



Joint Stakeholder Meeting

PSEUDO TIES: CONGESTION OVERLAP



Agenda

1.	Overview
2.	Background
3.	Solution
4.	Examples
5.	Next Steps
6.	Appendix – Stakeholder Feedback

Congestion Overlap: Overview

➤ Purpose

- Explain the issue
- Explain the solution
- Discuss path forward

➤ Key Takeaways

- MISO and PJM have developed a solution to address the congestion overlap in the associated markets and in Market-To-Market coordination and associated settlements.
- Solution incorporates components that may eliminate, minimize, and/or rebate the congestion overlap

Background

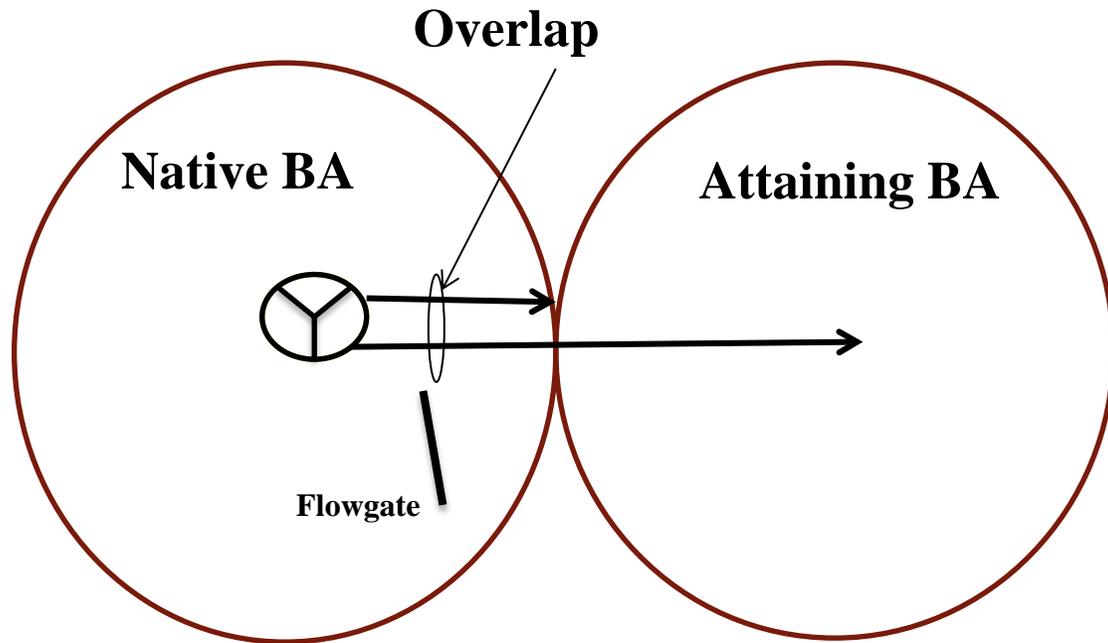
- Congestion Overlap issue has led to FERC complaints
- PJM and MISO presented initial solution at February JCM
- Stakeholders provided feedback
- PJM and MISO have an updated solution

Congestion Overlap: Issue Elaboration

Pseudo-Tie Discussion

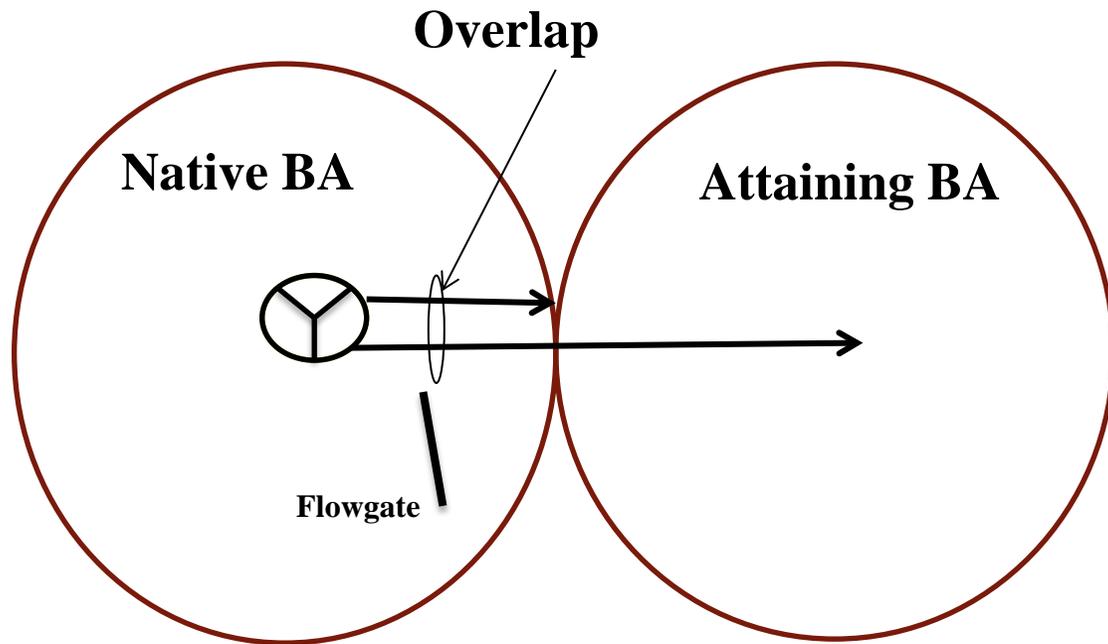
- Generation resources that implement interchange via pseudo-tie between the Native BA and Attaining BA schedule and/or offer only in the ABA energy market. The transactions or offers are assessed charges based on the scheduled volume/offer and the Marginal Congestion Component (MCC) for the locational marginal prices (LMPs).
- Native BA assessed Transmission Usage Charges are comparable to those assessed to dynamic scheduled interchange. Pseudo-tie Transmission Customers are afforded the similar treatment as dynamic schedules with respect to Transmission Rights.
- The Congestion Overlap occurs on the pseudo-tie transaction path between the source Generation and sink Interface for congestion associated with Reciprocal Coordinated Flowgates coordinated between the RTOs under Market-To-Market.
- For Market-to-Market Coordination, the Pseudo-Tie transaction is included in the Market Flow calculation of the Attaining BA, and therefore may result in payments from the ABA to the NBA for congestion relief.

Pseudo-tie Overlap: Issue Explanation



- Current settlement process
 - Native BA creates a financial schedule to capture the congestion and loss between the source and interface point.
 - Attaining BA models the unit like any other asset in its market and establishes an LMP to settle in the energy market.
- Clarification of the congestion cost overlap
 - The congestion cost overlap only occurs when an associated M2M constraint binds in both markets (i.e. both markets are binding on same constraint)
 - The overlap could be a payment or a charge depending on the location of the constraint and the pseudo-tied unit.

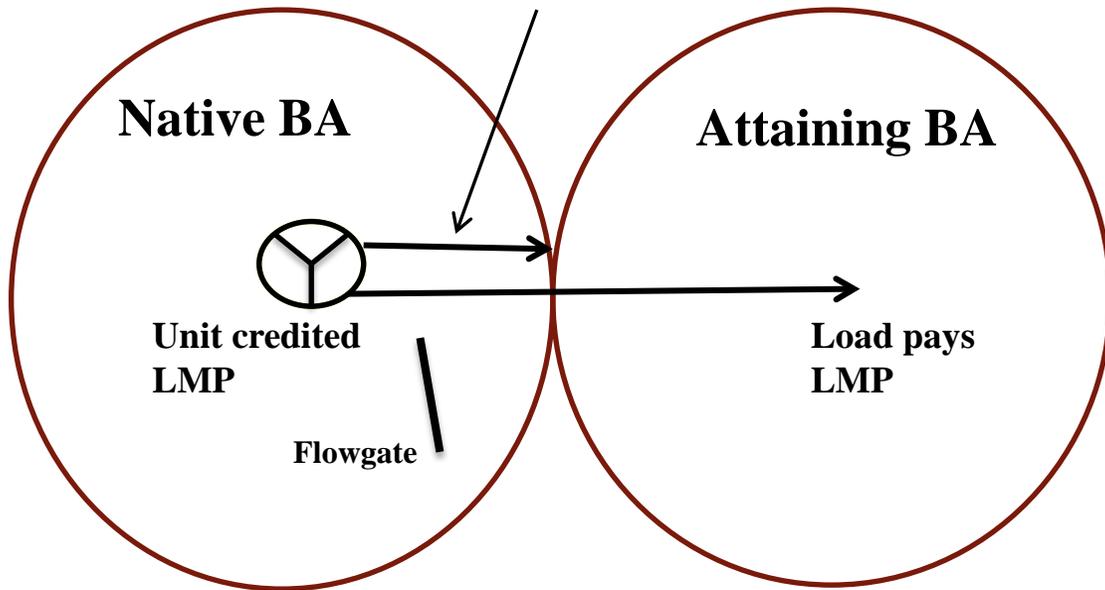
How are the markets impacted by overlap?



