Hybrid GT Pricing Improvements

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DRAFT – FOR DISCUSSION PURPOSES ONLY

Agenda

- Background
- Approach to hybrid GT pricing improvements analysis
- Next steps

Background

Background

- **Market Participants requested at the March 1, 2016 MIWG meeting that the NYISO describe the planned hybrid GT pricing improvements analysis**
  - ***We are here today to discuss our approach and to request stakeholder feedback***

Background

- **The following objectives are part of the hybrid GT pricing improvements project**
  - ***Improve alignment of prices and schedules***
  - ***Ensure resources are properly incented to follow NYISO instructions to meet NYCA reliability***

2014 SOM Recommendation 10

- **Potomac recommended allowing GTs to be eligible to set price in the final pricing pass (i.e., the second ideal pass)**
  - ***In instances when GTs are not eligible to set price in the second ideal pass, due to the current logic, Potomac contends that LBMPs may not fully reflect the cost of the marginal resources scheduled to satisfy load and manage congestion***
- **Potomac also recommends amortizing GT start up costs over the initial phase of commitment and reflecting these costs within the second ideal pass**
  - ***"Otherwise, a GT that is economic in every interval of its minimum run time may not recoup its costs through LBMP revenues" – 2014 SOM, recommendation 10***

Approach to Hybrid GT Pricing Improvements Analysis

Hybrid GT Pricing Logic

- The NYISO is still considering the extent to which any modifications to the existing hybrid GT pricing logic are necessary

Analysis Approach – Modify GT Price Setting Eligibility

- Modification of GT price setting eligibility should more closely align resource schedules from the physical pass with prices from the second ideal pass
- The analysis should address the following questions
  - *When comparing the current GT price setting eligibility to an alternative market design construct:*
    - How often are LBMPs below energy offers for committed GTs?
    - How often are resource schedules from the physical pass inconsistent with schedules from the second ideal pass?

Analysis Approach – Modify GT Price Setting Eligibility

- **Calculate estimated outcomes from alternative market design constructs**
  - ***Select representative days where energy offers for scheduled GTs are above the resulting real-time LBMPs***
  - ***Rerun the market software for real-time intervals at issue, varying the applicable hybrid GT pricing logic***

Analysis Approach – Modify GT Price Setting Eligibility

- Compare prices and schedules from production with prices and schedules from the rerun scenarios

Reflecting Committed GT Start-Up Costs in Pricing

- **Resource start-up costs are currently considered by the unit commitment process in SCUC and RTC**
  - ***Additionally, start-up costs are divided by UOL and added to the GT's energy offer as part of the offline GT pricing logic in RTD***

Reflecting Committed GT Start-Up Costs in Pricing

- **Expanding the inclusion of GT start-up costs in pricing outcomes is still under consideration by the NYISO**
  - ***To the extent it is determined that further assessment of including committed GT start-up cost in LBMPs is warranted, the NYISO would identify a feasible methodology to analyze the potential impacts***

Next Steps

Next Steps

- **March MIWG**
  - *Discuss the NYISO's approach to the analysis*
- **April MIWG**
  - *Present analysis*
  - *Discuss potential improvements*
- **May MIWG**
  - *Discuss proposal*
  - *Review draft tariff language*
- **June BIC/ MC**
  - *Vote on proposal/ tariff language*

Appendix: Current Hybrid GT Pricing Logic

Hybrid GT Pricing Logic

- **Block-loaded GTs (UOL = Min Gen) can displace lower cost dispatchable units**
  - ***The hybrid GT pricing logic determines whether block-loaded GTs should be qualified to set price in real-time***

