

DMM Recommendations on Convergence Bidding



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California ISO
Your Link to Power

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Presentation Outline

- 🌐 Key Monitoring Issues & Concerns
- 🌐 Example of Seller's Choice Contract Concern
- 🌐 Key Mitigation Rules
- 🌐 Monitoring Requirements
- 🌐 Summary of DMM Recommendations

Key Monitoring Issues/Concerns

- 🌐 Use of virtual bids to increase congestion to earn greater revenues from Congestion Revenue Rights (CRR)
- 🌐 Impact of virtual bids on Local Market Power Mitigation (LMPM) provisions
- 🌐 Potential use of uninstructed deviations in Real Time to take advantage of a position taken in the Day Ahead market using virtual bids
- 🌐 Potential impact of virtual bids on congestion leading to infeasible schedules
 - e.g. Seller's Choice Contracts, Inter-tie Schedules

Summary of Seller's Choice Contract Concern

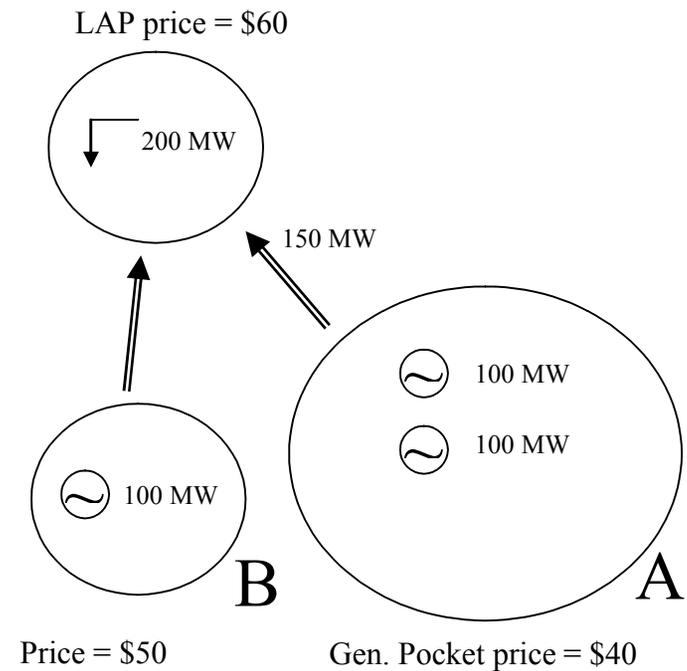
- 🌐 Nodal virtual bids could be used to undermine Inter-SC Trade physical validation procedures
- 🌐 A Buyer could counter this by submitting virtual supply bids
- 🌐 Position limits would help mitigate this concern

Example of Seller's Choice Contract Concern

Congestion, No Virtual Bidding

	Seller	
	Price and Quantity	Total
Contract (200 MW @ \$70/MW)	200 MW x \$70	\$14,000
Integrated Forward Market	(150 MW x \$40) + (50 MW x \$50)	\$8,500
Inter-SC Trade	-(150 MW x \$40) - (50 MW x \$50)	-\$8,500
Real Time	0	\$0
Net CAISO Settlement	IFM + IST + RT	\$0
Generation Production	-(150 MW x \$40) - (50 MW x \$50)	-\$8,500
Net Settlement		\$5,500

	Buyer	
	Price and Quantity	Total
Contract (200 MW @ \$70/MW)	-(200 MW x \$70)	-\$14,000
Integrated Forward Market	-(200 MW x \$60)	-\$12,000
Inter-SC Trade	(150 MW x \$40) + (50 MW x \$50)	\$8,500
Real Time	0	\$0
Net CAISO Settlement	IFM + IST + RT	-\$3,500
Generation Production	0	\$0
Net Settlement		-\$17,500

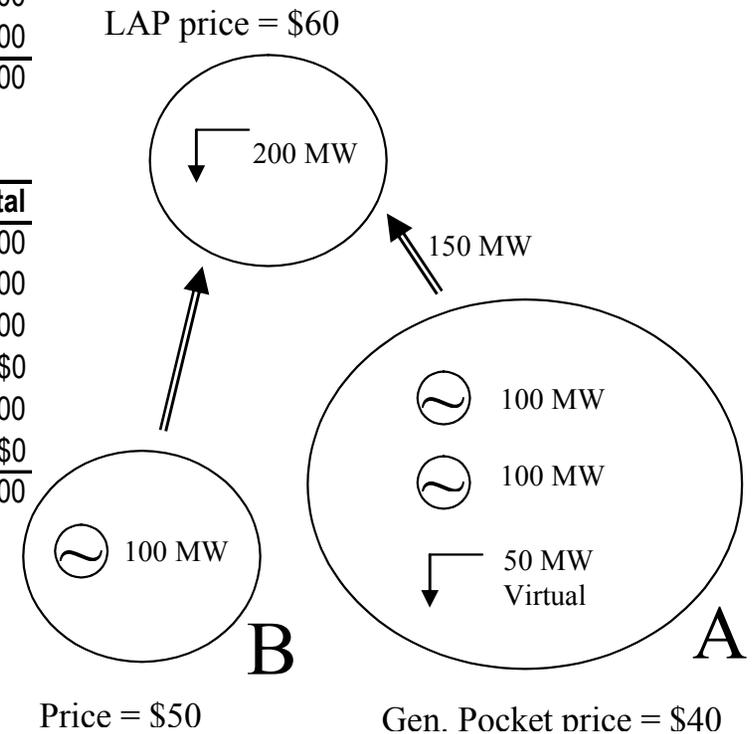


Example of Seller's Choice Contract Concern (2)

