



Joint Common Market

MISO-PJM Interface Pricing Update
2/28/2017



Discussion Topics



MISO-PJM Common Interface
Definition Post Implementation
Document



Price Reconstruction Analysis
Observation

Post Implementation Document

1. Introduction
2. Real-Time Market Interchange Price Signal Effectiveness Metrics
 1. Post Implementation Pricing Monitoring Analysis
 2. Price Efficiency Metrics
 3. Constraint Shadow Price Convergence and Volatility
3. Market Congestion Revenue Metrics

Price Reconstruction Analysis Outline

Analysis Description

- MISO will change its interface definition from current PJM definition (~1800 nodes inside of PJM) to common interface (10 nodes close to the MISO-PJM seam)

Analysis Process

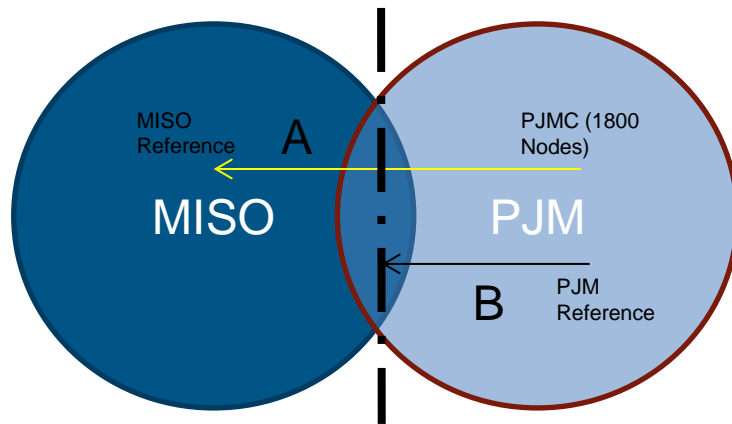
- Past 3 years' hourly RT / DA prices with respect to the new common interface definition

Analysis Objectives

- Identify magnitude and frequency of the price incentive change due to interface definition change
- Confirm the change is appropriate

MISO's PJM Interface Price Change

1.A Before 6/1/2017

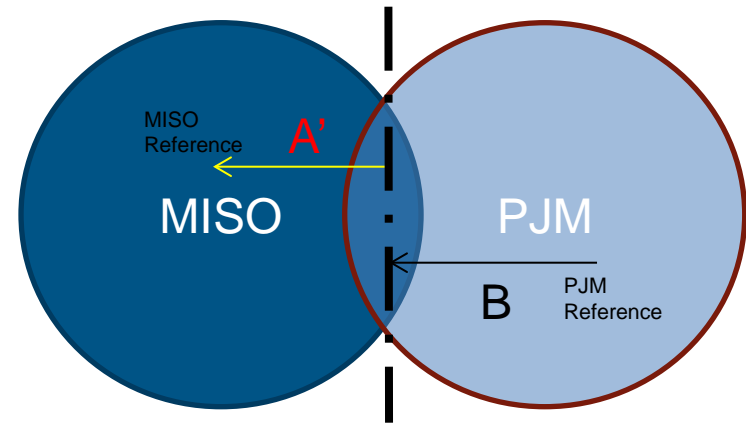


Common Interface (10 nodes)

Current Interface Pricing Configuration
M2M constraints receive duplicative incentive (error magnitude=B)

MISO's PJM Interface Price= $A|PJM$

1.B After 6/1/2017 – Removal of the duplicative M2M incentive



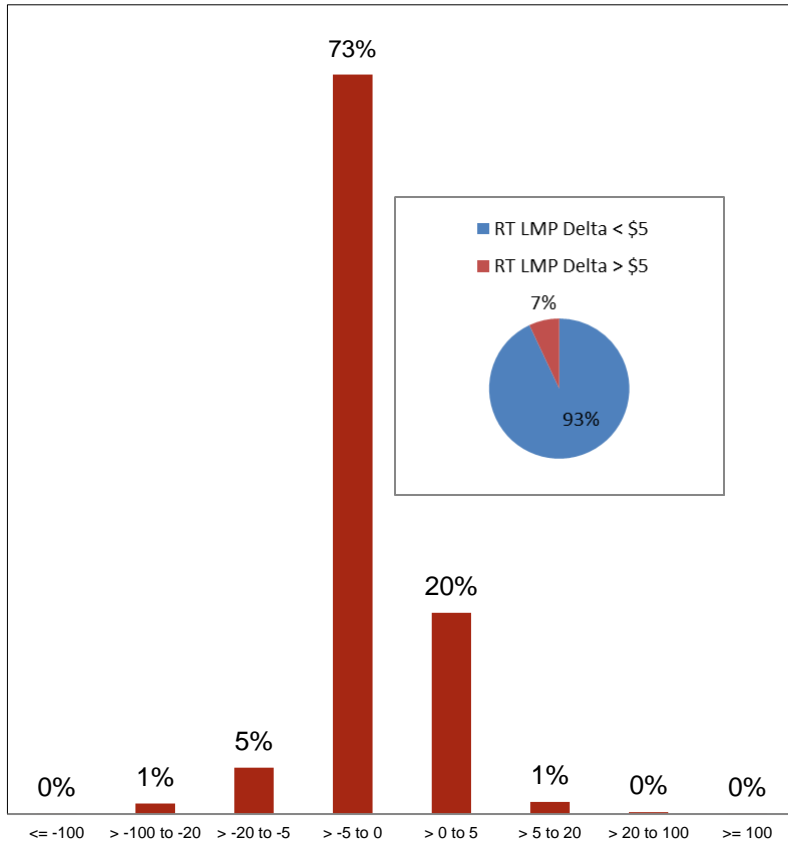
Common Interface (10 nodes)