- Attaining BA is responsible for increased congestion on Native system associated with M2M as a result of the pseudo-tie
 - This cost is covered through M2M
- Native BA remains responsible for local congestion (non-M2M) as a result of the pseudo-tie
 - This cost is part of the RT transaction charge in the Native BA
- Both markets are accounting for the M2M congestion (Overlap)
 - Attaining in DA, RT, and M2M payments
 - Native through Real-time transaction charge

How is Pseudo impacted by overlap?

RT Transaction charged to unit
(FTR valued in Day-ahead)

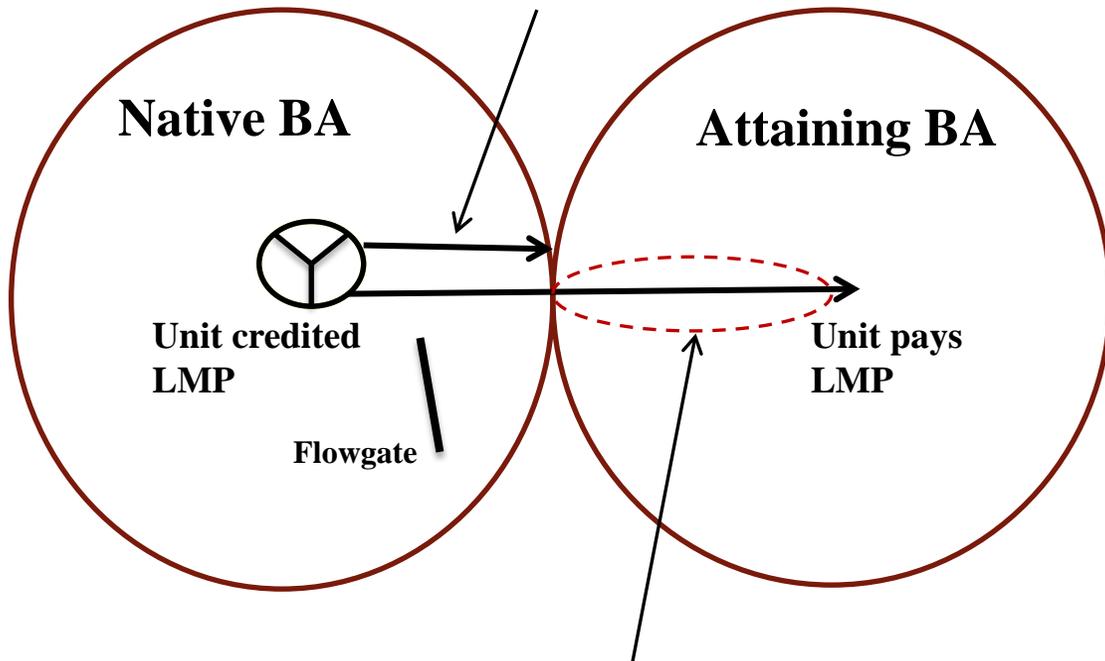


If pseudo-tie has no specific load obligation in attaining BA

- Unit receives DA LMP from Attaining that does not reflect congestion of RT usage because attaining BA does not receive FFE impacts from unit
- Load in Attaining BA is paying the Load LMP to transfer energy from unit that does not reflect RT usage
- Unit/Load charged/credited deviations in Attaining BA
- Unit pays RT transaction in Native that does reflect actual RT usage and may receive FTR that only hedges DA

How is Pseudo impacted by overlap?

RT Transaction charged to unit
(FTR valued in DA)



FTR in Native only from
Interface to Load

If pseudo-tie has specific load
obligation in attaining BA

- Unit receives DA LMP from Attaining that does not reflect congestion of RT usage because Attaining BA does not receive FFE impacts from unit
- Unit receives FTR in Attaining for only the portion from Interface to load
- Unit charged/credited deviations in Attaining
- Unit pays RT transaction in Native that does reflect actual RT usage and may receive FTR that only hedges DA

Solution Options Considered

1. Status Quo:

- Pseudo-tie is responsible for all charges
- Risk of participating in market
- Consistent with Existing Tariff Provisions

2. Native does not charge RT transaction:

- Creates additional charge to Native Load because Non-M2M congestion not handled
- Cannot remove only impact from M2M because FTR awarded for both M2M and non-M2M portion
- Native BA assessed Transmission Usage Charges would not be comparable to those assessed to dynamic scheduled interchange.

3. Attaining BA price pseudo-tie at Interface instead of physical unit location

- Creates misalignment between dispatch and pricing
- Removes incentive for unit to follow dispatch because LMP impact ignored between unit and interface

4. Recommended Collaborative Solution

- Provides pseudo-tie resource with correct congestion in Day-ahead
- Refunds overlap deviations between Day-ahead and Real-time
- Results in consistency between internal and external units

Congestion Overlap: Solution Phase 1

The RTOs will coordinate pseudo-tie FFE impacts* before the day-ahead run so that the congestion and the day-ahead LMPs for the Pseudo-Tie resources will better reflect actual congestion.

- Removes the overlap congestion for a spot generator, if clear in Attaining Day-ahead, because transfer of Firm Flows to attaining BEFORE the Day-ahead removes the excess congestion that was previously reflected in the LMPs.
- Avoids the need to refund the M2M to Attaining (then to pseudo-tie owner) after the fact because limits in day-ahead, and corresponding LMPs, already reflect this refund.
- If the pseudo-tie owner has a historic load obligation in attaining, the path from the unit to the interface still needs to be refunded via payment

* This is not a Day-Ahead exchange.

Congestion Overlap: Solution Phase 1 (cont.)

In RT, Market-to-Market will be adjusted to account for Pseudo-tie deviations between Day-ahead and Real-time.

- Pseudo-tie owner will be refunded/charged deviations from day-ahead
- Ensures the Attaining BA has sufficient revenue to provide refunds to account for Day-ahead vs. Real-time deviations

Congestion Overlap: Solution Phase 2

Future systems, Tariff and JOA enhancements will allow for optional scheduling and settlement of pseudo-tie transactions in the Native BA's Day-Ahead Market, in order to more effectively coordinate, administer markets, and align congestion charges with available hedges.

- Provides ability for Pseudo-tie to fully hedge RT transactions in Native BA

Congestion Overlap: Updated Solution

Phase 1 (Tentatively June 1, 2017)

- The RTOs will coordinate and transfer firm flows impacts before the Day-ahead run so that the congestion and the Day-ahead LMPs for the Pseudo-Tie resources will better reflect actual congestion. This removes the overlap congestion for a spot generator. Attaining BA will provide a refund to pseudo-tie owners that have load obligation from unit to border.
- In RT, Market-to-Market will be adjusted to account for Pseudo-tie deviations between Day-ahead and Real-time. This will ensure the Attaining BA has sufficient revenue to provide refunds to account for Day-ahead vs. Real-time deviations.

Phase 2 (Tentatively June 1, 2018)

