



# Transmission Constraint Pricing

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# Today's Discussion

- ◆ **Background**
- ◆ **NYISO Proposal**
- ◆ **Consumer Impact Analysis – Follow Up**
- ◆ **Supporting Tariff Changes**
- ◆ **Next Steps**
- ◆ **Appendix – Updated Constraint Analysis**

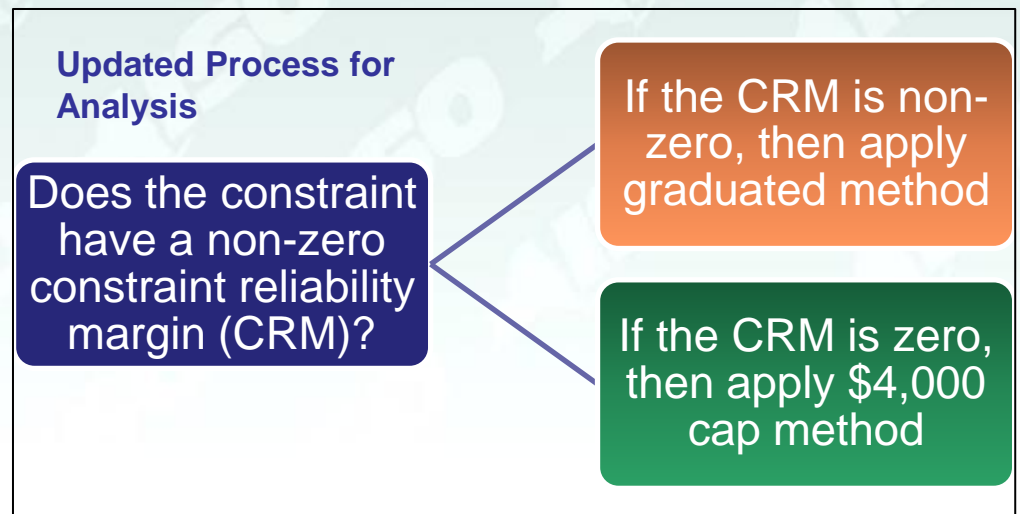
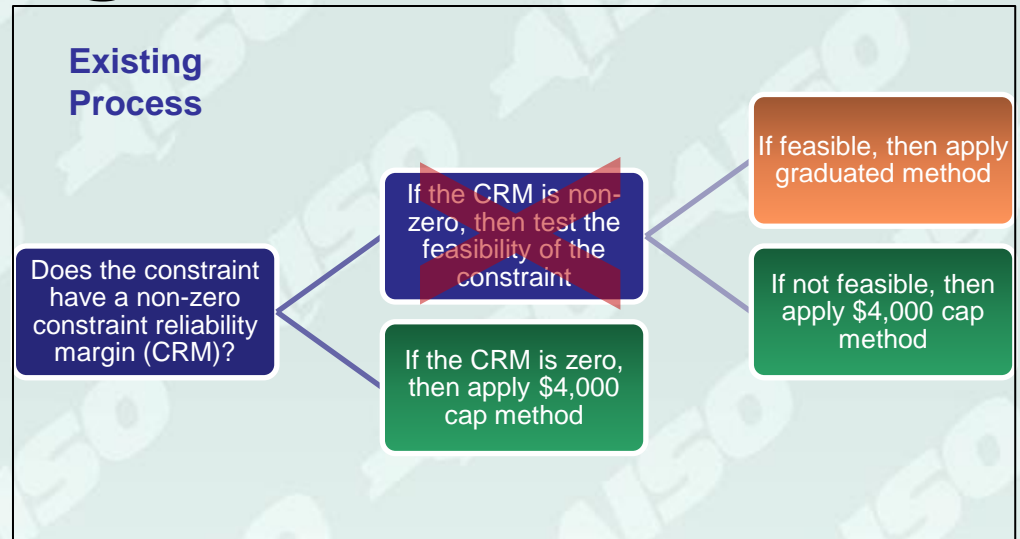
# Background

- ◆ During the Q2 2016 SOM Report on August 29, 2016, stakeholders requested that the NYISO describe how the graduated Transmission Shortage Cost works
  - *The graduated Transmission Shortage Cost is implemented within the NYISO's security constrained unit commitment and dispatch algorithms used by the SCUC, RTC and RTD programs*
- ◆ On October 6, 2016, the NYISO notified Market Participants of a potential market problem related to the current implementation of the graduated Transmission Shortage Cost
- ◆ The NYISO provided an overview of the current implementation of the graduated Transmission Shortage Cost at the October 19, 2016 MIWG meeting
- ◆ The NYISO declared a Market Problem at the November 3, 2016 MIWG meeting
- ◆ The NYISO filed a waiver request with FERC on January 6, 2017
- ◆ The NYISO presented an analysis of its proposed changes to the current transmission constraint pricing logic, as well as a consumer impact analysis at the end of January 2017

# Analysis of Revised Transmission Constraint Pricing

- ◆ At the December 21, 2016 MIWG meeting, stakeholders requested and NYISO agreed to rerun its analysis based on the proposal to modify the second step to \$1,175/MWh
- ◆ The NYISO completed this rerun and presented results at the January 26, 2017 MIWG meeting
- ◆ A Consumer Impact Analysis for the NYISO's proposal was presented at the January 31, 2017 MIWG meeting

Please refer to the October 19, 2016 MIWG materials for more information on the graduated Transmission Shortage Cost and \$4,000 cap methods.



# The NYISO's Proposal (1 of 2)

- ◆ **Based on its analysis, the NYISO is proposing to remove the feasibility screen and apply the graduated Transmission Shortage Cost method to all constraints with a non-zero constraint reliability margin (CRM)**
  - *Single \$4,000/MWh cap would continue to apply for all facilities and interfaces with a zero CRM value*
  - *The list of facilities and interfaces with a non-standard 20MW CRM was posted as part of this meeting material for the December 21, 2016 MIWG*
- ◆ **The NYISO is also proposing to revert the second step of the graduated Transmission Shortage Cost from \$2,350/MWh to \$1,175/MWh**
  - *The NYISO has determined that its concern with forgoing dispatch to secure transmission constraints when all eastern reserve locations and eastern reserve products are short is not a practical concern*
  - *The \$1,175/MWh value will continue to support moving resources that can effectively secure the transmission constraint before utilizing the 15 MW of relief available from the second step of the graduated Transmission Shortage Cost*
    - **The \$4000/MWh price value still acts as a backstop to ensure that resources are dispatched for constraints with larger overloads**
  - *Reserve constraints are often more readily fulfilled than transmission constraints; transmission constraints bind much more often than reserve constraints*
    - **Reserves are procured over an entire reserve region, allowing the market software to modify the schedules of a larger set of resources in order to provide reserves, compared to the limited number of resources that may be available to resolve a specific transmission constraint**
  - *An appropriate shadow price for the middle point of the graduated Transmission Shortage Cost should adequately reflect the increasing use of the CRM to accommodate load, without providing an administrative price signal that is inefficiently high and thus exposes the market to unreasonable costs given the nature of the constraint*
    - **The middle price point of \$1,175/MWh appropriately values a decrease in the CRM above a shortage of Eastern 10-minute total reserve, which has a shadow price of \$775/MWh**



