



Summary of Proposals for the Comprehensive Mitigation Filing

Presented to:

Business Issues Committee

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Purposes and Objectives

- The comprehensive filing will include the changes to the current mitigation structure needed to implement a comprehensive mitigation plan in compliance with FERC's November 27th orders.
- Changes are proposed to:
 - Address market power concerns in New York City;
 - Improve the operation of the automated mitigation procedure (AMP) in the day-ahead market;
 - Establish thresholds for screening non-price bid parameters;
 - Clarify reference price development for units that seldom run in-merit, and for new generators;
- The filing will describe an internally consistent mitigation structure for the long-term, as well as the short-term changes to be made prior to summer 2002.
- The filing will reflect coordination with other Northeast ISOs.

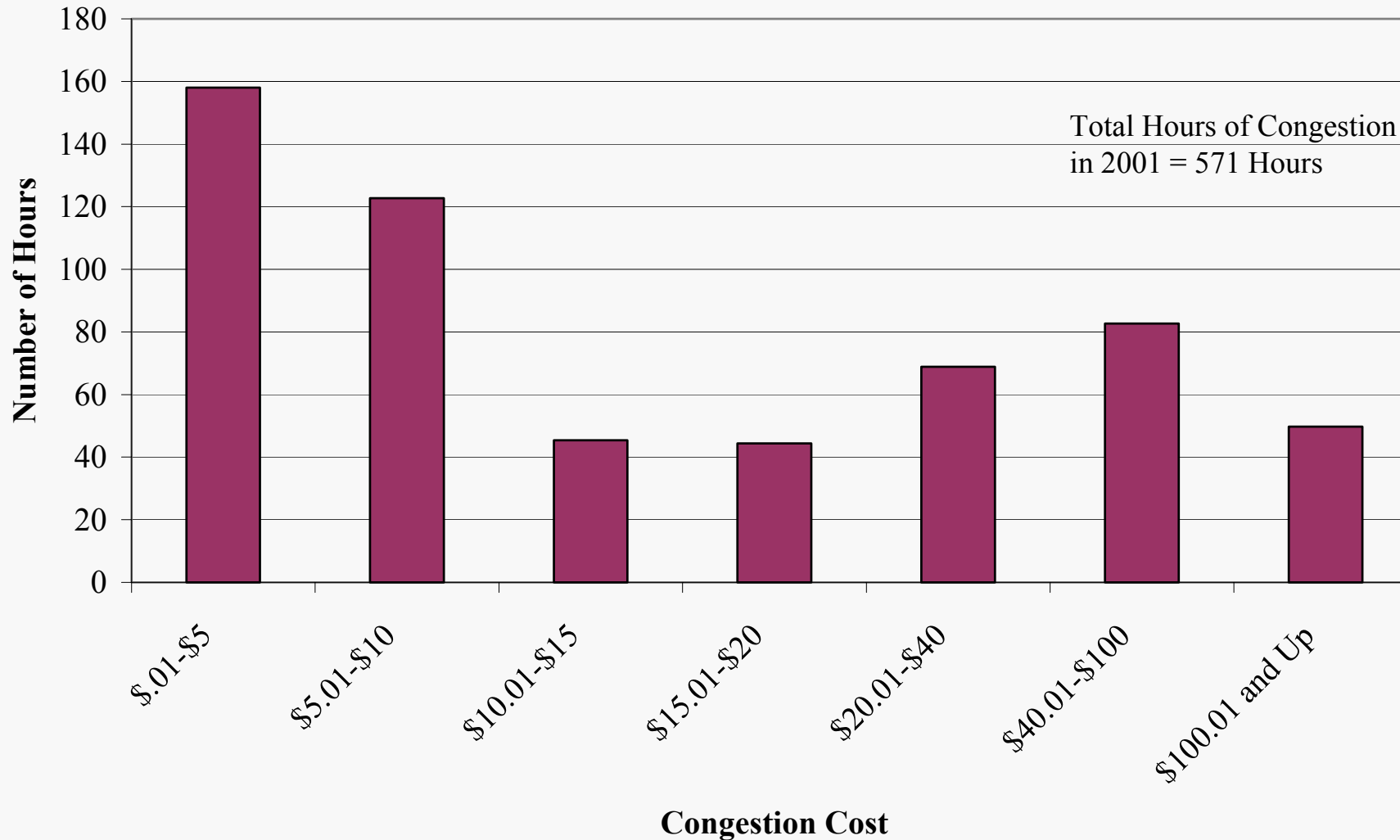


New York City Mitigation: Real Time