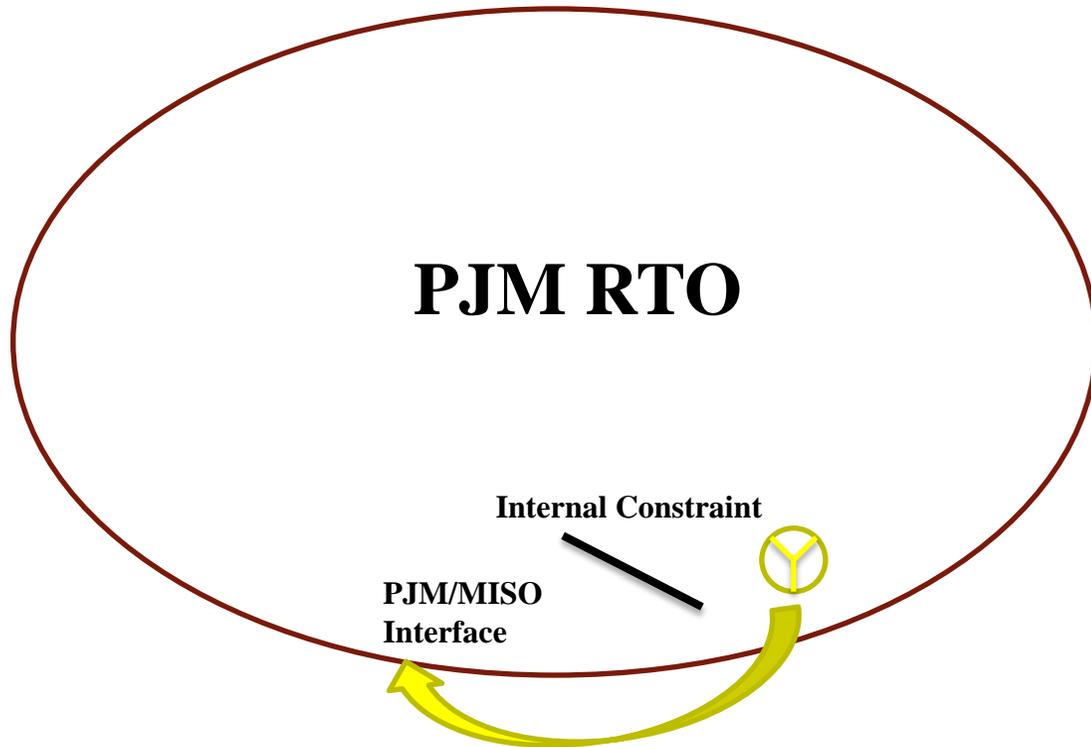
- Future systems, Tariff and JOA enhancements will allow for optional scheduling and settlement of pseudo-tie transactions in the Native BA's Day-Ahead Market, in order to more effectively coordinate, administer markets, and align congestion charges with available hedges.



Example 1
No Deviations between
Day-ahead and Real-time

Internal Unit

Generator = 100 MW
 Shift Factor = 20%
 Constraint impact= 20 MW

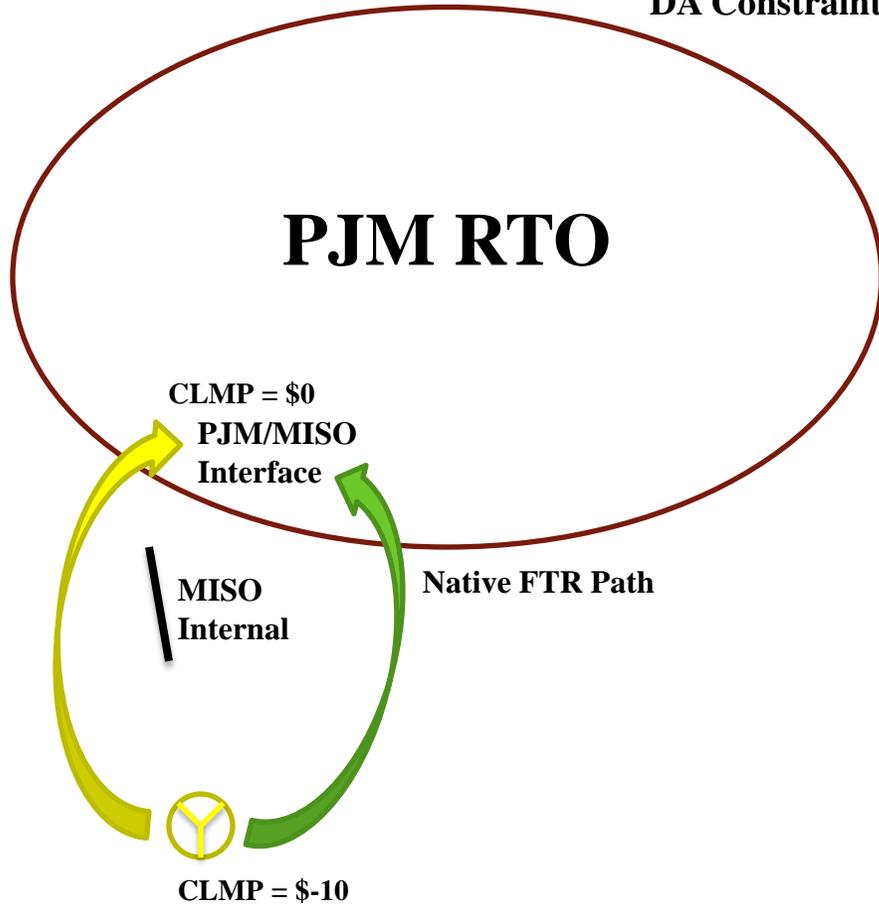


Payment	PJM	MISO
DA Shadow Price	-\$50	N/A
Unit DA Congestion Charge	-\$1000	N/A
DA FTR Credit	0	N/A
RT Shadow Price	\$-200	N/A
RT Balancing Congestion Charge	0	N/A
RT TUC	N/A	N/A
Total Charges	-\$1000	N/A

Assumption: DA Output = RT Output

Dynamic Schedule: Settlements before Pseudo-Tie

Generator = 100 MW
 Shift Factor = 20%
 DA Constraint Impact = 20 MW

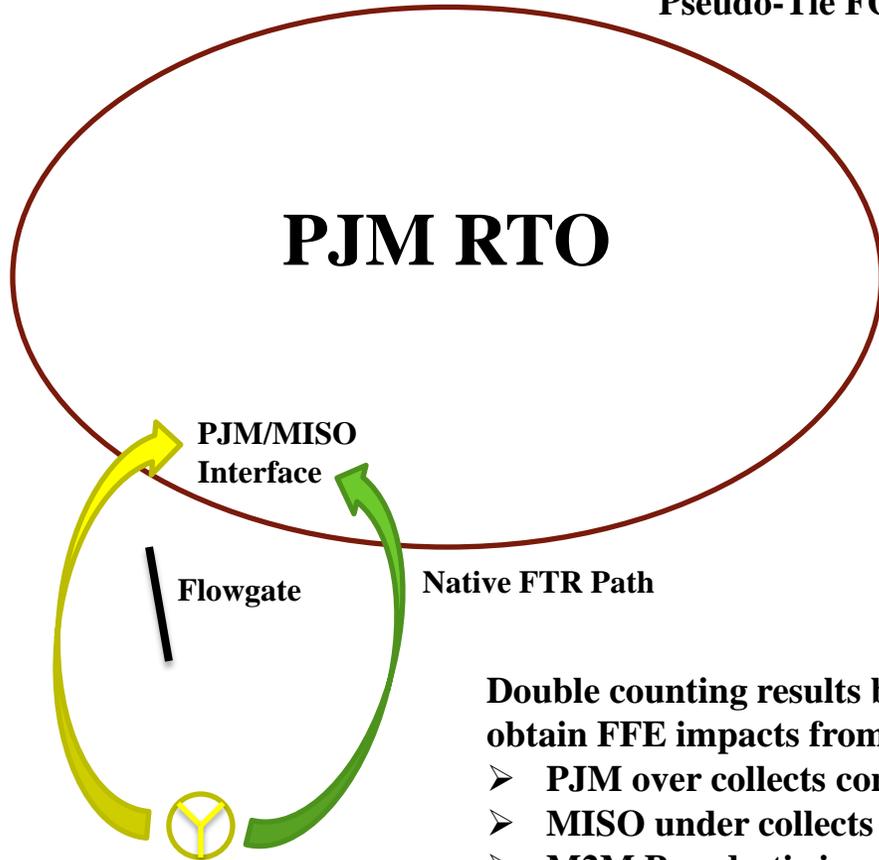


Payment	PJM	MISO
DA Shadow Price	N/A	-\$50
Unit DA Congestion Charge	\$0	N/A
DA FTR Credit	\$0	\$1,000
RT Shadow Price	N/A	-\$200
RT Balancing Congestion Charge	\$0	N/A
DA TUC	N/A	-\$1000
Total Charges	\$0	\$0