# The NYISO's Proposal (2 of 2)

- ◆ The NYISO would like to pursue software changes to implement the updated process with a modified value for the second step of the graduated Transmission Shortage Cost and update the tariff to reflect the revised process including the use of constraint relaxation and treatment of facilities with zero CRM value
- ◆ The NYISO will work with stakeholders through the normal shared governance process to vet the proposal and accompanying tariff revisions
  - *The NYISO will not update the transmission constraint pricing software without first gaining FERC's approval of the necessary tariff revisions to reflect the agreed upon changes*

# Analysis of LI Cost Impacts

- ◆ Stakeholders requested further information regarding the results shown for Long Island as part of the Consumer Impact Analysis presented at the January 31, 2017 MIWG meeting
- ◆ The NYISO examined the events of August 12, 2016 further to better understand the drivers of the cost impacts identified for Long Island in the Consumer Impact Analysis
- ◆ Historically, mandatory SCR/EDRP events are relatively rare
  - *August 12 was the only such event in 2016 and the first mandatory SCR/EDRP event since July 2013*

# Analysis of LI Cost Impacts

- ◆ There were more active constraints in the rerun case than there were during the actual day
  - *For example, Dunwoodie – Shore Rd 345kV for loss of Neptune HVDC Tie Line was binding in the rerun case, but was not binding that actual day*
    - This is expected due to removing the feasibility screen, which would relax constraints that have no effective dispatch, in the rerun case
- ◆ The Y49 Sprainbrook – East Garden City Line was on forced outage during the scarcity event
  - *Forced outage event started 7/30/2016 13:01 and continued through 8/12/2016*
  - *Additionally, the 677 line was also derated by 400MW during this time which limited flows out of the Northport generation pocket*
- ◆ Flows on the Northport - Norwalk 1385 line were limited by Northport export constraints during the scarcity event
  - *This prevented further flows into LI*
  - *The Northport constraints have a zero CRM value*
- ◆ On August 12, 2016, all units on LI were on and running at UOL
  - *Operators were relying on the 901/903 ties between LI and NYC to manage grid reliability*
- ◆ On August 12, 2016, all LI specific reserves were short

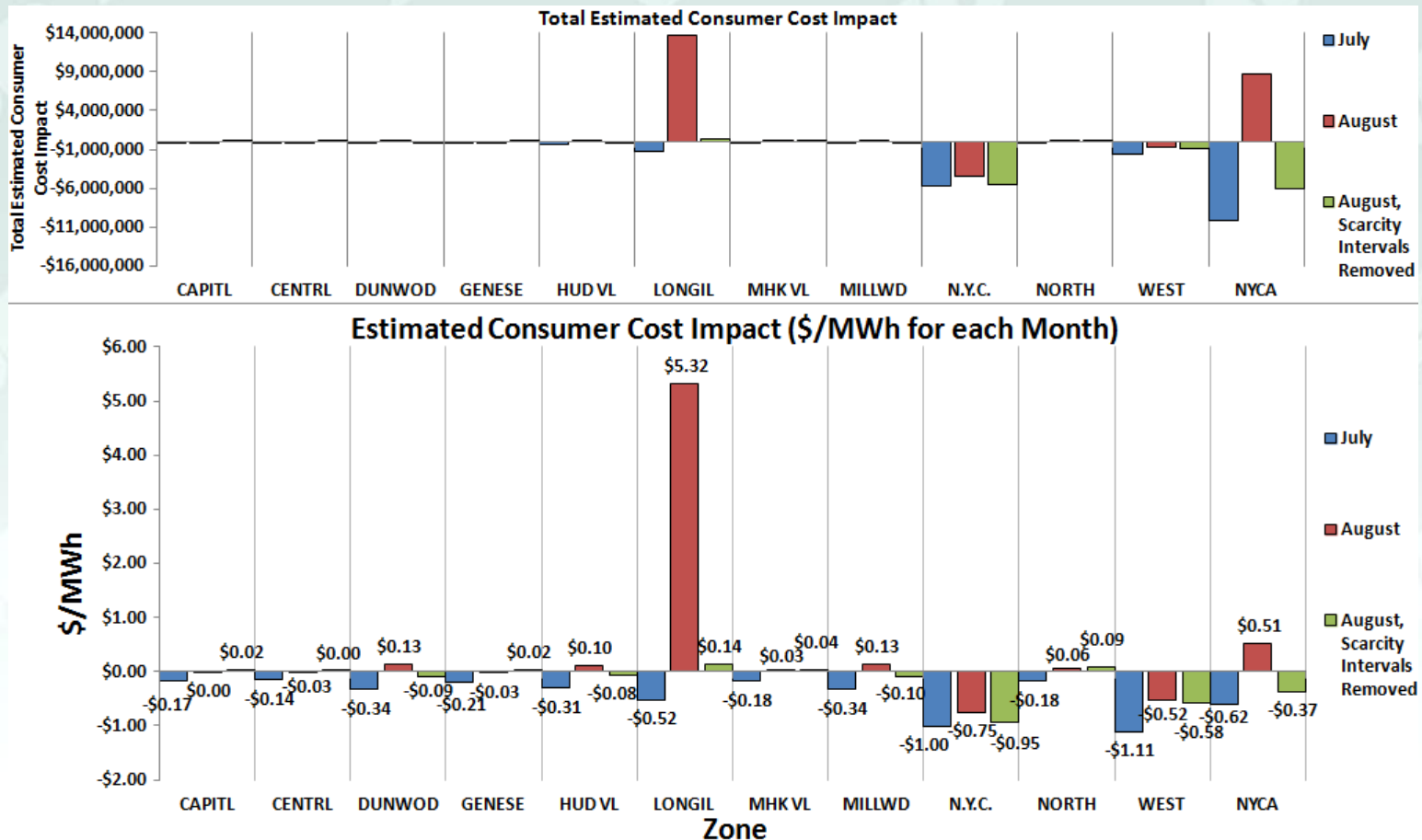


# Analysis Conclusion

- ◆ Prices during the scarcity intervals in the original case reflected the relaxation of transmission constraints
- ◆ Transmission constraints for the same intervals in the rerun case were appropriately valued using the revised transmission constraint pricing methodology
  - *Transmission on LI was appropriately valued given:*
    - The high load conditions on LI
    - The importance of the transmission constraints that were binding at the time
- ◆ Separately, as requested, the NYISO has posted transmission constraint data with today's meeting materials

# Market Impacts

- ◆ As requested at the January 31, 2017 MIWG meeting, the chart below estimates the LBMP impact for the NYISO proposal in \$/MWh
  - *Based on the rerun analysis, the proposal results in Statewide LBMP impact of  $-\$0.62/\text{MWh}$  for July and  $-\$0.32/\text{MWh}$  for August excluding the scarcity event*



# Proposed Tariff Updates

- ◆ **Additional revisions to MST Section 17.1.4 since the January 26, 2017 MIWG meeting are included with today's meeting material**
  - *Additional ministerial/editorial and clarifying revisions (including further clarifying the handling of infeasible transmission constraints)*
  - *Adding an express requirement for the NYISO to notify market participants of any temporary changes to the transmission constraint pricing values under the pre-existing process to allow for such temporary changes*
    - **This notification requirement is consistent with the reforms set forth in FERC's recent notice of proposed rulemaking (NOPR) addressing uplift cost allocation and transparency**
  - *All other tariff revisions reviewed at the January 26, 2017 MIWG meeting remain unchanged (MST Section 2.20 and OATT Section 1.20)*