- The ISO will soon be modeling the 138 KV interface within NYC as well as 7 other sub-load pockets on the 138 KV system in real time (SCD).
- Once completed, these modeling changes will allow prices within the load pockets to reflect the constraint and reduce the need for out-of-merit dispatch.
- These constraints raise potential market power issues:
 - ➔ When the load pocket constraints are not binding, suppliers in the load pockets face competition from supply in other areas.
 - ➔ When the constraints are binding, units within the load pockets frequently must run to resolve the constraint.
 - ➔ Concentration of generation ownership within the pockets is generally high.
 - ➔ Suppliers within the pockets may be able to increase the frequency of the load pocket congestion by withholding supply.
- The following charts show the frequency with which the constraints in NYC and the load pockets have been binding.



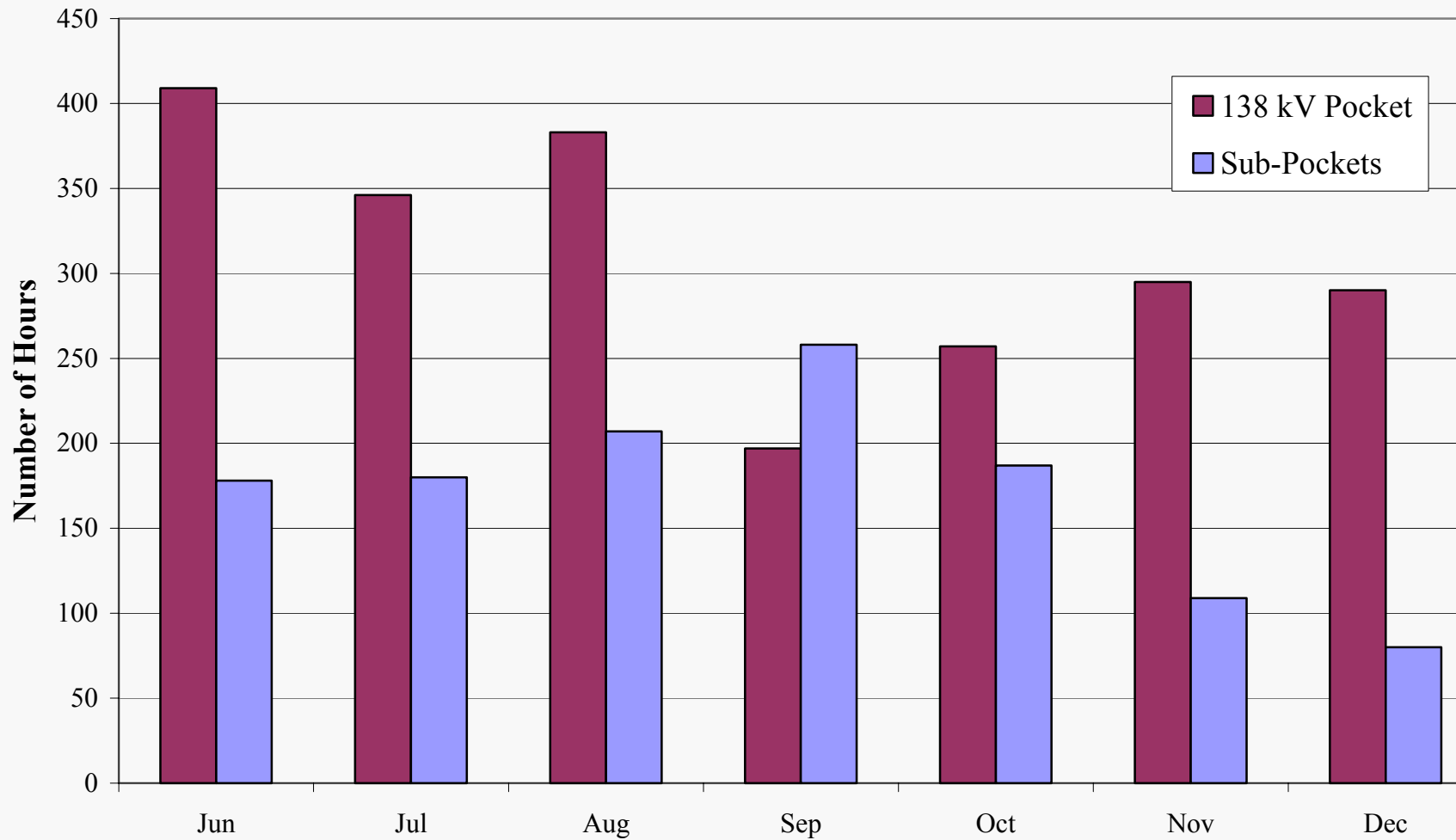
Cost of Congestion Measured by Shadow Price January to December 2001



