Evaluation of 10-Minute Reserve Offers & Price Convergence after Mitigation Rule Modifications – Phase 2

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Day-Ahead Reserve Mitigation Rule Changes
Introduction

- On January 23, 2013, the NYISO implemented the first phase of a process to modify two DAM ancillary services mitigation provisions. In the first phase, the NYISO:

  - ✓ Raised the reference level cap for 10-minute non-spinning reserves from $2.52/MWh to $5/MWh; and

  - ✓ Raised the offer cap of 10-minute spinning reserves for New York City generators from $0/MWh to $5/MWh.

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Day-Ahead Reserve Mitigation Rule Changes
Introduction

- On September 25, 2013, the NYISO implemented the second phase of a process to modify two DAM ancillary services mitigation provisions. In the second phase, the NYISO:
  - ✓ Raised the reference level cap for 10-minute non-spinning reserves $5/MWh to $10/MWh; and
  - ✓ Raised the offer cap of 10-minute spinning reserves for New York City generators from $5/MWh to $10/MWh.
- The MMU is required to evaluate the competitiveness of the 10-minute spinning and non-spinning reserves markets and issue recommendations regarding the implementation of subsequent phases.

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## Day-Ahead Reserve Mitigation Rule Changes Summary of Offers and Price Convergence

- The following two figures summarize our evaluation of the reserve markets for comparable months for three periods:

  1) 2012 February to June – Prior to implementation of Phase 1

  2) 2013 February to June – During implementation of Phase 1

  3) 2014 February to June – During implementation of Phase 2

- The figures summarize average DA and RT prices in the upper portion and offer prices in the lower portion.

  ✓ Quantities are shown by load level and time of day.

- The first figure summarizes:

  ✓ Eastern NY 10-min Spinning Reserve clearing prices; and

  ✓ NYC 10-min Spinning Reserve offer prices.

- The second figure summarizes Eastern NY 10-min Non-Spinning Reserve clearing prices and offer prices