# Next Steps

- ✓ **January-February 2017**
  - ✓ *Work with Market Participants on the proposal and related tariff revisions*
  - ✓ *Perform a Consumer Impact Assessment of the proposed changes*
- ◆ **March 2017**
  - *Seek BIC and MC approval*
- ◆ **April 2017**
  - *Seek Board of Directors approval*
  - *File tariff revisions with FERC for approval*
- ◆ **June 2017**
  - *Subject to timely approvals from stakeholders, the Board of Directors and FERC, implement software changes to align software implementation with the revised tariff*
- ◆ **Please contact Mike DeSocio ([mdesocio@nyiso.com](mailto:mdesocio@nyiso.com)) with questions or concerns**

# Questions?





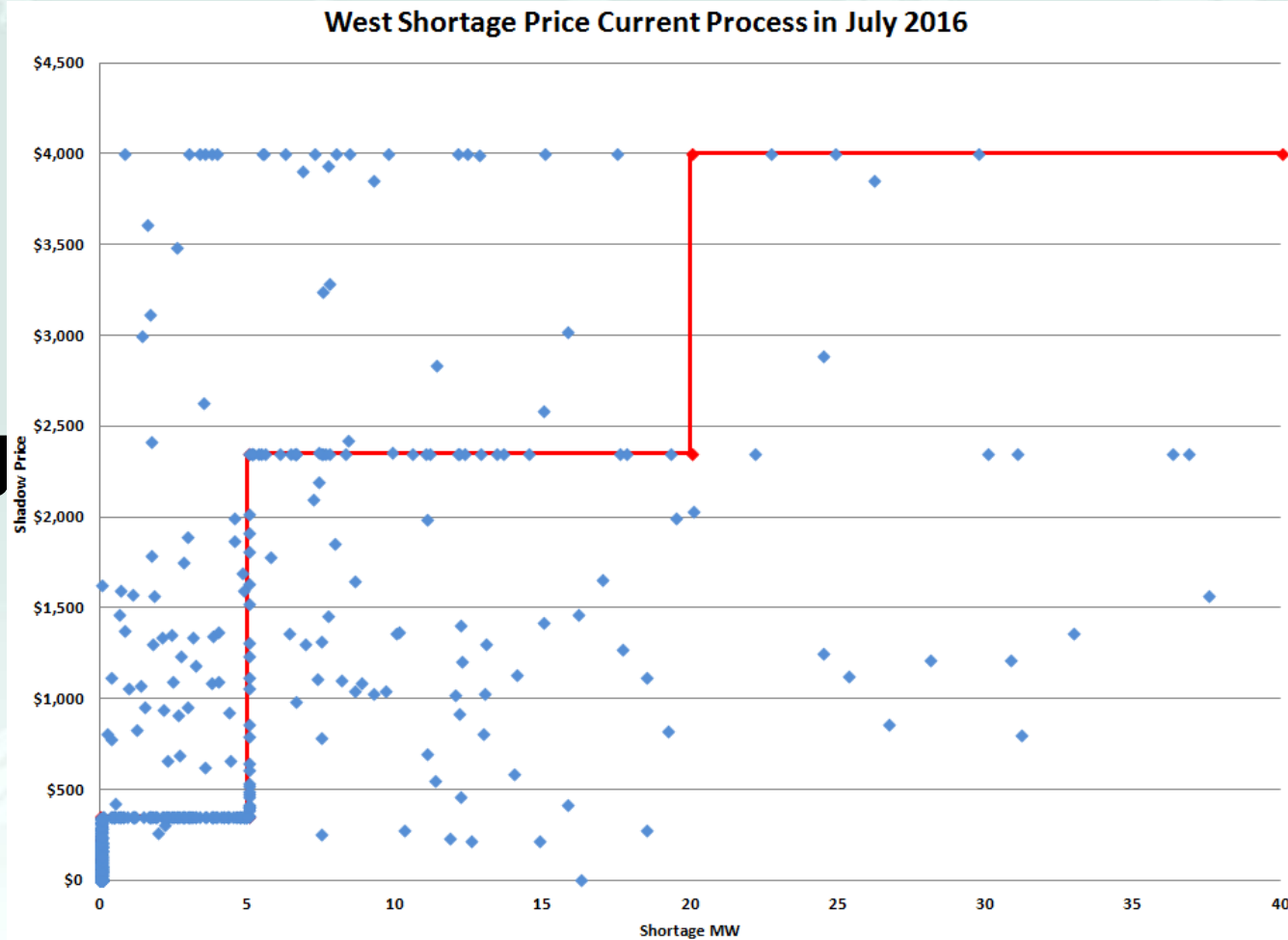
# **Appendix: Constraint Data**

# Constraint Data

- ◆ **Slides 7 through 14 presented at the December 21, 2016 MIWG meeting originally excluded transmission constraints with a zero CRM value**
  - *This resulted in some transmission constraints being excluded on the scatter plots*
- ◆ **The revised graphs on the following slides include all transmission constraints for July and August 2016**
  - *Scatter plots are also included for Long Island transmission constraints*