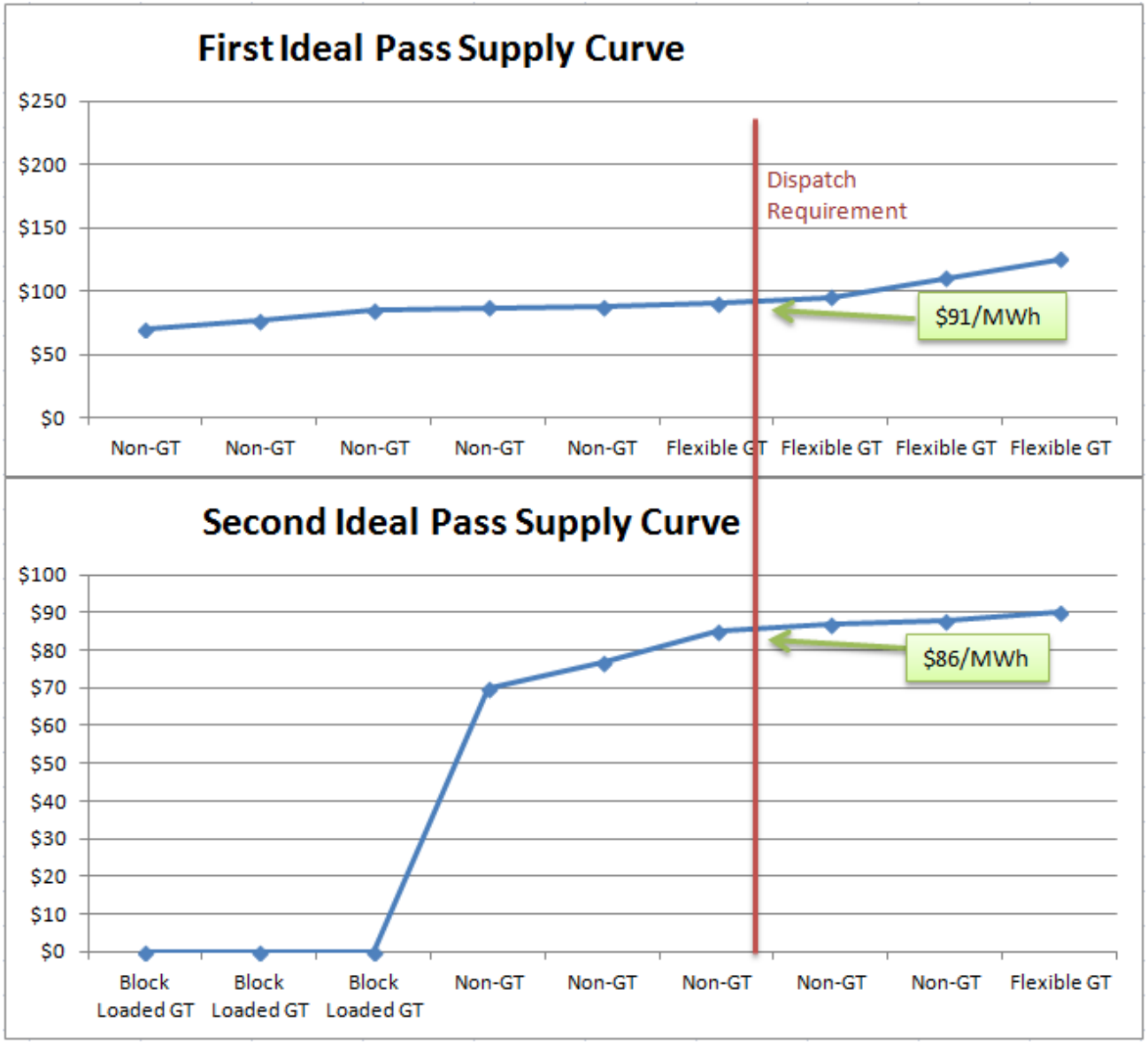
Hybrid GT Pricing Logic

- Three dispatches are part of RTD
  - *Physical dispatch*
    - Provides resource base points for each product
  - *First ideal pass*
    - Determines whether each GT is modeled as dispatchable or block-loaded in the second (final) ideal pass
  - *Second (final) ideal pass*
    - Determines prices for each product

Hybrid GT Pricing Logic

- **Within the first ideal pass, all GTs are modeled as dispatchable between zero and UOL**
  - ***For GTs within their minimum run time:***
    - **If the GT is economic (scheduled at greater than 0) in this pass, then it is included as dispatchable between zero and UOL in the second ideal pass**
    - **If the GT is not economic in the first ideal pass, it is included as block-loaded at the bottom of the bid stack in the second ideal pass**
  - ***For GTs outside of their minimum run time:***
    - **Always included as dispatchable between zero and UOL in the second ideal pass**
- **Schedules from the first ideal pass and the second ideal pass are not sent to resources**
  - ***These dispatch passes are only for pricing purposes***

Hybrid GT Pricing Logic - Price Impacts



First Ideal Pass

- Non-GTs are always treated flexibly (e.g. Steam Generator)
- GTs that are online are always treated as fully flexible from 0MW to UOL in the first ideal pass

Second Ideal Pass

- Block-loaded GTs are treated as fixed at UOL and therefore have no incremental cost; these are GTs that were dispatched to zero in the first ideal pass
- These block-loaded GTs shift the supply curve in the second ideal pass which may result in a different price being calculated between the first ideal and second ideal passes

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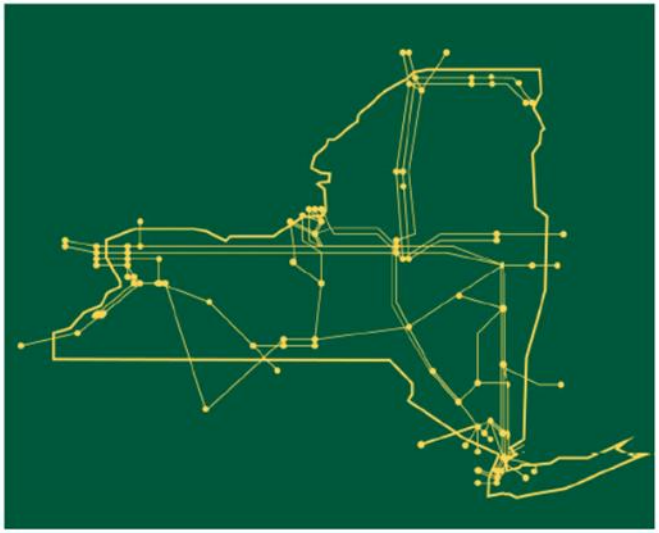

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