Evaluation of the Impacts of the PJM Proxy Bus Modeling Issue

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Introduction

- On August 5, the NYISO identified (and fixed) an issue with the LBMP calculation for the PJM proxy bus in the RT market.
- On August 9, the MMU was informed by the NYISO of the issue.
  - ✓ We were asked to evaluate the effects on the market and report our findings to stakeholders.
- This presentation summarizes our evaluation of the effects of the modeling issue, including:
  - ✓ Estimates of the direct effects of the modeling issue on the LBMPs at the PJM Proxy Bus and uplift charges;
  - ✓ The likely indirect effects resulting from the issue; and
  - ✓ Our recommendation of whether this issue constitutes a Market Problem.

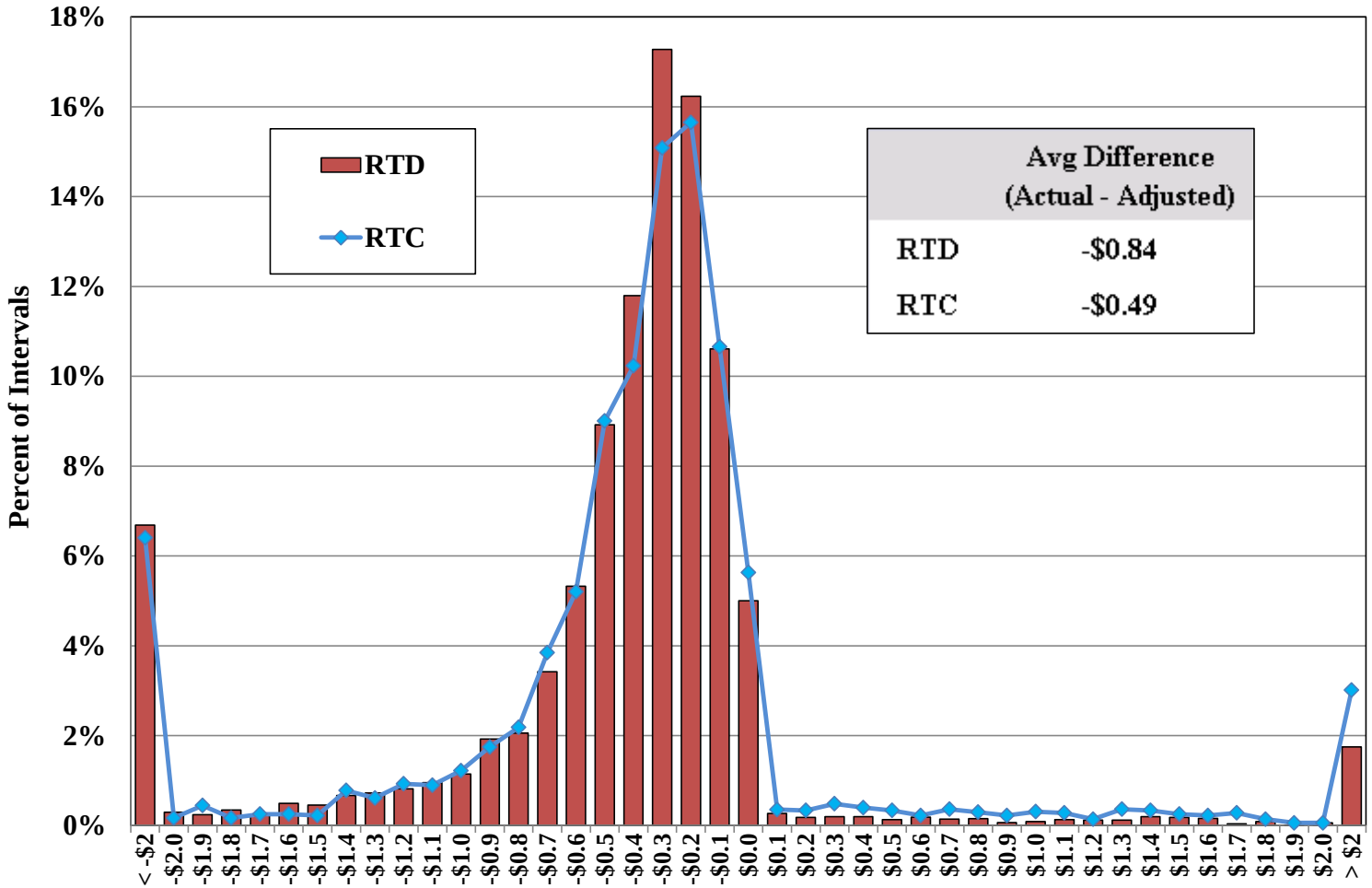
Description of the Modeling Issue

- The scheduling and pricing software assumes that the PAR-controlled Hopatcong-Ramapo line (i.e., the 5018 line) carries:
  - ✓ 61 percent of flows across the primary PJM/NYISO interface when both PARs are in service (30.5 percent each); and
  - ✓ 46 percent of flows when only one Ramapo PAR is in service.
  - ✓ Lines on the PA/NY border are assumed to carry the rest.
- One Ramapo PAR was forced out of service in late-June and is currently scheduled to return in mid-December.
  - ✓ On June 29, the DAM software was updated correctly.
    - MPs were notified via interface pricing posting on the OASIS.
  - ✓ However, the RTM software was not updated until August 5.
    - Consequently, the 5018 line was assumed to carry 30.5 percent of the interface flow.

Direct Market Impacts of the Modeling Issue

- The following figure shows the distribution of the differences between actual LBMPs (based on 30.5%) and the correctly calculated LBMPs (based on 46%) for RTD and RTC.
  - ✓ The average PJM Proxy LBMP was reduced $0.49/MWh (or 1.7%) in RTC and $0.84/MWh (or 3.0%) in RTD.
    - Losses were down $0.46/MWh in RTC and $0.47/MWh in RTD
    - Congestion was down $0.03/MWh in RTC and $0.37/MWh in RTD
  - ✓ Thus, the issue generally led PJM imports to be under-valued relative to the standard assumption.
- During the period, we estimate the direct effect on Rate Schedule 1 charges:
  - ✓ Balancing loss residual surpluses were increased ~$60k; and
  - ✓ Balancing congestion surpluses were increased ~$134k.

Differences between Actual LBMPs & Correctly-Calculated LBMPs at the PJM Proxy Bus



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Indirect Effects of the Modeling Issue

- However, we do not quantify the indirect effects of this issue.
  - ✓ The PJM Proxy Bus was under-priced by RTC (i.e., actual LBMPs < correctly-calculated LBMPs) in 92 percent of intervals, which could lead to:
    - Under-scheduling imports from PJM and increased reliance on internal resources and imports from other control areas; and
    - Higher total production cost of meeting the system's demand.
  - ✓ On the other hand, the PJM Proxy Bus was over-priced by RTC in 8% of intervals, which could lead to:
    - Over-scheduling PJM imports and under-use of other resources.
  - ✓ The resulting increase in production costs was most likely below $100k.

Conclusions

- The NYISO uses a static assumption for the distribution of flows across the primary PJM-NYISO interface.
- From June 29 to August 5, the NYISO used 30.5 percent rather than 46 percent in the RTM software.
  - ✓ The correct value was used in the DAM.
- This led the PJM proxy LBMP to be slightly lower on average, reducing imports (and increasing exports) in RT. This likely:
  - ✓ Contributed nearly $200k to balancing residual surpluses; and
  - ✓ Increased overall production costs by less than $100k.
- We recommend the NYISO not classify this issue as a Market Problem.