Assumption: DA Output = RT Output

Pseudo-Tie: Current Method

Generator = 100 MW
 Shift Factor = 20%
 Pseudo-Tie FG impact = 20 MW



Double counting results because PJM does not obtain FFE impacts from pseudo-tie

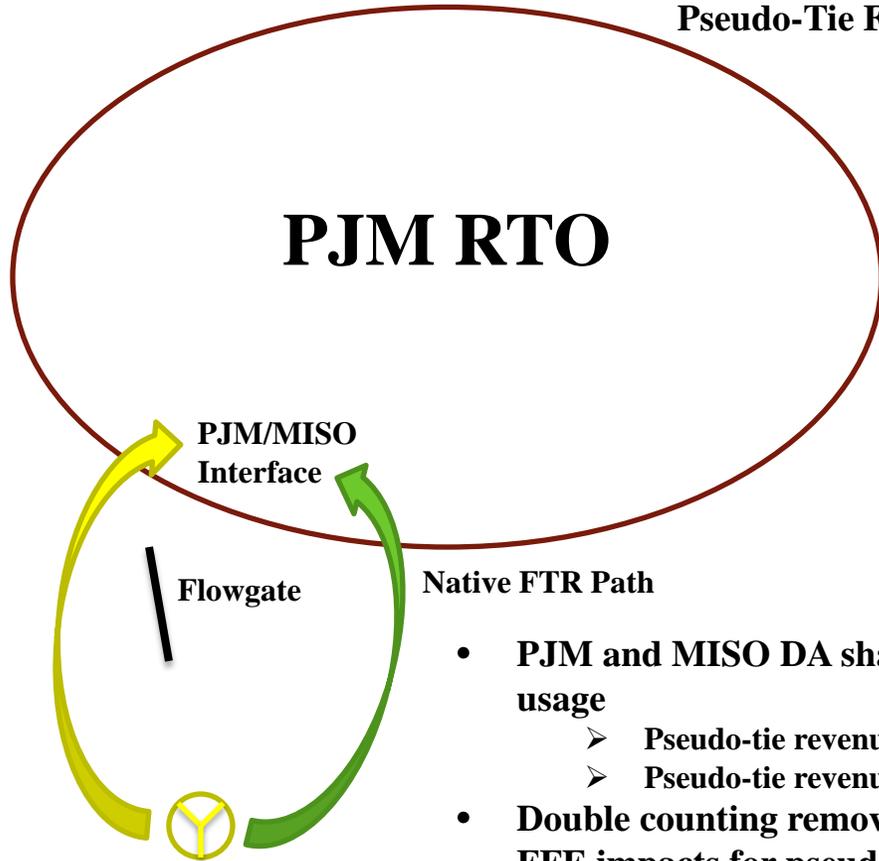
- PJM over collects congestion in Day-ahead
- MISO under collects congestion in Day-ahead
- M2M Pseudo-tie impact = double counting

Payment	PJM	MISO
FFE	40	60
Pseudo-Tie DA FG Flow	20	0
DA Shadow Price	-\$100	-\$50
DA Congestion	\$4,000	\$3,000
Pseudo-Tie DA Revenue	-\$2,000	N/A
Pseudo-Tie DA FTR Credit	\$0	\$1,000
RT Shadow Price	-\$200	-\$200
Pseudo-Tie RT Deviation value	\$0	N/A
Pseudo-Tie RT TUC	N/A	-\$4,000
Total Pseudo-tie revenue	-\$2,000	-\$3,000
M2M Pseudo-tie impact	-\$4,000	\$4,000

Assumption: DA Output = RT Output

Phase 1 Solution: Pseudo-Tie FFE Transfer

Generator = 100 MW
 Shift Factor = 20%
 Pseudo-Tie FG impact= 20 MW



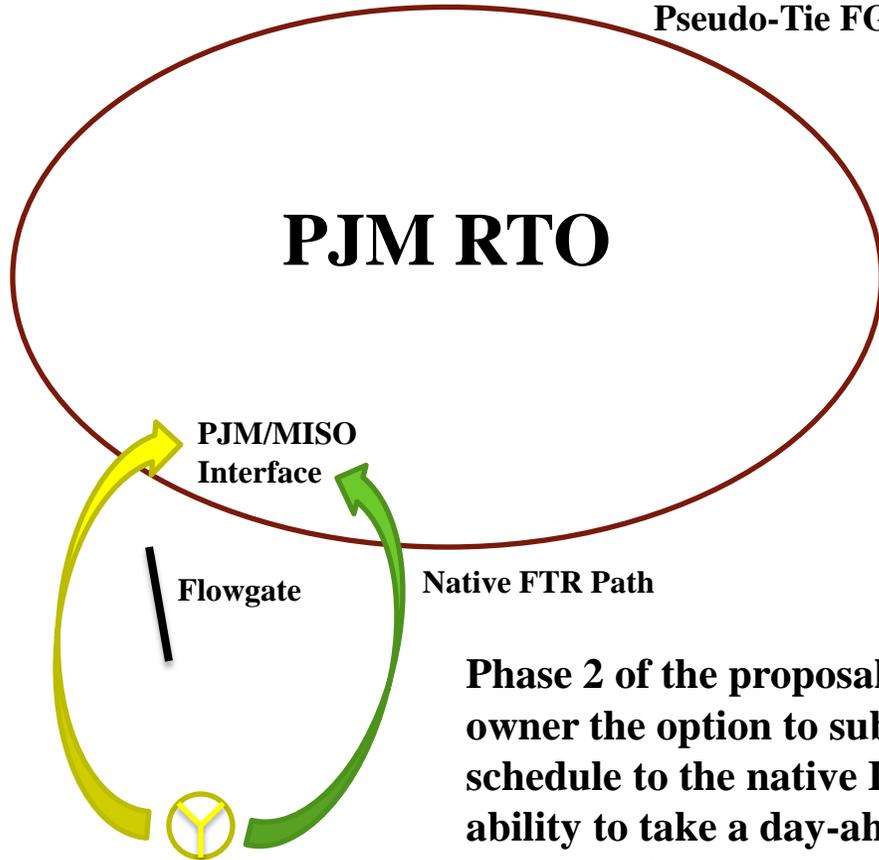
- **PJM and MISO DA shadow price reflects actual usage**
 - Pseudo-tie revenue increases in PJM DA
 - Pseudo-tie revenue FTR value increases in MISO
- **Double counting removed because PJM receives FFE impacts for pseudo-tie**
- **No additional rebate because DA output=RT output**

Payment	PJM	MISO
FFE	60	40
Pseudo-Tie DA FG Flow	20	0
DA Shadow Price	-\$50	-\$100
DA Congestion	\$3,000	\$4,000
Pseudo-Tie DA Revenue	-\$1,000	N/A
Pseudo-Tie (Spot) DA Refund/ FTR	\$0	\$1,000
Pseudo-Tie(Load) DA Refund/ FTR	\$1000	
RT Shadow Price	-\$200	-\$200
Pseudo-Tie RT Deviation value	\$0	N/A
Pseudo-Tie RT TUC	N/A	-\$4,000
Total Pseudo-tie revenue (Spot)	-\$1,000	-\$2,000
Total Pseudo-tie revenue (Load)	\$0	
M2M Pseudo-tie impact	\$0	\$0

Assumption: DA Output = RT Output

Phase 2 Solution: Pseudo-Tie MISO DA Schedule

Generator = 100 MW
 Shift Factor = 20%
 Pseudo-Tie FG impact= 20 MW



Phase 2 of the proposal gives the pseudo-tie owner the option to submit their day-ahead schedule to the native BA. This gives the ability to take a day-ahead TUC charge and hedge against real-time.

Payment	PJM	MISO
FFE	60	40
Pseudo-Tie DA FG Flow	20	0
DA Shadow Price	-\$50	-\$100
DA Congestion	\$3,000	\$4,000
Pseudo-Tie DA Revenue	-\$1,000	N/A
Pseudo-Tie DA TUC	N/A	-\$2,000
Pseudo-Tie (Spot) DA Refund/ FTR	\$0	\$2,000
Pseudo-Tie(Load) DA Refund/ FTR	\$1000	
RT Shadow Price	-\$200	-\$200
Pseudo-Tie RT Deviation value	\$0	\$0
Pseudo-Tie RT TUC	N/A	\$0
Total Pseudo-tie revenue (Spot)	-\$1,000	\$0
Total Pseudo-tie revenue (Load)	\$0	
M2M Pseudo-tie impact	\$0	\$0

Assumption: DA Output = RT Output

Example 1 Summary: DA MW = RT MW

Scenario	Overlap charge/credit	Cost associated with MISO Unhedged w/ RT	RT Deviation	Expected Congestion Cost with No Overlap	Unit Total Costs
Internal Generator (No Overlap)	\$0	\$0	\$0	-\$1,000 (Spot) \$0 (Load)	-\$1,000
Dynamic Schedule	\$0	\$0	\$0	\$0	\$0
Pseudo-tie: Current practice	-\$2,000	-\$2,000	\$0	-\$1,000	-\$5,000
Proposal Phase 1	\$0	-\$2,000	\$0	-\$1,000 (Spot) \$0 (Load)	-\$3,000
Proposal Phase 2	\$0	\$0	\$0	-\$1,000 (Spot) \$0 (Load)	-\$1,000