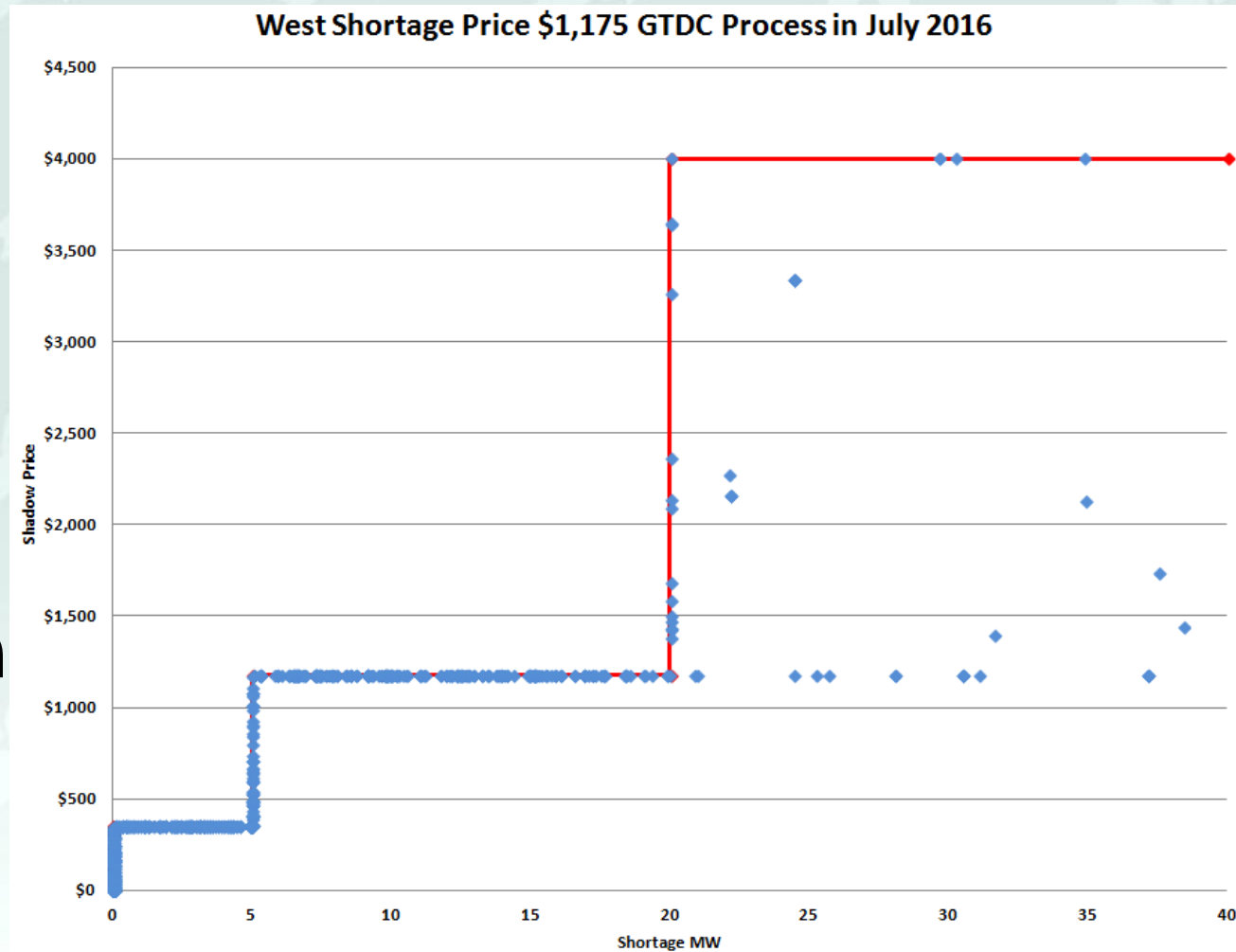
# Analysis of GTDC Relaxation

- ◆ Western NY July 2016 constraint shadow prices using the **current** process



# Analysis of GTDC Relaxation

- ◆ Western NY July 2016 constraint shadow prices using the **updated** process with a **\$1,175** middle point

