

# Congestion Rent Shortfalls in the California ISO and Other Electricity Markets

Scott Harvey

Member, California ISO Market Surveillance Committee

Folsom, California

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# TOPICS

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- Congestion Rent Shortfalls in NYISO and MISO
- Congestion Rent Shortfalls in CAISO

# CONGESTION RENT SHORTFALLS

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All ISOs have congestion rent shortfalls in their day-ahead market financial transmission right settlements.

- These shortfalls can have a variety of causes, including differences between the auction/allocation model and day-ahead market involving the network model, transmission outages or deratings, constraints modeled or enforced, loopflows, load weights used in zonal load modeling, loss flows, PAR schedules, and shift factor truncation.<sup>1</sup>
- The magnitude of these congestion rent shortfalls also depends on the level of CRR awards relative to the transfer capability of the transmission system.

<sup>1</sup> See for example, Scott Harvey, "Sources of Congestion Rent Shortfalls in the Day-Ahead Market, California ISO, Market Surveillance Committee, October 15, 2014; Scott M. Harvey, "Addressing Congestion Rent Shortfalls," EUCI Financial Transmission Rights Conference, July 26, 2011; Scott M. Harvey, "Analysis of Midwest ISO Congestion Rent Shortfalls," prepared for Midwest ISO Market Subcommittee, March 4, 2008.

# CONGESTION RENT SHORTFALLS

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It is informative to compare the level of the congestion rent shortfalls across ISOs.

- It is striking that even with few if any outages modeled in the its TCC auctions, the NYISO has had relatively low levels of congestion rent shortfalls in recent years.
- The modeling of transmission outages in NYISO TCC (CRR) auctions is determined by the responsible transmission owner.
- The transmission owners almost always choose not to model outages in the TCC auctions.

# CONGESTION RENT SHORTFALLS

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Day –Ahead market congestion rent charges in the NYISO averaged 88.5% of the target (payments without proration) TCC payout over the period 2012 through 2016.

## New York ISO Congestion Rents and Day-Ahead Market Shortfalls

	2012	2013	2014	2015	2016	Total
Day-Ahead Market Congestion Rents	\$301	\$644	\$578	\$540	\$438	\$2501
TCC Payments	\$326	\$737	\$647	\$ 577	\$538	\$2825
TCC Shortfall	\$25	\$72	\$69	\$37	\$100	\$303

Source: Potomac Economics, State of the Market Report for the New York ISO Markets, 2016 May 2017 Figure 8 p. 38; 2014 May 2015 Figure 9 p. 37; 2013 May 2014 figure 10, p. 38.

# CONGESTION RENT SHORTFALLS

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The New York ISO has in place in a design that allocates the cost of transmission outages in the day-ahead market to the responsible transmission owner.

- The implementation of this design has likely contributed to directly to reduced transmission outage costs through improved incentives.
- This design has also likely contributed indirectly to reduced congestion rent shortfalls because the settlement process allows the NYISO to identify anomalous congestion rent shortfalls on a routine basis so their cause can be determined, and appropriate correction action taken.
- The initial implementation of the NYISO design lead to the identification of a large database/modeling error in the auction which had been contributing materially to congestion rent shortfalls. <sup>1</sup>

# CONGESTION RENT SHORTFALLS

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MISO congestion rents averaged around 97% of the target (payments without proration) FTR payment in recent years, in part because the MISO limits the award of FTRs to a fraction of the capability of the transmission system. The MISO also buys back infeasible FTRs in the monthly auctions.

MISO Congestion Rents and Day-Ahead Market Shortfalls

	2012	2013	2014	2015	2016	Total
Day-Ahead Market Congestion Rents	\$777.7	842.1	1443.6	\$750.9	\$737.1	\$4551.3
TCC Payments	\$810.7	911.9	1512.3	\$754.3	\$712.5	\$4701.7
TCC Shortfall	\$33	69.9	68.7	\$3.4	-\$24.6	\$150.4

Source: Potomac Economics, 2016 State of the Market Report for the MISO Electricity Market, June 2017 Figure A83 p. 87, 89; 2015 Figure A 71 p. A-78; 2013 Figure A-63 p. A-106

# CONGESTION RENT SHORTFALLS

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The California ISO has had strikingly large congestion rent shortfalls in its day-ahead market, despite making only 82.5% of the transfer capability of the transmission system available for auction or sale. Congestion rents averaged a little less than 69% of the CRR payout over the 2014-2017 period.

California ISO Congestion Rents and Day-Ahead Market Shortfalls

	2014	2015	2016	2017	Total
Day-Ahead Market Congestion Rents	\$429.8	\$213.3	\$234	\$344.3	\$1221.4
CRR Payments	\$658.3	\$330.2	\$337.2	\$457.5	\$1783.2
CRR Shortfall	\$229.5	\$116.9	\$103.2	\$113.2	\$562.8

Source: California ISO, Market Performance Report

# CRR VALUATION IN THE CAISO

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Congestion rent shortfalls are not the same statistic as CRR valuation but they are not necessarily unrelated.

- A more detailed understanding of the causes of the high level of congestion rent shortfalls in the California ISO would help the California ISO and its stakeholders identify changes that would improve the performance of the CRR market.
- This goal would be supported by implementing software and process changes that would enable the California ISO to examine auction outcomes and CRR payouts on a routine basis without the need to devote substantial resources to each analysis.

# COMPASS LEXECON-FTI CONSULTING-ELECTRICITY

Joseph Cavicchi	<a href="mailto:jcavicchi@compasslexecon.com">jcavicchi@compasslexecon.com</a>	617-520-4251
John Cochrane	<a href="mailto:john.cochrane@fticonsulting.com">john.cochrane@fticonsulting.com</a>	617-747-1737
Bert Conly	<a href="mailto:bert.conly@fticonsulting.com">bert.conly@fticonsulting.com</a>	214-397-1604
Ken Ditzel	<a href="mailto:ken.ditzel@fticonsulting.com">ken.ditzel@fticonsulting.com</a>	703-966-1954
Scott Harvey	<a href="mailto:scott.harvey@fticonsulting.com">scott.harvey@fticonsulting.com</a>	617-747-1864
William Hogan	<a href="mailto:william_hogan@harvard.edu">william_hogan@harvard.edu</a>	617-495-1317
Joseph Kalt	<a href="mailto:jkalt@compasslexecon.com">jkalt@compasslexecon.com</a>	617-520-0200
Susan Pope	<a href="mailto:susan.pope@fticonsulting.com">susan.pope@fticonsulting.com</a>	617-747-1860
Ellen Smith	<a href="mailto:ellen.smith@fticonsulting.com">ellen.smith@fticonsulting.com</a>	617-747-1871
Jeffrey Tranen	<a href="mailto:jtranen@compasslexecon.com">jtranen@compasslexecon.com</a>	212-249-6569
Kevin Wellenius	<a href="mailto:kevin.wellenius@fticonsulting.com">kevin.wellenius@fticonsulting.com</a>	207-495-2999