Solution results in consistent treatment between internal and pseudo-tie



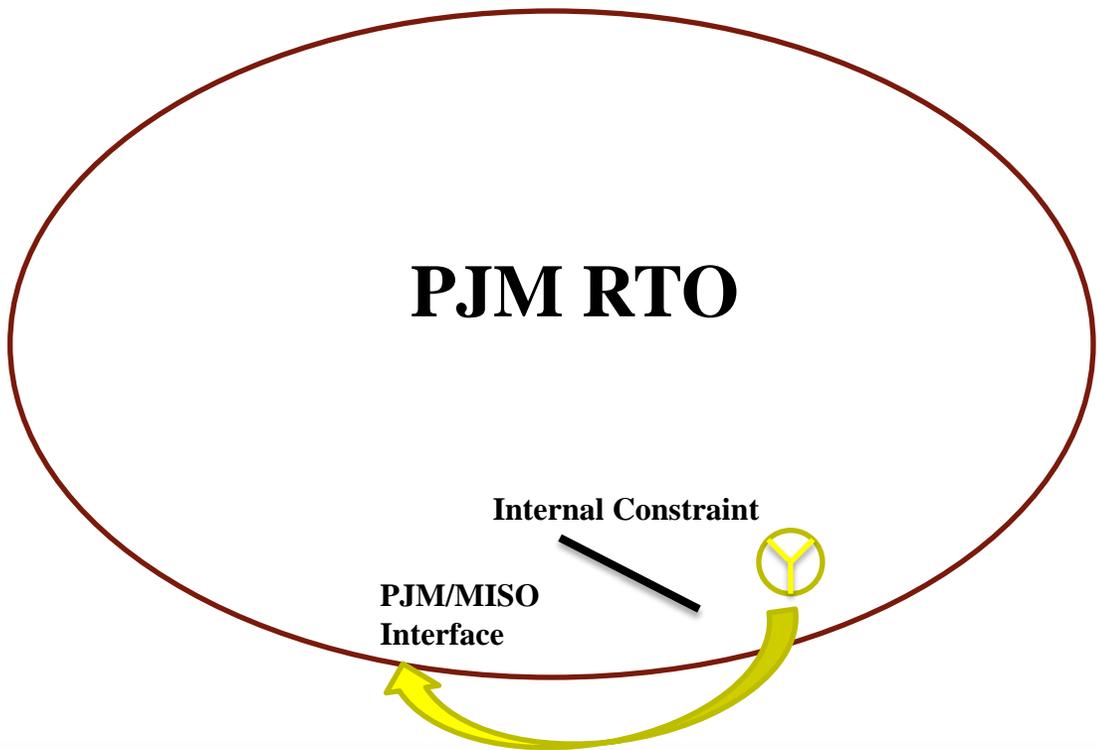
Example 2

Deviations between Day-ahead and Real-time

Internal Unit

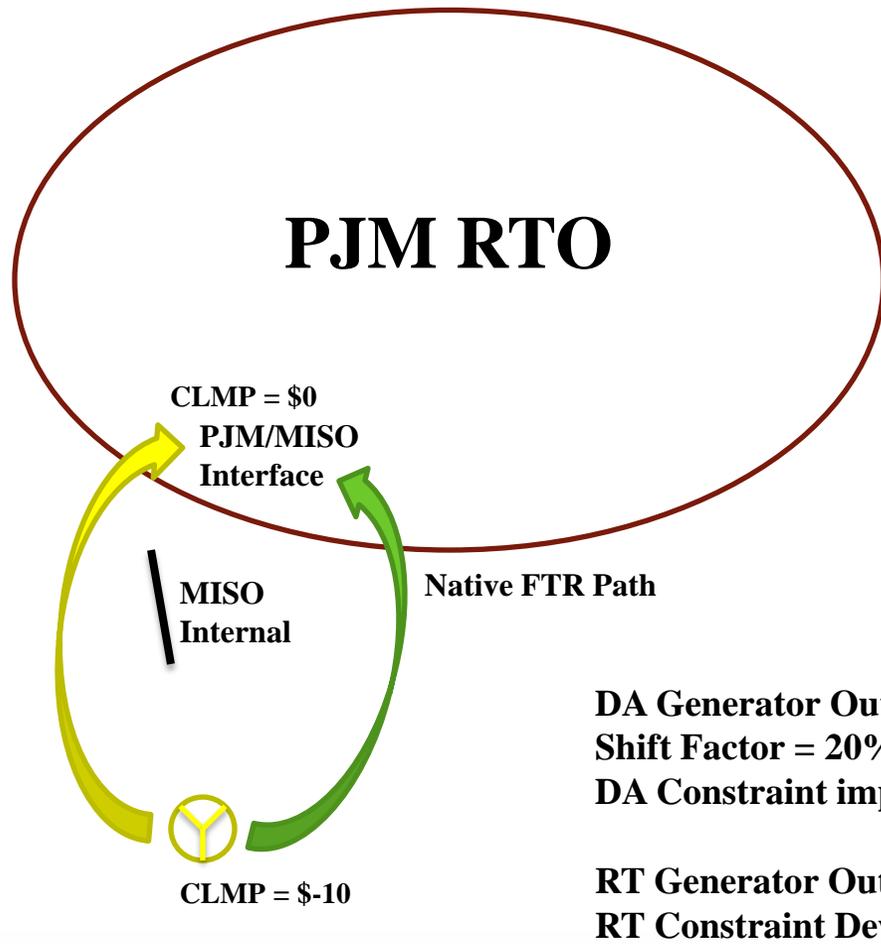
DA Generator Output= 100 MW
 Shift Factor = 20%
 DA Constraint impact = 20 MW

RT Generator Output = 110 MW
 RT Constraint Deviation Impact = 2 MW



Payment	PJM	MISO
DA Shadow Price	-\$50	N/A
Unit DA Congestion Charge	-\$1000	N/A
DA FTR Credit	\$0	N/A
RT Shadow Price	-\$200	N/A
RT Balancing Congestion Charge	-\$400	N/A
RT TUC	N/A	0
Total charges	-\$1400	0

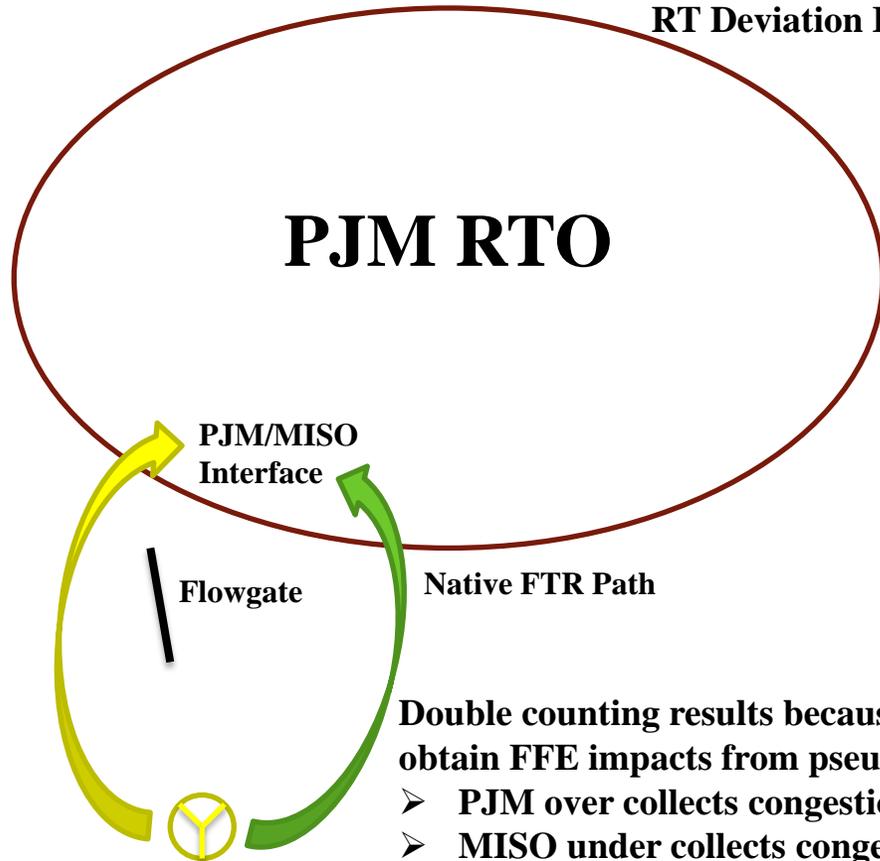
Dynamic Schedule: Settlements before Pseudo-Tie