The shadow price represents the economic value of the constraint



Frequency of Out-Of-Merit Calls in NYC Load Pockets June to December 2001





New York City Mitigation: Real Time

- The real-time mitigation proposal for NYC is consistent with the conduct-impact structure of the general mitigation measures.
- The primary difference between the NYC mitigation and the general mitigation is the use of lower thresholds for evaluating conduct and impact – i.e., load pocket thresholds (“LPT”).
- The proposed structure would be applied when constraints are binding – the general mitigation measures would apply to generation within NYC when constraints are not binding.

Conduct test

- Bids of units within the load pocket are compared to reference levels. (same reference prices used for general mitigation).
- Bids exceeding the reference levels by more than the applicable LPT fail the conduct test.

New York City Mitigation: Real Time

Impact Test

- The ideal impact test involves two passes of the dispatch model (with and without mitigation). Since this isn't possible within SCD, the following proxy is proposed:
- Resources exceeding the conduct test would be mitigated if:
 - They are scheduled in the prior SCD interval (They have increased the price of the marginal resource).
 - They are not scheduled, but their reference levels are below the marginal resource by more than the LPT (They have withheld an economic resource and caused a more expensive resource to set prices).

Duration

- Mitigation will continue at least for the balance of the hour.

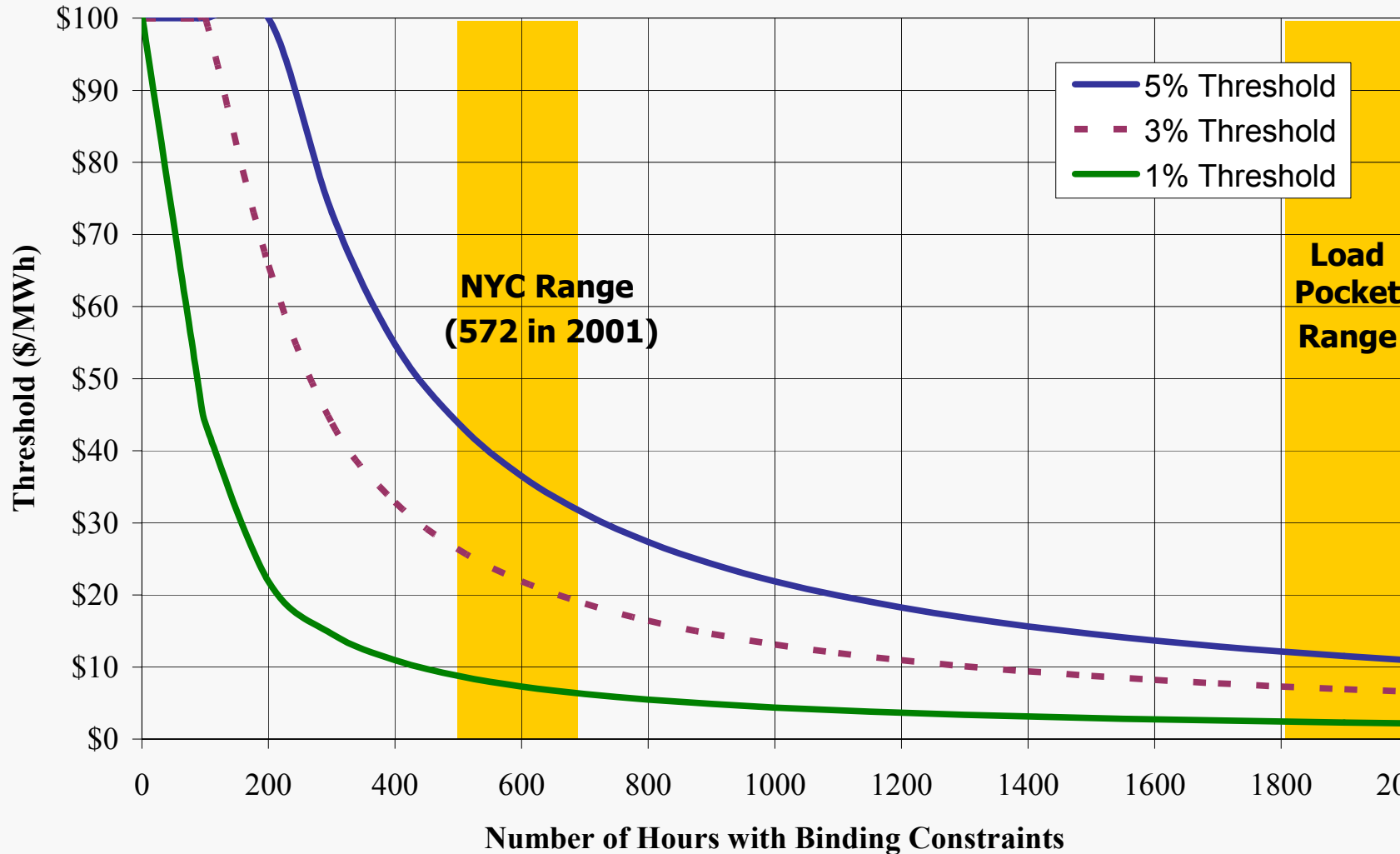


New York City Mitigation: Real Time