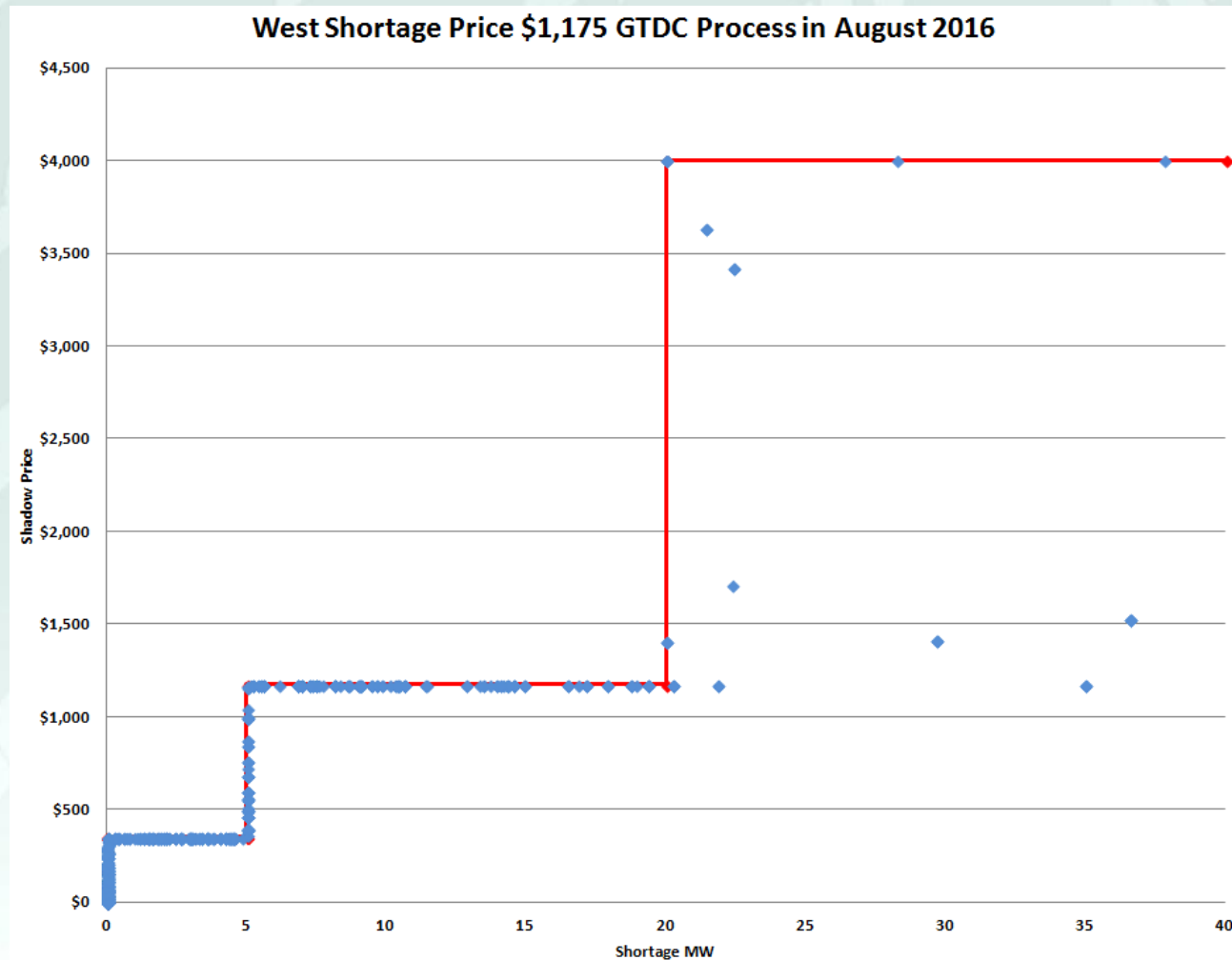






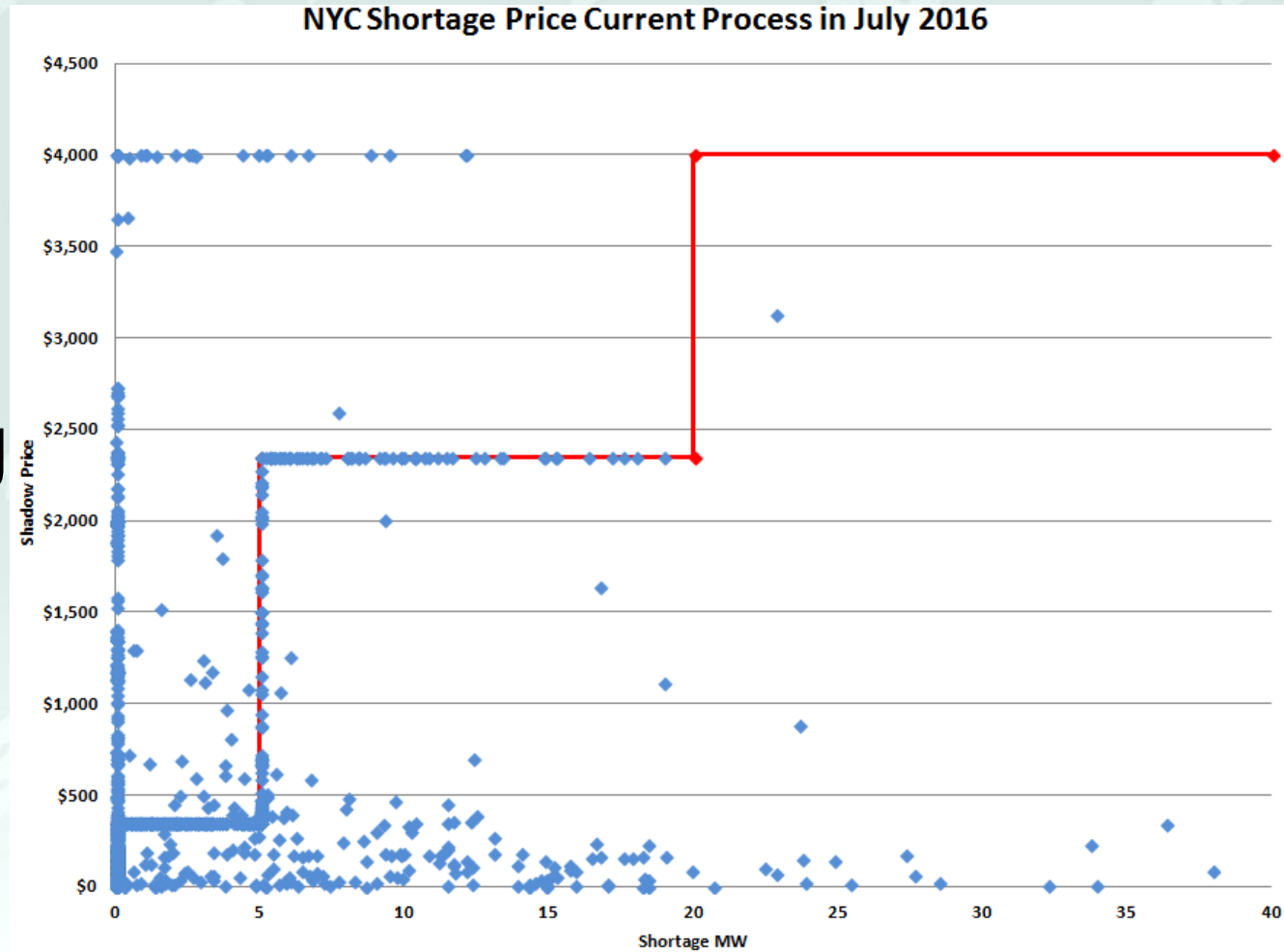
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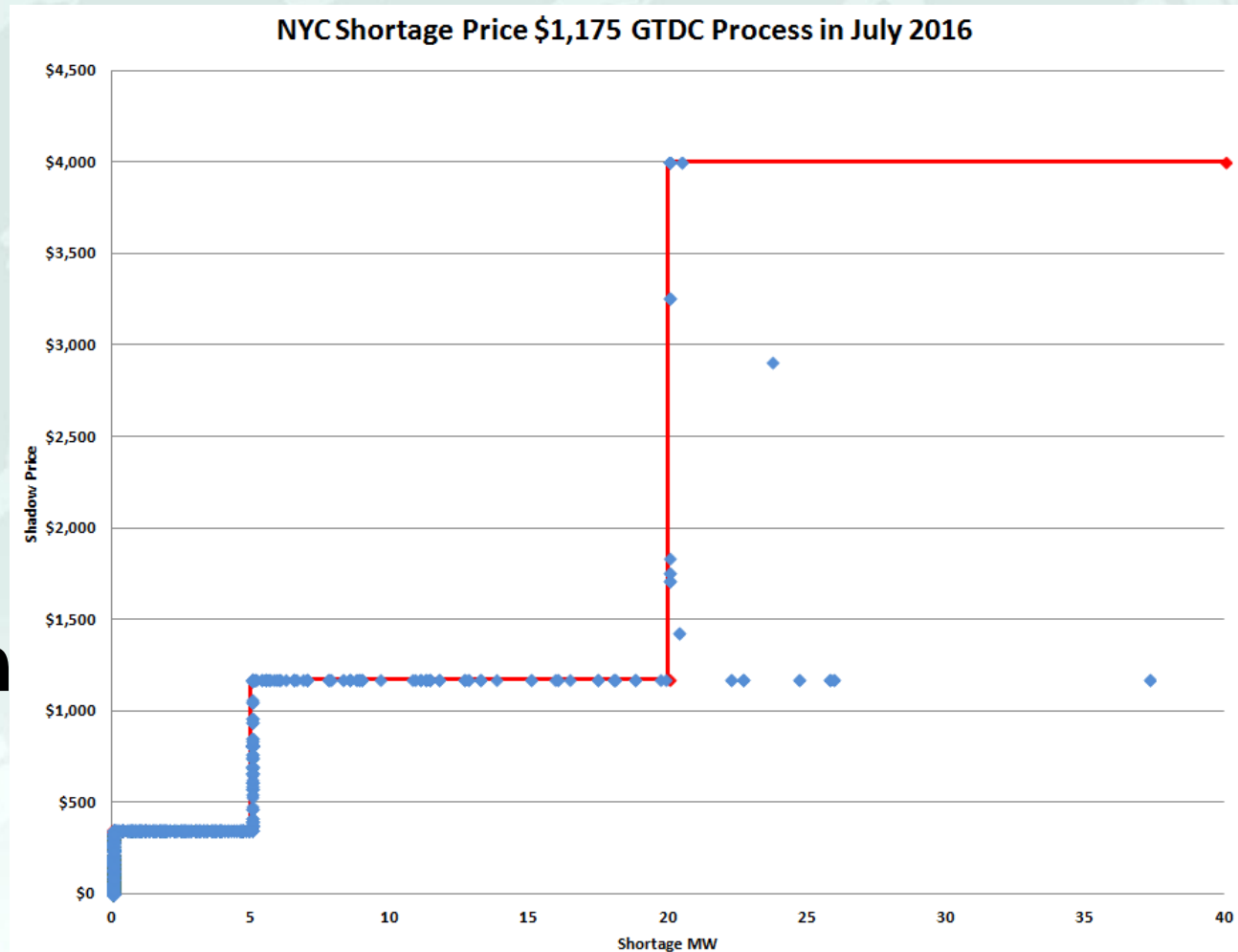
# Analysis of GTDC Relaxation