Payment	PJM	MISO
DA Shadow Price	N/A	-\$50
DA Congestion Charge	\$0	N/A
DA FTR Credit	\$0	\$1,000
RT Shadow Price	N/A	-\$200
RT Balancing Congestion Charge	\$0	N/A
DA TUC	N/A	-\$1,000
RT TUC	N/A	-\$400
Total Charges	\$0	-\$400

Pseudo-Tie: Current Method

Generator = 100 MW
Shift Factor = 20%
DA Pseudo-Tie FG Impact = 20 MW
RT MW = 110
RT Deviation FG Impact = 2 MW



Double counting results because PJM does not obtain FFE impacts from pseudo-tie

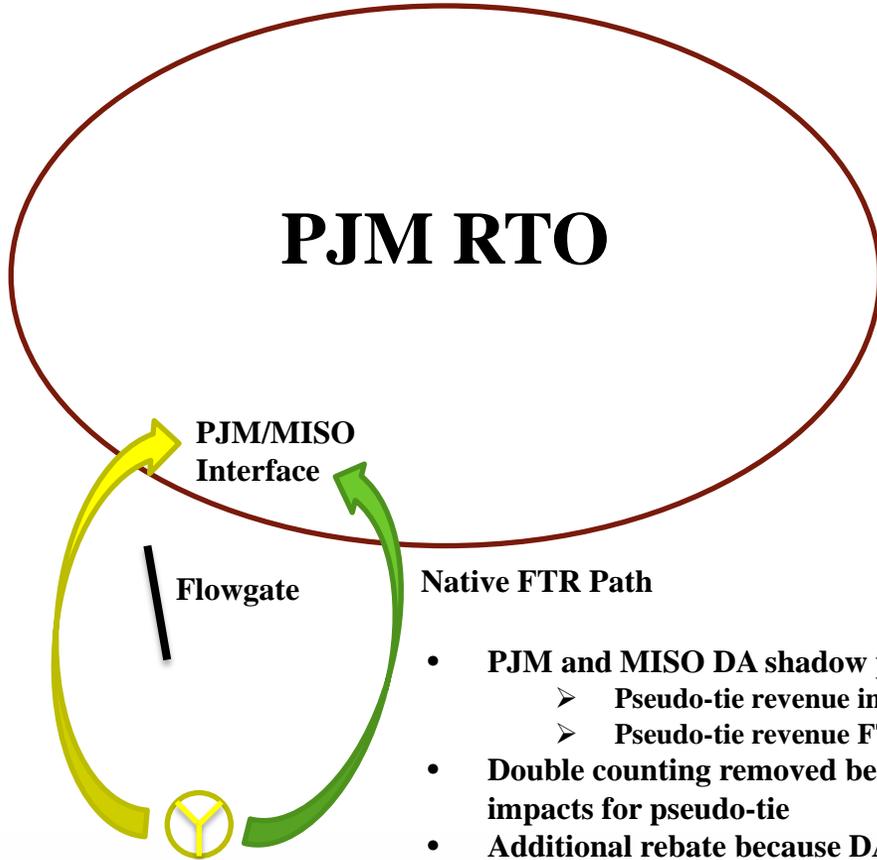
- **PJM over collects congestion in Day-ahead**
- **MISO under collects congestion in Day-ahead**
- **M2M Pseudo-tie impact = double counting**

Payment	PJM	MISO
FFE	40	60
Pseudo-Tie DA FG Flow	20	0
DA Shadow Price	-\$100	-\$50
DA Congestion	\$4,000	\$3,000
Pseudo-Tie DA Revenue	-\$2,000	N/A
DA Pseudo-Tie FTR Credit	0	\$1,000
RT Shadow Price	-\$200	-\$200
Pseudo-Tie RT Deviation Flow	2 MW	N/A
Pseudo-Tie RT Balancing Congestion Charge	-\$400	N/A
Pseudo-Tie RT TUC	N/A	-\$4,400
Pseudo-Tie Total Revenue	-\$2,400	-\$3,400
M2M PT Impact***	-\$4,400	\$4,400

***Settlement is between RTOs, not PT owner.

Phase 1 Solution: Pseudo-Tie FFE Transfer

Generator = 100 MW
 Shift Factor = 20%
 Pseudo-Tie FG Impact = 20 MW
 RT MW = 110
 RT Deviation FG Flow = 2 MW



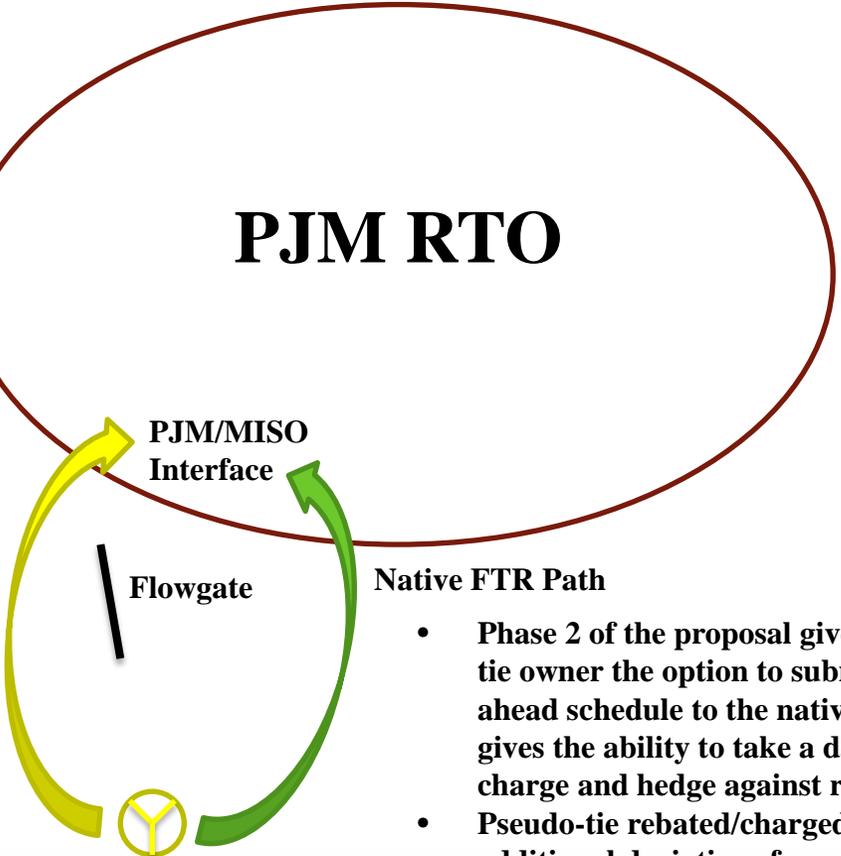
- PJM and MISO DA shadow price reflects actual usage
 - Pseudo-tie revenue increases in PJM DA
 - Pseudo-tie revenue FTR value increases in MISO
- Double counting removed because PJM receives FFE impacts for pseudo-tie
- Additional rebate because DA output <> RT output

Payment	PJM	MISO
FFE	60	40
Pseudo-Tie DA FG Flow	20	0
DA Shadow Price	-\$50	-\$100
DA Congestion	\$3,000	\$4,000
Pseudo-Tie DA Revenue	-\$1,000	N/A
Pseudo-Tie (Spot) DA Refund/FTR	\$0	\$2,000
Pseudo-Tie (Load) DA Refund/FTR	\$1000	
RT Shadow Price	-\$200	-\$200
Pseudo-Tie RT Deviation Flow	2 MW	N/A
Pseudo-Tie RT Balancing Congestion Charge	-\$400	N/A
Pseudo-Tie RT TUC	N/A	-\$4,400
Refund	$(22-20) * 200 =$ \$400	N/A
Total Pseudo-tie revenue (Spot)	-\$1,000	-\$2,400
Total Pseudo-tie revenue (Load)	\$0	
M2M PT Impact → 0	$(20-20)*-200 =$ \$0	$(20-20)*-200 =$ \$0

Pseudo-Tie – Proposed Method Phase 2

Generator = 100 MW
 Shift Factor = 20%
 DA Pseudo-Tie FG Impact
 RT MW = 110
 RT Deviation FG Flow = 2 MW

PJM RTO



- Phase 2 of the proposal gives the pseudo-tie owner the option to submit their day-ahead schedule to the native BA. This gives the ability to take a day-ahead TUC charge and hedge against real-time.
- Pseudo-tie rebated/charged any additional deviations from RT