Common Interface Configuration
M2M constraints are getting paid for the full transaction path ($A'+B$)

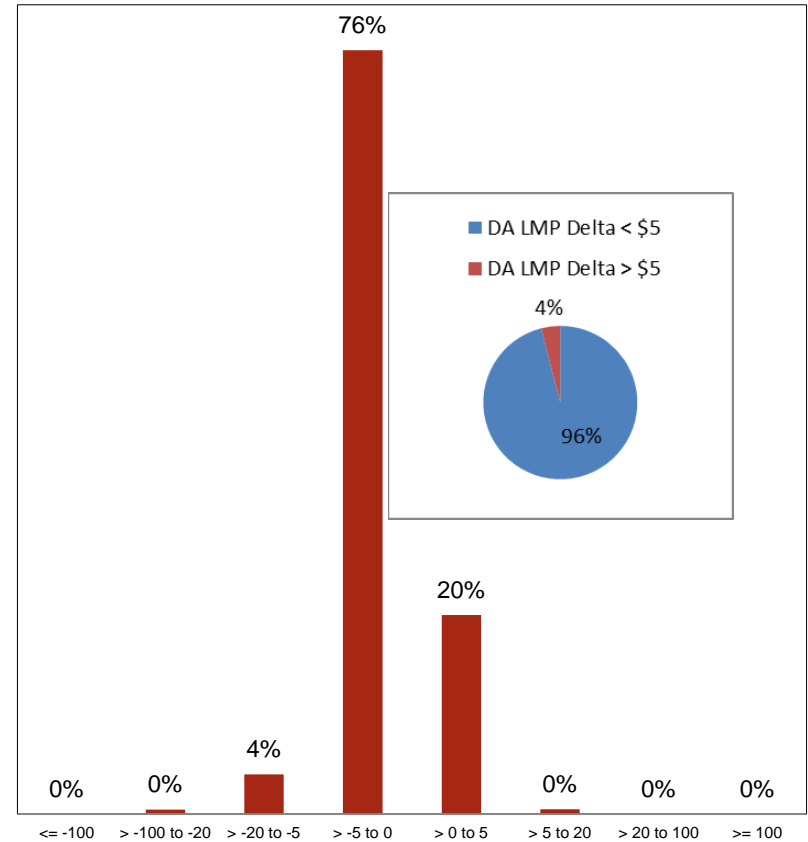
MISO's PJM Interface Price= $A'|PJM$ Common Interface

Hourly Average Price Delta

RT LMP DIFF (PJM BASE - PJMC)



DA LMP DIFF (PJM BASE - PJMC)



Outlier Evaluation

Isolated samples that has large price differential compare to PJM Classic interface definition

Parameter	ONT-ITC Interface	Stillwell-Dumont FG	Aug 10 th Sample
Average Shadow Price	\$1,400	\$300	Multiple binding constraints both M2M and Non M2M
Average LMP Delta	\$118	\$44	\$103
Average MCC Delta	\$118	\$44	\$103

Question Of The Day:

We expect change in interface definition will lead to price change, but how do we know which price is closer to ideal

Outlier Evaluation -- ONT-ITC Interface

- Non M2M constraint
- Shift factor change by 0.08
- Average shadow price \$1,400
- Shadow price was large due to difference in Market Flow Priority methodology between MISO and PJM
- Large price differential is driven by both shift factor change and large shadow price

Outlier Evaluation – Stillwell-Dumont

- M2M constraint with PJM
- The current MISO's PJM interface price contains an overlap component
- The proposed common interface definition removes the overlap components, thus provides closer to ideal price incentive

Outlier Evaluation – Aug 10th Sample

- 10 binding constraints for the hour
 - 3 M2M
 - 1 of which had negligible shift factor change
 - 7 Non M2M
 - All of which did not have shift factor change
- Dixon_McGirrRd_138kV_flo_Nelson_ElectJct_345kV
 - M2M with PJM
 - Shift factor changed by 0.002 to remove the duplicative incentive
- CIN23006_GREENTOW_GREENKOKOM23_1_1
 - M2M with PJM
 - Shift factor change by 0.019 to remove the duplicative incentive
- The proposed common interface definition removes the overlap components, thus provides closer to ideal price incentive

RT/DA Price Reconstruction Conclusion

- 93% of times RT price showed <\$5 change when common interface definition is used
- 96% of times DA price showed <\$5 change when common interface definition is used
- During high price differential samples
 - Impact to ONT-ITC interface could be reduced by coordinating market flow priority logic
 - New common interface price removes the duplicative transaction incentive for the M2M constraints from the PJM classic interface definition
 - The changes seen in the large price differential samples are appropriate

Contacts

Beibei Li

- bli@misoenergy.org

Dhiman Chatterjee

- dchatterjee@misoenergy.org

Joseph Rushing

- Joseph.Rushing@pjm.com

Tim Horger

- Tim.Horger@pjm.com