- ◆ NYC July 2016 constraint shadow prices using the **current** process



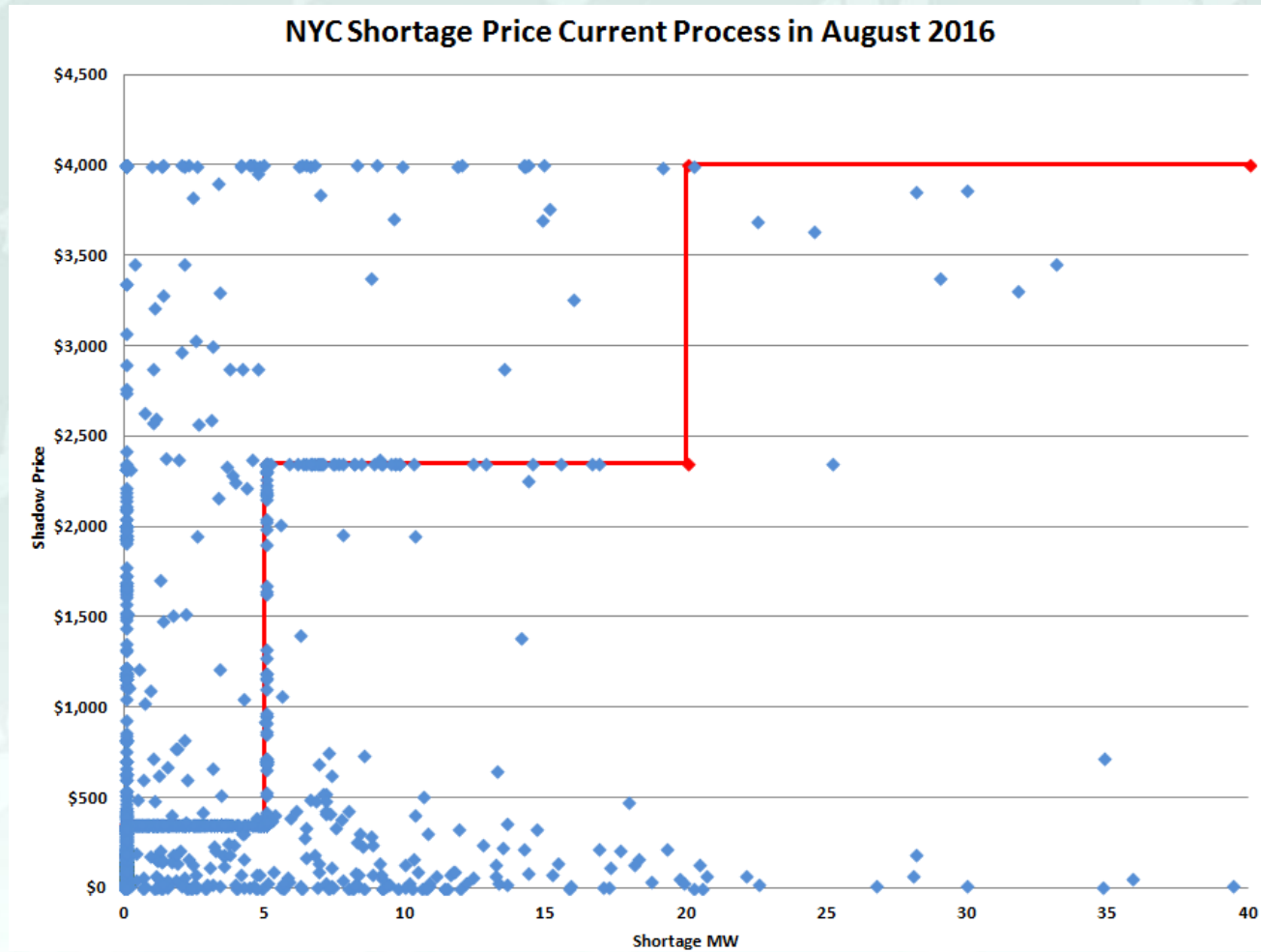
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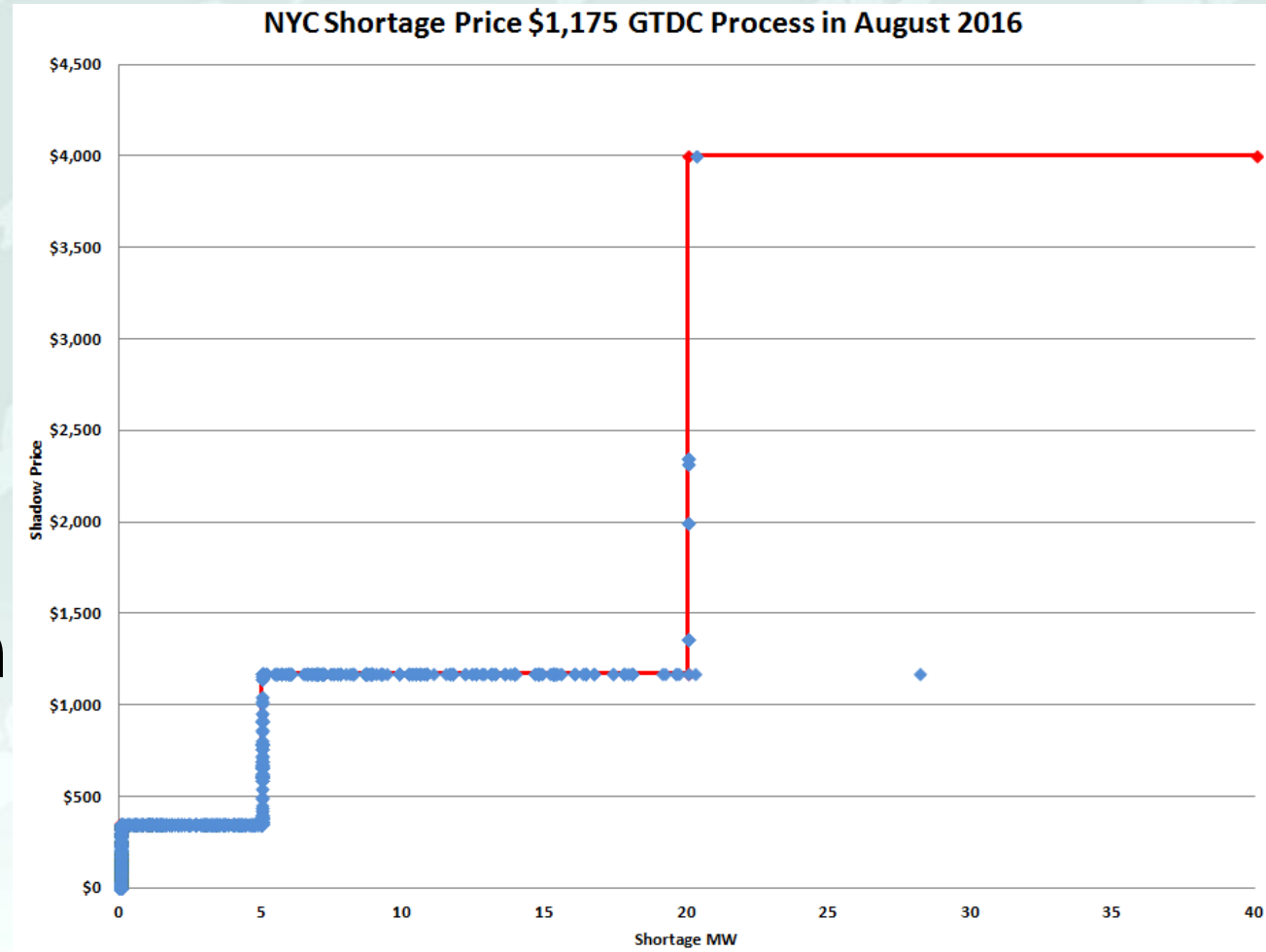
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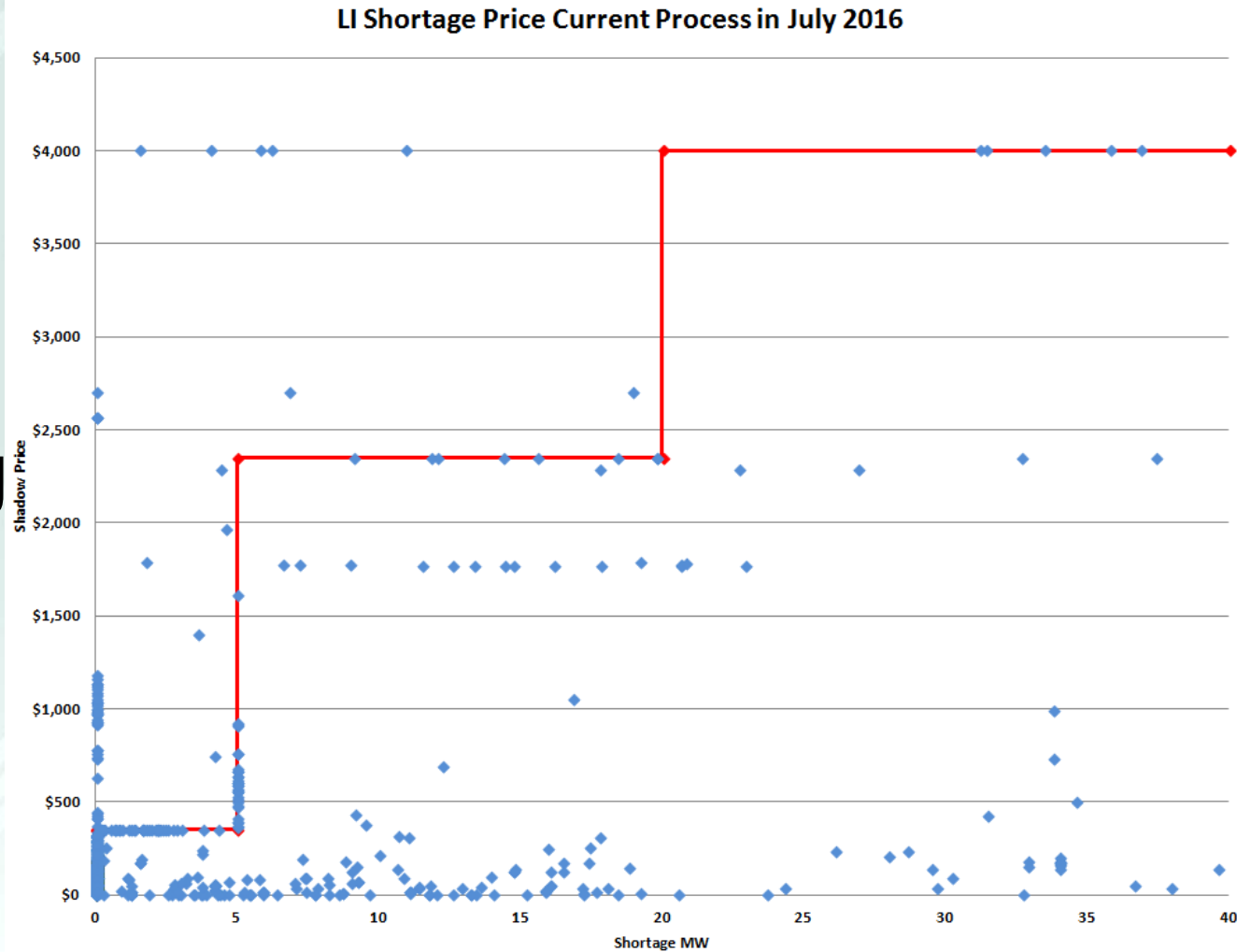