Payment	PJM	MISO
FFE	60	40
Pseudo-Tie DA FG Flow	20	0
DA Shadow Price	-\$50	-\$100
DA Congestion	\$3,000	\$4,000
Pseudo-Tie DA Revenue	-\$1,000	N/A
Pseudo-Tie DA TUC	N/A	-\$2,000
Pseudo-Tie (Spot) DA Refund/FTR	\$0	\$2,000
Pseudo-Tie (Load) DA Refund/FTR	\$1000	
RT Shadow Price	-\$200	-\$200
Pseudo-Tie RT Deviation Flow	2 MW	N/A
Pseudo-Tie RT Balancing Congestion Charge	-\$400	N/A
Pseudo-Tie RT TUC	N/A	\$-400
Refund	$(20-22) * 200 =$ \$400	N/A
Total Pseudo-tie revenue (Spot)	-\$1,000	-\$400
Total Pseudo-tie revenue (Load)	\$0	
M2M PT Impact → 0	$(20-20)*-200 =$ \$0	$(20-20)*-200 =$ \$0

Example 2 Summary: DA MW = 100, RT MW = 110

Scenario	Overlap charge/credit	Cost associated with MISO Unhedged w/ RT	RT Deviation	Expected Congestion Cost with No Overlap	Unit Total Costs
Internal Gen	\$0	\$0	-\$400	-\$1,400 (Spot) \$0 (Load)	\$-1,400
Dynamic Schedule	\$0	\$0	-\$400	\$0	\$-400
Pseudo-tie Current practice	-\$2,400	-\$2,000	-\$400	-\$1,400	-\$5,800
Proposal Phase 1	\$0	-\$2,000	-\$400	-\$1,400 (Spot) \$0 (Load)	-\$3,400
Proposal Phase 2	\$0	\$0	-\$400	-\$1,400 (Spot) \$0 (Load)	\$-1,400

Solution results in consistent treatment between internal and pseudo-tie



Losses

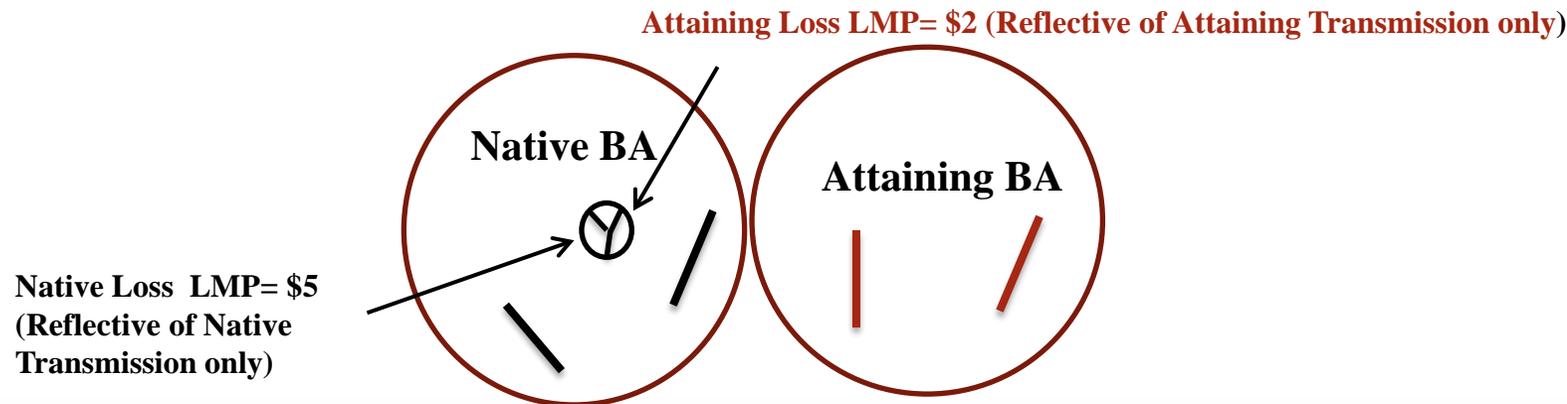
Pseudo-tie and Losses

PJM and MISO do not charge losses on external facilities

- M2M constraints that are MISO facilities are not included in the calculation of the MISO Loss component of LMP.
- M2M constraints that are PJM facilities are not included in the calculation of the PJM Loss component of LMP.

There is no overlap of loss charges/credits for pseudo-tie resources

- Although there are loss LMPs and charges/credits in both PJM and MISO, the calculation of the loss LMP only reflects the transmission facilities where the charges/credits are applied



Next Steps

- RTOs develop JOA language and file with FERC
- RTOs develop software changes
- Updates at Future JCM meetings

Next Steps Timeline

Due Date	Who	Action
April 2017	MISO, PJM, Stakeholders	MISO and PJM complete work with stakeholders, including Complainants on Solutions to Congestion Overlap and Double Charge. File Tariff and JOA changes with FERC as appropriate.
May 1, 2017	MISO, PJM	Deliver changes to JOA and Settlement Systems with a target implementation of June 1, 2017
June 1, 2017	MISO, PJM	Implement Short Term Solutions
June 2017– May 2018	MISO, PJM	Deliver and implement Long Term Solutions
June 2017– May 2018	MISO, SPP	Deliver Short and Long Term Solutions

Contacts

Stakeholder feedback – send comments to:

- Kevin Vannoy kvannoy@misoenergy.org
- Tim Horger Tim.Horger@pjm.com

Appendix: Stakeholder Feedback

- MISO and PJM received comments from nine different stakeholders
- Comments supported, opposed, or sought more clarification

Appendix: Comments in Support

Comments generally supporting proposal

The proposal seems reasonable and is consistent with ensuring that the native BA remains unharmed.

The proposal timely addresses congestion overlap and its associated market-to-market settlements.

Phase 1 is a step in the right direction. Phase 2 could be further enhanced so that the generation units Pseudo-tied receives a single dispatch instruction and all the costs can be included in the dispatch from a single RTO.

Appendix: Comments Seeking Clarification

Short-term Phase 1 solution does not appear to address the congestion overlap for pseudo-tie loads into or out of the RTOs.

Response:

- There are no pseudo-tie loads between PJM and MISO. MISO and PJM are focusing attention on addressing the issue on the MISO-PJM Seam given their pseudo-tie requirement to participate in RPM and pending complaints.
- MISO has initiated discussions with SPP and they are evaluating the solution and observing the MISO-PJM proceedings.
- As MISO does not have specific pseudo-tie requirements, other than for the provision of ancillary services for resources, one way to mitigate the issue would be to register as a dynamic schedule until the Long-Term Solution can be implemented on both seams.

Double-counting congestion in energy markets implies that the amount of the line flow on a congested M2M flowgate for which congestion dollars are collected exceeds the actual capability of such a flowgate.

Response:

- This is a correct statement. To clarify, the physical line flow does not exceed the capability of the M2M flowgate, however, the dual representation of flows in both markets results in the exceedance.

Appendix: Comments Seeking Clarification

ARRs or FTRs are awarded based on the actual capability of a flowgate

Response:

- This is not entirely accurate. Allocated ARRs and FTRs must reflect the Firm Flow Entitlements an RTO receives in order to be fully funded. To the extent RTOs do not reflect the FFEs, underfunding or infeasibilities may occur. Given the entitlements and long-term priorities given to Transmission Customers under FERC order 681 and 681A, the financial rights allocated by the RTO associated with the actual capability may not correspond to with Transmission service held by the pseudo-tie owner.

For double-counting congestion, there is no ARR or FTR associated with it. As a result, congestion rebates shouldn't be reduced because of ARR/FTR revenues received from the ABA. Instead, any of pseudo ties should be eligible for receiving a full congestion rebate.

Response:

- This statement summarizes the proposed rebate approach. Congestion revenues may occur in the Day-Ahead or Real-Time markets and impact market to market settlements. These settlements require adjustment to reflect the congestion overlap in order to provide appropriate congestion rebates to Market Participants in the Attaining Balancing Authority area.

Appendix: Comments Seeking Clarification

The Pseudo-tied asset owner is currently being charged with RT LMP spreads between the asset and Interface in the NBA, and day-ahead (DA) or RT LMP spreads between the asset and load center in the ABA. Though the owner currently gets partial FTR awards in the NBA, the owner is still vulnerable to RT congestion risk because of indirect hedging and insufficient MW awards via FTR.

Response:

- This risk is addressed in the Long-term Phase 2 solution by providing a means for the pseudo-tie asset owner to inform the NBA of their pseudo-tie scheduling volumes ahead of the day-ahead market close and receive the Transmission Usage Charge based on day-ahead LMPs.

Shouldn't the NBA provide congestion rebates based on RT M2M congestion to reduce the owner's RT congestion risk given that no day-ahead scheduling of pseudo ties is currently allowed in the NBA. Isn't it easier for the NBA to directly provide rebates to the owners of pseudo ties instead so that there is a minimum amount of changes to settlement rules and the calculation of market flows?