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Day-Ahead Reserve Offers and Price Convergence
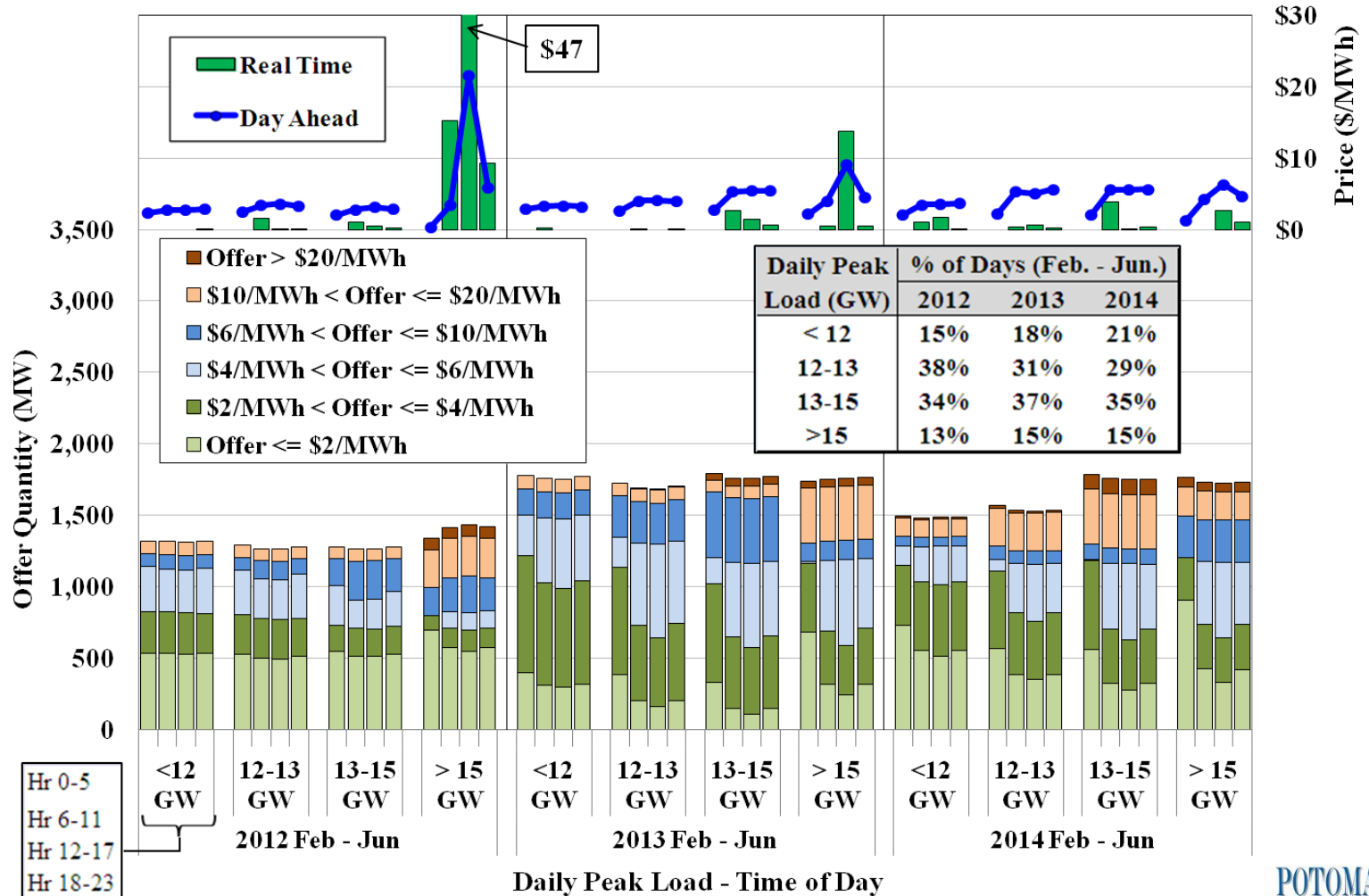## 10-Minute Spinning Reserves
Eastern Clearing Prices & NYC Offers
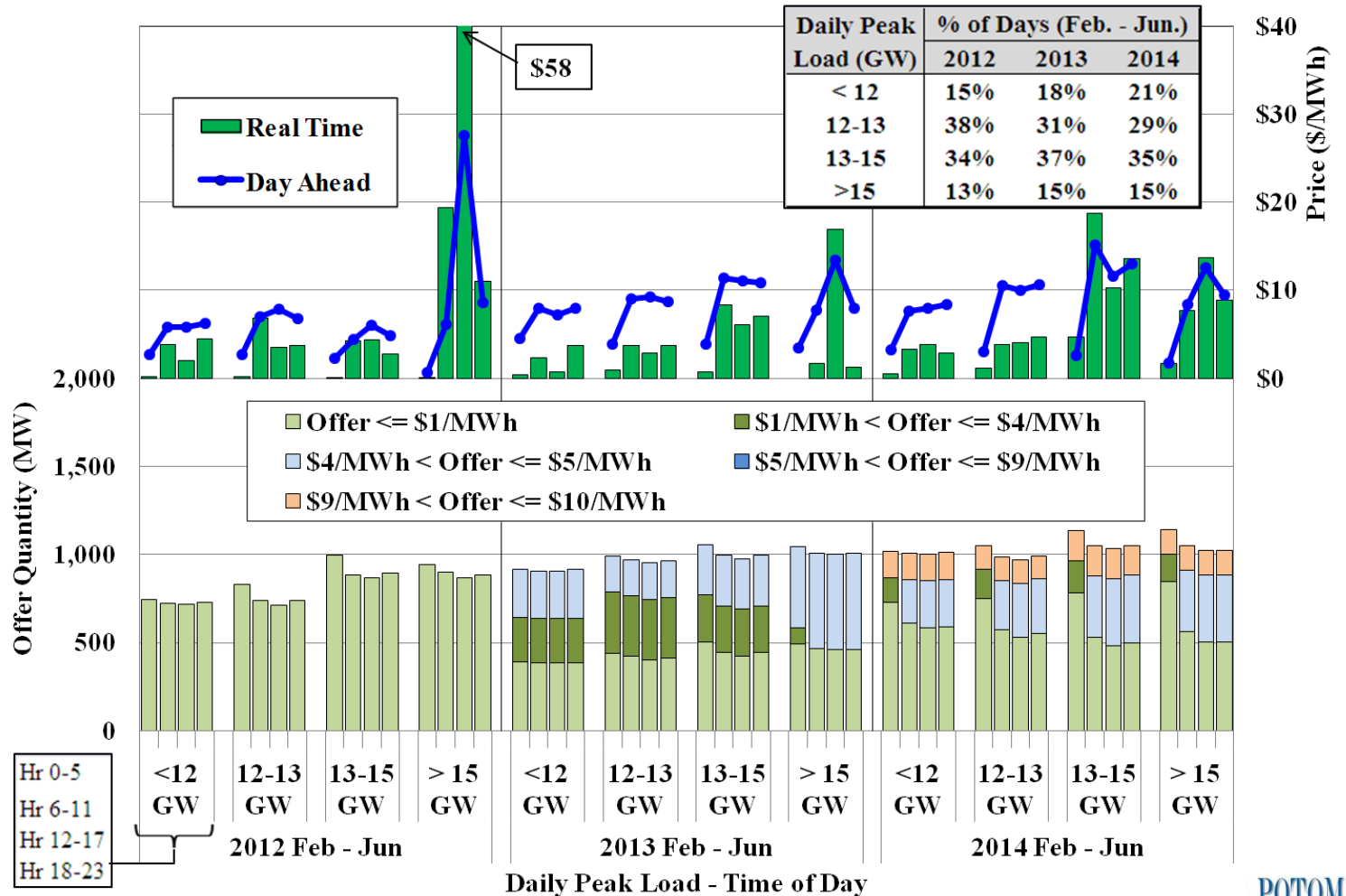
Day-Ahead Reserve Offers and Price Convergence
Eastern 10-Minute Non-Spinning Reserves