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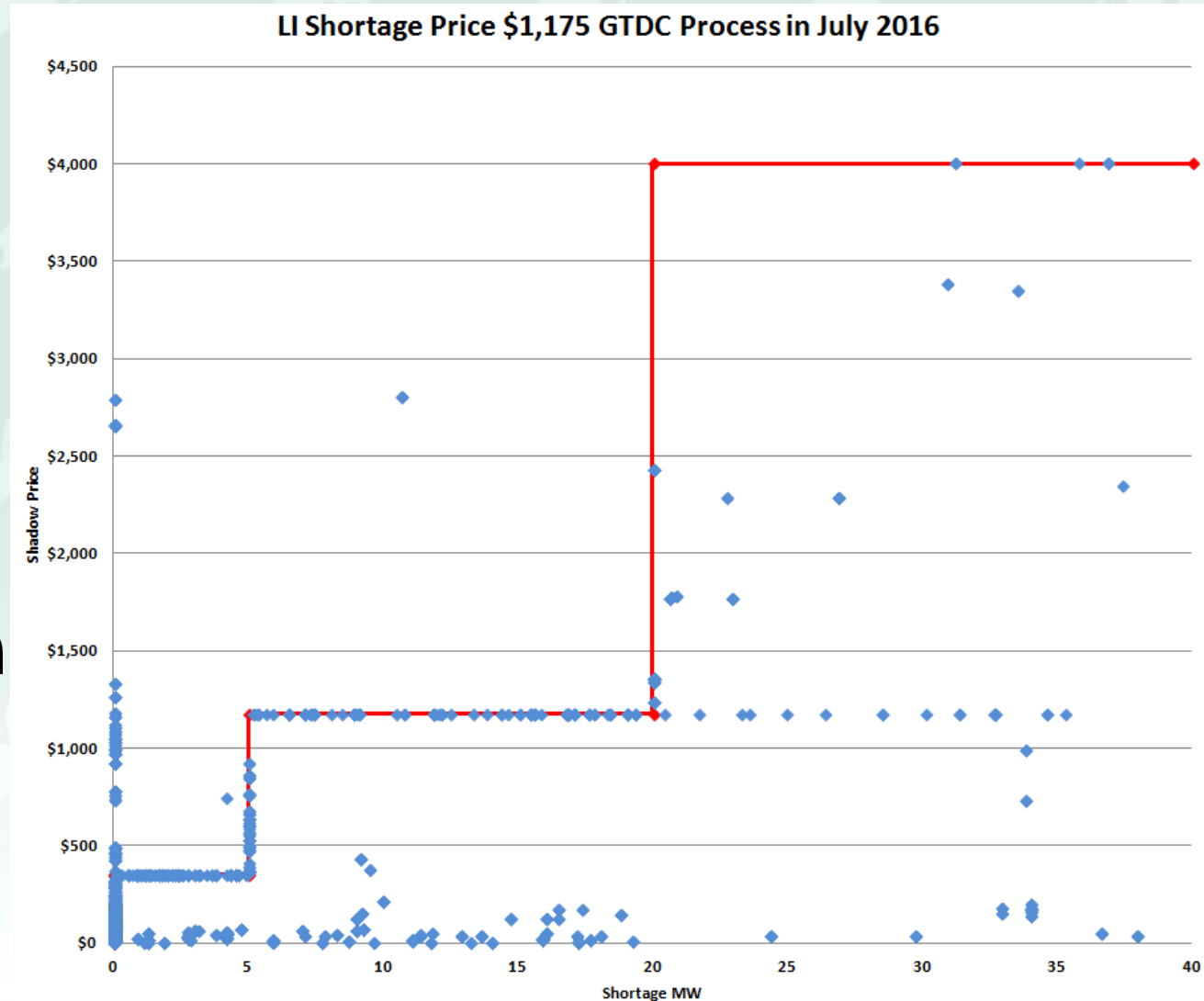
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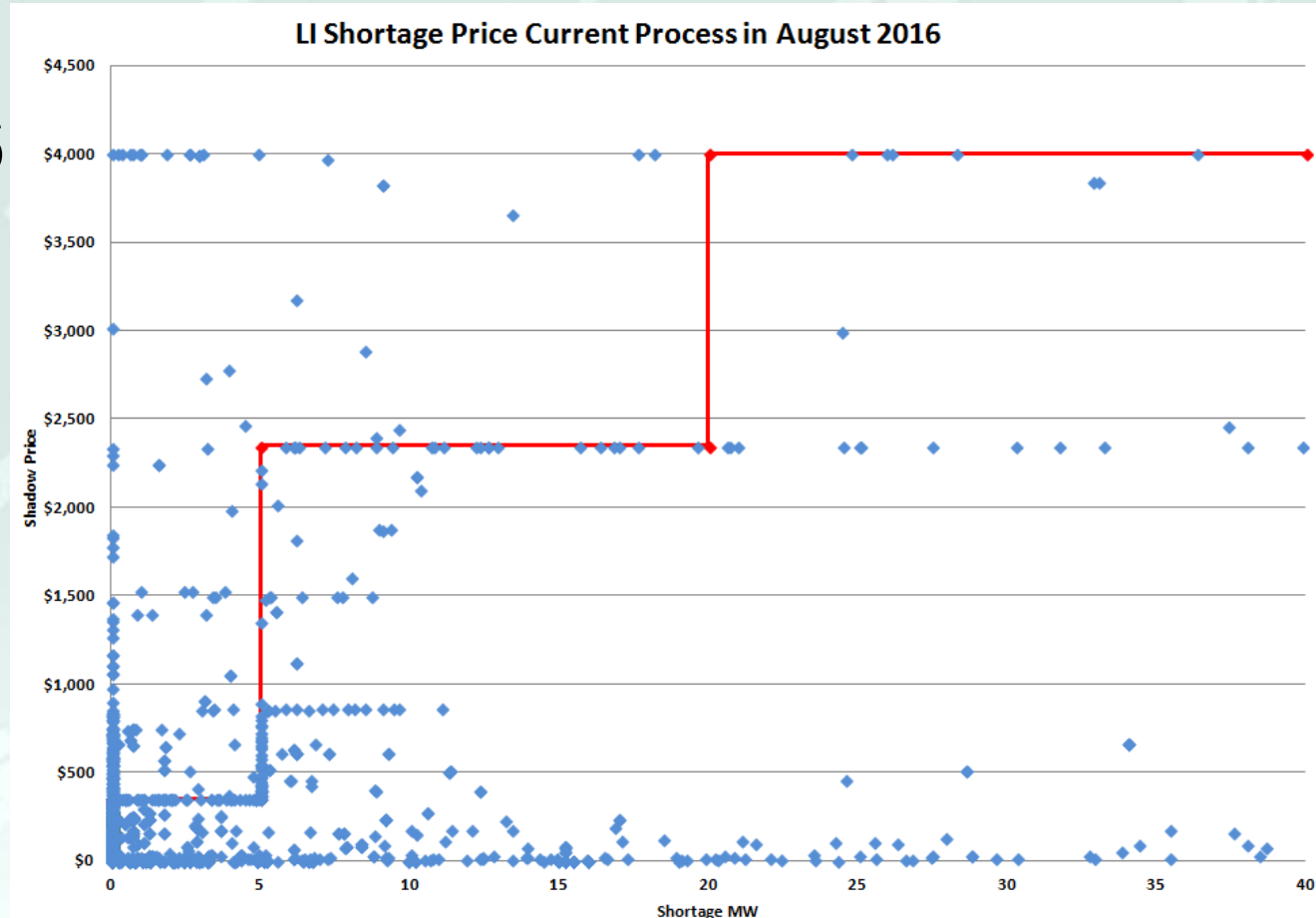
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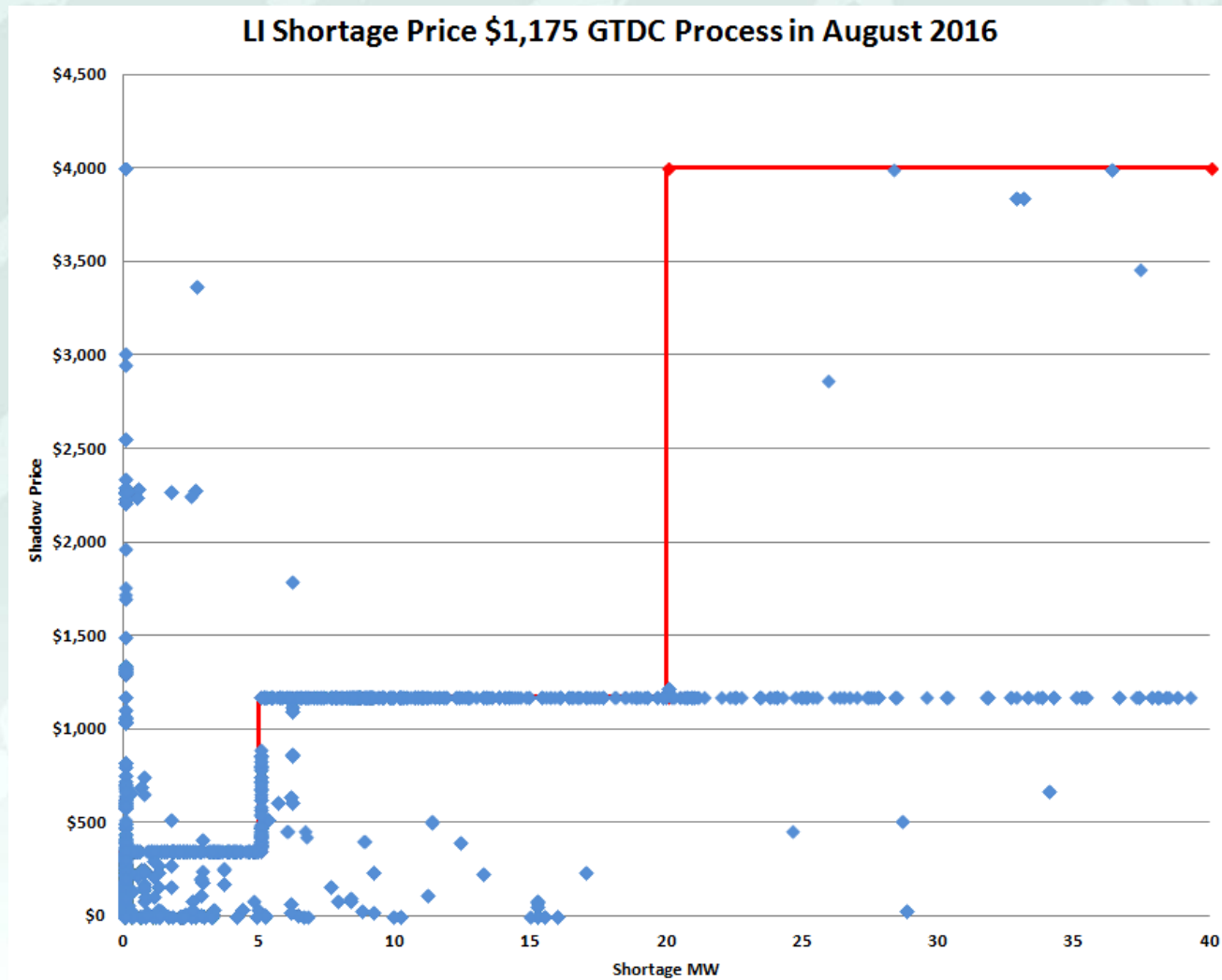
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- ◆ **The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:**
  - *Maintaining and enhancing regional reliability*
  - *Operating open, fair and competitive wholesale electricity markets*
  - *Planning the power system for the future*
  - *Providing factual information to policy makers, stakeholders and investors in the power system*
  
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