Response:

- This approach has the NBA providing rebates for both congestion collections. The NBA does not know what congestion the pseudo-tie asset owner was exposed to in the ABA's markets or if they even paid congestion transmission usage charges at all. This would not eliminate the misalignment between markets. For example, a pseudo-tie that clears in the ABA day-ahead market, pays congestion between the asset and the border based on the ABA's day-ahead LMPs but then is rebated base on the NBA's Real-Time LMPs.
- Settlement and Market-to-Market settlement rules will require the same amount of changes to implement this solution, only the NBA will bear all of that cost.

Appendix: Comments Seeking Clarification

Please provide a quantification of congestion overlap issue.

Response:

- MISO estimates that approximately seven (7) Market Participants have been assessed \$10.8 Million in total congestion Transmission Usage Charges associated with their pseudo-tie exports to PJM from June 1, 2016 through early March 2017. These charges include both Market-to-Market congestion associated with Reciprocal Coordinated Flowgates, as well as, non-Market-to-Market congestion associated with MISO internal flowgates. The potential double counted charges would be less than this \$10.8 Million amount, and would depend on whether the pseudo-tie asset owner was assessed a congestion Transmission Usage Charge in PJM for the same transaction between the pseudo-tie asset and the MISO-PJM border.

Please confirm the Phase 1 & 2 solutions address congestion rebates for external units with a pseudo-tie from PJM to MISO.

Response:

- For Phase 1, MISO and PJM are focusing attention on addressing the issue on the MISO-PJM Seam given their pseudo-tie requirement to participate in RPM and pending complaints.
- Phase 2 will address the issue for pseudo-ties into MISO from PJM. As MISO does not have specific pseudo-tie requirements, other than for the provision of ancillary services for resources, one way to mitigate the issue would be to register as a dynamic schedule until the Long-Term Solution can be implemented on both seams.

Appendix: Comments Seeking Clarification

In the Phase 1 settlement adjustment, is the congestion rebate calculated only based on Real-time market prices? In Phase 2, will settlement be based on either DA or RT market prices?

Response:

- The Phase 1 and 2 pseudo-tie congestion rebate will be issued by the ABA and will align with the market (ABA Day-Ahead or Real-Time)

When one (or none) of the BA's M2M constraints bind, will the Proposed Congestion Rebate be commensurate with the generator's congestion charge?

Response:

- The proposed congestion rebate will be provided by the ABA for appropriate congestion charges assessed in the ABA's market associated with the unit.

Appendix: Comments Seeking Clarification

In Phase 2, will the generator be required to offer in the Native BA Day-ahead market for settlement calculation purposes only?

Response:

- The Phase 2 proposal allows the pseudo-tie asset owner the ability to notify the NBA, through a schedule submission ahead of the NBA Day-Ahead market's close, their expected or intended transmission usage for the next day. The pseudo-tie asset will not be required to, nor have the ability to offer the resource into the NBA's Day-Ahead Market.

Will MISO provide a “look back” on the proposed solutions which shows how the rebate covers the associated double counting charges before the June 1, 2017 implementation?

Response:

- MISO and PJM do not intend to provide such data at this time.

For a proposed or current pseudo tie in the ABA Settlements, my understanding is that the congestion charge which is doubled counted is between ABA Gen and ABA Interface. However, the example calculated the congestion charge between ABA interface and ABA Load. Is the calculation of the double-counting congestion charge correct?

Response:

- The example calculated the double counted congestion between the ABA Gen and ABA Interface.

Appendix: Comments Seeking Clarification

Since FTR Congestion Rebate does not contain any of double-counting congestion, why would the proposed congestion rebate in the ABA Settlements for a proposed pseudo tie be reduced by FTR Congestion Rebate?

Response:

- For the example, the FTR Congestion Rebates are associated with the path within the RTO boundary, excluding the additional pseudo-tie path between the ABA Gen and ABA Interface.

The proposed solution is vague to the point of precluding a meaningful evaluation of its deficiencies. Affected resource owners are greatly handicapped in attempting to quantify the residual risks of incurring overlapping congestion charges, the hedging activity costs inherent in the RTOs' proposal, and the costs that might attend a requirement for participation in two energy markets.

Response:

- RTO's will provide additional detail, including which rebates require FTR hedges. Under dynamic scheduling, congestion rebates require hedges. Proposal does not require participation in two energy markets, however, Market Participants face market-based congestion charges associated with their usage of the transmission system in both markets as a fundamental of Open Access and the RTO's congestion management procedures.

Appendix: Comments in Opposition

Participant disagrees that the potential overlap only exists when Market-To-Market (M2M) flowgates bind in both markets.

Response:

- An overlap can only exist if constraints are modeled and bound in both markets.

There is also a “missing” component in the PJM LMP calculation, which is the amount MISO charges for “local” losses and congestion from the generator node.

Response:

- These “missing” components are appropriately excluded from PJM’s LMP and could only be included through expansion of Market-to-Market coordination or a combined RTO commitment and dispatch.

At best, this proposal would only rebate the Market-To-Market congestion, not the entire congestion that is charged by MISO via the TUC. PJM would still be blind to the “local” congestion from the generator node to the MISO / PJM Interface.

Response:

- MISO’s Financial Transmission Rights are the method for rebates of MISO’s TUC. The proposed rebate is intended to rebate PJM’s TUC for the overlapping M2M congestion.

The potential overlap (duplication) in losses charges isn’t addressed in this proposal either.

Response:

- There is no duplication of transmission losses

Appendix: Comments in Opposition

The RTOs' proposal does not eliminate overlapping congestion charges. The RTOs should pursue a solution that eliminates overlapping congestion charges in the first place.

Response:

- Upfront and accurate elimination of the overlapping congestion charges is only possible through: 1. Elimination of Pseudo-Ties between the two RTOs; or, 2. Elimination of Market-to-Market coordination between the RTOs. Neither solution is practical. However, the proposed solution essentially eliminates the congestion overlap upfront by removing the impacts in the ABA day-ahead process.

The proposal does not eliminate overlapping congestion charges in the right market.

Response:

- The proposal does not seek to eliminate congestion in either market. It provides rebates through appropriate mechanisms in each market and seeks to align rebates to better administer and participate in the chosen market.

The RTOs should pursue a solution that eliminates overlapping congestion charges on the native RTO side.

Response:

- The proposal essentially eliminates overlapping congestion in the ABA day-ahead or real-time market where they are incurred by the pseudo-tie parties. It provides rebates through appropriate mechanisms in each market and seeks to align rebates to better administer and participate in the chosen market. Elimination of congestion on the native BA side would be unduly preferential.

Appendix: Comments in Opposition

The proposed Phase 2 solution inappropriately requires participation in the native Balancing Authority's energy market.

Response:

- This is not completely accurate. Market Participants face market-based congestion charges associated with their usage of the transmission system in both markets as a fundamental of Open Access and the RTO's congestion management procedures. The Phase 2 solution allows the pseudo-tie asset owner the ability to align these costs with available hedges by informing the Native RTO of intended real-time usage of the transmission system, in return the schedule settles at Day-Ahead LMPs and provides the Attaining BA with Firm Flow Entitlements for administering their Day-Ahead market.

The proposed Phase 2 solution relies on "hedging" rather than eliminating the overlapping charges. The proposed Phase 2 solution relies on participation in FTR markets in two markets, effectively increasing risk rather than eliminating the overlapping charges.

Response:

- This is not accurate. The overlapping charges do not require any hedging to receive a rebate. The Native BA market based congestion charges have always required hedges to receive a rebate.

Resources pseudo-tied out of MISO into PJM currently have the option of acquiring FTRs in MISO, it does nothing to avoid the imposition of duplicative congestion charges.

Response:

- The congestion overlap is appropriately addressed in the proposed solution options.

Appendix: Comments in Opposition

It is entirely unclear how the RTOs' proposal will provide an appropriate dispatch for a pseudo-tied resource when the resource is forced to participate in two energy markets.

Response:

- The pseudo-tie resource is not forced to participate in the Native BA's energy market, in fact it is precluded. It is allowed a mechanism to align congestion charges with hedges and provide the attaining BA FFEs to more efficiently manage its markets.

All components of the pseudo tie congestion issue must be considered together. The RTOs also have advanced separate, uncoordinated proposals for the adoption of pro forma agreements that the owners of pseudo-tied resources would be required to sign.

Response:

- The pseudo-tie agreements are beyond the scope of the congestion overlap and address separate aspects of administering pseudo-ties in each RTO.