Ancillary Services Prices and Offer Patterns: Price Convergence

- In high load periods, price convergence improved, especially for Eastern 10-min Spinning Reserves.
  - ✓ Average DA prices and average RT prices became more consistent when evaluated by load level and time of day.
  - ✓ Average hourly absolute differentials between DA and RT clearing prices have fallen as a share of average DA prices.
    - For example, on afternoons when peak load > 15 GW in eastern NY, this fell from 174 and 196 percent before Phase 1 to 123 and 112 percent in Phase 2.
- In low load periods, the DAM price premiums increased.
  - ✓ DAM price premiums are expected in competitive markets with no virtual trading.
  - ✓ Low-load periods were affected by changes in offer caps (for 10-min spin) but not reference level caps (for 10-min non-spin).

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Day-Ahead Reserve Offers and Price Convergence
Offer Patterns and Recommendation

- Suppliers have adjusted their offers consistent with expectations since the mitigation rule changes were implemented.
  - ✓ Offer prices have risen at times of day with higher load levels (e.g., hours 12-17) and on days with higher load levels.
- We have not found offer patterns or other indicators that would raise market power concerns under Phases 1 or 2.
  - ✓ Supply continues to far exceed the reserve requirements, market concentration has not increased, and co-optimization of energy and reserves limits the impact of offer changes.
  - ✓ Increases in offer prices for some generators have not been correlated with portfolio size in a way that raises concerns.
  - ✓ Opportunity cost of foregone energy sales remains the largest determinant of spinning reserve schedules and clearing prices.
- We recommend that the NYISO implement the next phase of the proposed changes to the mitigation rules.

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