Congestion, Virtual Bidding by Seller

	Seller	
	Price and Quantity	Total
Contract (200 MW @ \$70/MW)	200 MW x \$70	\$14,000
Integrated Forward Market	(200 MW x \$40) - (50 MW x \$40)	\$6,000
Inter-SC Trade	-(200 MW x \$40)	-\$8,000
Real Time	(50 MW x \$40) - (50 MW x \$40)	\$0
Net CAISO Settlement	IFM + IST + RT	-\$2,000
Generation Production	-(150 MW x \$40)	-\$6,000
Net Settlement		\$6,000

	Buyer	
	Price and Quantity	Total
Contract (200 MW @ \$70/MW)	-(200 MW x \$70)	-\$14,000
Integrated Forward Market	-(200 MW x \$60)	-\$12,000
Inter-SC Trade	200 MW x \$40	\$8,000
Real Time	0	\$0
Net CAISO Settlement	IFM + IST + RT	-\$4,000
Generation Production	0	\$0
Net Settlement		-\$18,000



Key Mitigation Rules

- 🌐 CRR Settlement Rule
- 🌐 Position Limits
- 🌐 Ability to Limit or Suspend Trading
- 🌐 Provisions to Deter Uninstructed Deviations
- 🌐 LMPM Modifications

Summary of CRR Settlement Rule

The CRR settlement rule is triggered if, in any hour,

- 🌐 A Participant has a Virtual Bid accepted at a node (or nearby node) that is a source or sink for a CRR that it owns
AND
- 🌐 The difference between the Day Ahead MCPs for the source and sink is greater than the difference between the Real Time MCPs.
- 🌐 When the rule is triggered for a particular hour, the CRR is settled at the average hourly cost of the CRR (i.e., the auction price).

Position Limits

- 🌐 If nodal virtual bidding is pursued, DMM recommends an initial limit of 10% of the load or supply at each node.
- 🌐 Justification
 - 10% level needed to limit ability of any individual supplier to significantly “move price” at one node under most conditions.
 - Assuming a competitive market with at least 4 to 6 highly active participants, 10% limit could still result in approximate level of virtual bidding in other ISOs (e.g. virtual bids = 40 to 60% of physical)
 - Assuming a less competitive market with just one or two highly active participants, 10% limit could still provide some limit on potential gaming/market power concerns
 - 10% level would allow generators significant “hedge” against under-generation due to outages/operational problems, but would limit ability to profit from these operational problems.

Ability to Suspend or Limit Trading

- 🌐 ISO-NE and the NYISO have the ability to limit or suspend virtual trading.
- 🌐 Additional details on behavior that would warrant such actions need to be determined.

Provisions to Deter Uninstructed Deviations

- Depending on the level of position limits under a nodal design, UDPs may not be necessary.
- The Eastern ISOs have financial provisions that help to deter uninstructed deviations.
- Some additional provisions to deter uninstructed deviations may be desirable for other reasons, e.g. ineligibility for uplift payments.

Local Market Power Mitigation Options

	Forecast Load	Physical Load Bids	Physical Supply Bids	Virtual Load Bids	Virtual Supply Bids
Current	✓		✓		
FERC Req.		✓	✓		
Option 1		✓	✓	✓	✓
Option 2	✓		✓		
Option 3	✓		✓	✓	✓

Local Market Power Mitigation Recommendation

- Under either a nodal or LAP-level Convergence Bidding design, DMM recommends including virtual and physical supply and demand bids in the LMPM pass, (Option 1).
 - Including virtual bids in LMPM pass ensures that mitigation is applied to physical supply bids that most likely to clear in actual IFM run.
 - This is consistent with what is done by other ISOs.
- Even with these modifications, virtual bids could undermine LMPM in the absence of a deep and liquid virtual market.

Key Monitoring Requirements

- Ability to track virtual bidding on participant portfolio level
 - Disclose & verify SC affiliations
 - Large or persistent losses from virtual bidding (which may be indicate of gaming)
 - Potential impacts on participant's CRRs
- Ability to Re-Run the DA Market (excluding virtual bids) to assess:
 - Impact on convergence (or divergence) of DA and RT prices
 - Impacts of each participant's convergence bidding on prices, congestion, and their net profits
- Monitoring/analysis of real time impacts and deviations

*Initial and ongoing monitoring needs
greatly increase from LAP to nodal design*

Summary of DMM Recommendations

- 🌐 Under nodal Convergence Bidding, DMM recommends
 - CRR Settlement Rule
 - Position Limits, at least initially
 - Ability to Limit or Suspend Bidding
 - LMPM Modifications
 - Consider provisions to Deter Uninstructed Deviations
- 🌐 Under LAP-Level Convergence Bidding, DMM Recommends
 - Ability to Limit or Suspend Bidding