- The real-time mitigation proposal for NYC is consistent with the conduct-impact structure of the general mitigation measures – applied when constraints are binding.
- However, the locational market power associated with the transmission constraints in the city justify load-pocket thresholds (LPT) that decline as the frequency of the constraints increases.
 - ➔ The declining LPT addresses potential for sustained exercises of “low-level” market power by raising prices by the threshold amount.
 - ➔ The frequency of congestion would be measured by the number of hours of congestion over a rolling 12 month period.
 - ➔ LPT would naturally change with changes in congestion due to new generation or transmission.
- The LPT would be adjusted for changes in fuel prices. The LPT function is shown on the following chart.

In-City Conduct and Impact Thresholds

Alternative Scenarios



The threshold function is defined by the following:

$$\frac{\text{Threshold} * \text{Constrained Hours}}{8760 \text{ Hours} * \text{Average Price}} = \text{Max \% Value of Threshold} \quad \text{OR} \quad \text{Threshold} = \frac{\text{Max \%} * \text{Avg. Price} * 8760}{\text{Constrained Hours}}$$

New York City Mitigation: Day-Ahead

- The real-time mitigation proposal will be applied to the day-ahead in the longer run (post-summer), with the additional feature that:
 - ➔ The AMP software will conduct an actual impact test, rather than using the proxies proposed for the real-time.
- In the short-run, analysis of the current ConEd In-City mitigation measures support the following changes:
 - ➔ Use of the NYISO reference prices;
 - ➔ Shift in the threshold to 7.5% to account for the fact that losses are included in the price ratio;



