transmission system, without regard to whether such parties serve load... .. In addition to virtual traders who pay transmission charges associated with Up-To congestion transactions, such proposed revisions also would include any customer with point to point transmission service or grandfathered transmission service.”



IMM Concerns / Recommendations

The current marginal loss surplus distribution method still does not comport with the Commission's February 24th directive that any customer with point to point transmission service or grandfathered transmission service is eligible to receive loss surplus allocations.

The current marginal loss surplus distribution is based on total MWh of energy scheduled, and not based on total contributions to the fixed costs of the transmission system.



IMM Concerns / Recommendations

The IMM suggested that the allocation methodology be modified to reflect the Commission's Orders to allocation Marginal Loss Surpluses to all entities that contribute to the fixed costs of the transmission system.

FERC's September 17th Order stated "... [the IMM concerns] may be considered in the stakeholder process to analyze possible alternatives to PJM's proposed changes to which PJM is committed, including *inter alia* the various issues raised by Monitoring Analytics."



IMM Concerns / Recommendations

Section 5.5 of PJM Tariff revision

The total Transmission Loss Charges accumulated by the Office of Interconnection shall be distributed pro-rata to each Network Service User and Transmission Customer in proportion to its ratio shares of the total contribution to the fixed costs of the transmission system.

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