New York City Mitigation: Day-Ahead

- The analysis of price differences (using final prices) in 2000 and 2001 between Indian Point 2 and Ravenswood 3 revealed:
 - ➔ In 7% to 12% of the hours when the price difference was greater than 5%, the difference would have been less than 5% if difference in losses were removed;
 - Increasing threshold to 7.5% would have virtually eliminated these cases.
 - ➔ The difference in losses generally ranged from 0 to 3%, averaging 1.6%.
 - ➔ Given the average price and losses, the current 5% threshold would cause mitigation to trigger when congestion equals \$1.50 while the 7.5% threshold would raise this trigger to \$2.50.
 - \$2.50 is a level proposed by the PSC to eliminate noise in this type of congestion measure.
- Only 3 days showed price differences greater than 5% in the off-peak night hours without any other hours exceeding 5%.



Automated Mitigation Procedure: Day-Ahead

- The AMP remains simply an automated process for implementing mitigation – does not limit or expand NYISO’s mitigation authority.
- The mitigation filing will describe all proposed changes to the AMP that are proposed in the short-run and longer-run:
 - ➔ 50 MW portfolio exclusion – with provision to remove or eliminate exclusion if impact is evident;
 - ➔ Additional SCUC pass to limit mitigation to those hours and zones demonstrating adequate impact;
 - ➔ Inclusion of start-up and minimum generation bids with min-gen exemption for late-day starts;
 - ➔ More detailed representation of reference prices within the MIS system.
- The NYISO and stakeholders are currently finalizing the priorities for these revisions and other projects for implementation in Summer 2002.



Other Modifications to Mitigation Plan

Reference Prices

- Formula to be used as starting point for negotiated reference price:
heat rate * fuel costs + emissions level * allowance price + var O&M
 - ➔ Formula based on information in the Reference Price cost spreadsheet.
 - ➔ Starting Point may be adjusted to reflect other marginal costs.
- Accepted bids during congested hours not included in reference prices for in-city units.

Bid Parameters

- Establish independent thresholds for non-price bid parameters
- Hour-based threshold for time-based bid parameters (e.g., min run time, min down time, start time, etc.)
- Percent thresholds for other bid parameters.



Other Modifications to Mitigation Plan

Other Threshold Changes

- Exclude bids below \$25 for energy and \$5 for reserves from screening.
- Reduce the quantity thresholds to zero for physical withholding in-City (impact test still applies).

Application of Mitigation to New Generation (including net new capacity by existing owners)

- Proposal is designed to account for the competitive benefits provided by new generation in the short-run and minimize potential disincentive to enter.
- Set Reference Level Floor for a period of 3 years equal to the average of the peak LBMPs at its location for the twelve months preceding its entry.

Data Requirements

- Modify the Addendum to the MMP specifying the data the NYISO is entitled to receive upon request to include any contract or agreement conferring a right to specify bids or otherwise control the output of a unit owned by another entity.



Regional Consistency on Mitigation

- Both PJM and New England employ a unit-specific bid cap as a primary mitigation tool, although the triggers are different:
 - ➔ PJM employs its bid cap at variable cost + 10% when transmission constraints are binding (other than the major interfaces) – no conduct or impact tests.
 - ➔ New England’s mitigation measure for non-congested areas is very similar to New York’s structure – conduct and impact thresholds match New York’s.
 - ➔ New England’s mitigation measure for congested areas will be revised to coincide with the implementation of the Standard Market Design (“SMD”).
 - ➔ New England is considering New York’s proposed structure for mitigation in constrained areas.
 - ➔ Some of the proposed changes for NY are intended to implement elements of the New England measures (e.g., \$25 exclusion, bid characteristic thresholds)
- Although different triggers are used, the similarity in the underlying measures should eliminate any barriers (software or otherwise) to standardizing later.
- Prospective mitigation by means of a unit-specific bid cap should not be a barrier to efficient trading throughout the Northeast market.