

Competitiveness in the DAM: Market Monitoring Considerations

***Prepared by the
Market Monitoring and Performance Department***

November 2005

Draft - For Discussion Only

Analysis of the NYISO's DAM

- **State of the Market**
 - a) **Demand Side Analysis**
 - Price Cap Load
 - **Virtual Transactions Bidding**
 - **Physical Price Cap Load**
 - Day-Ahead Demand Response
 - b) **Supply Side Analysis**
 - Residual Supply and Pivotal Supplier

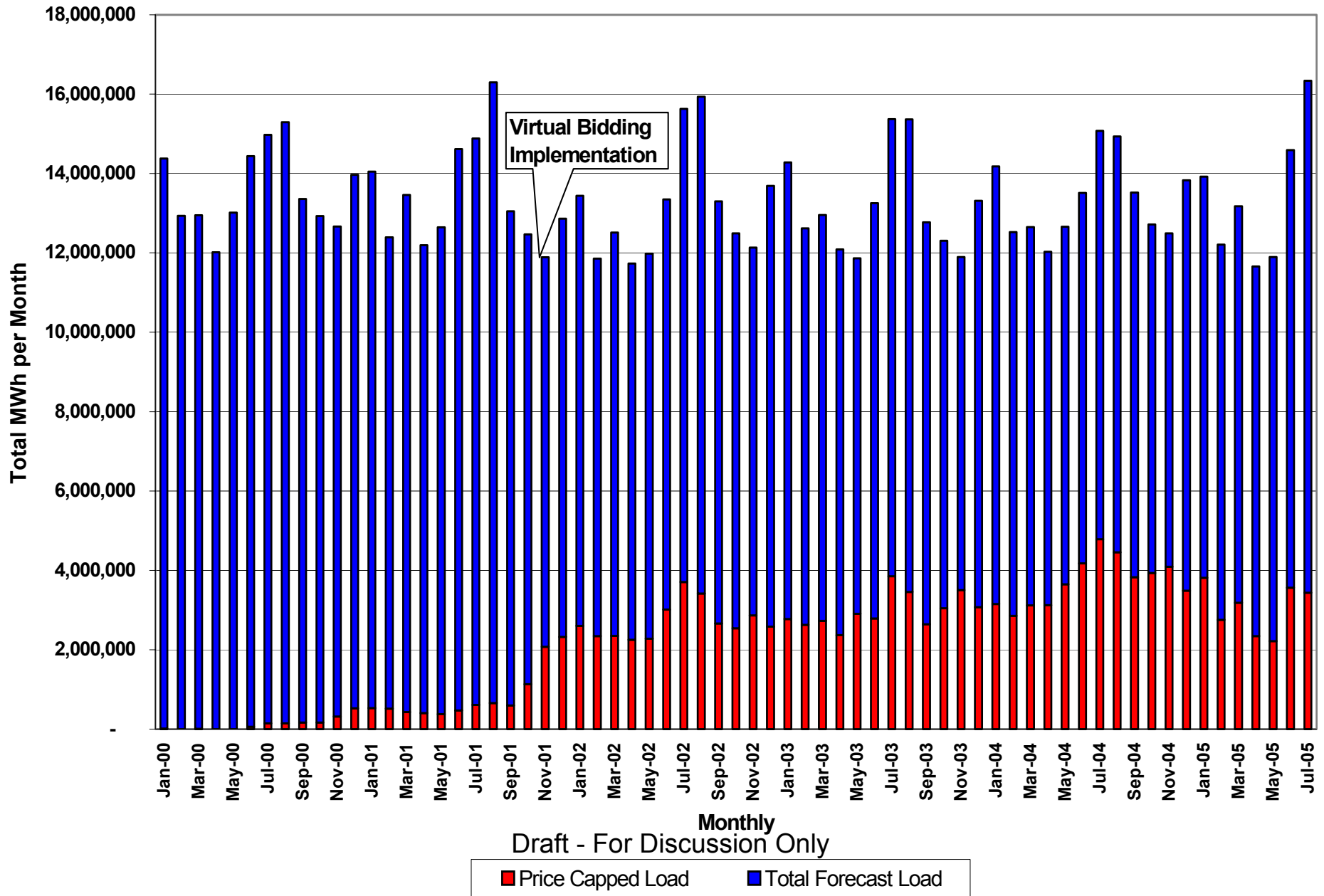
Market Monitoring Considerations

- **Monitoring for instances where ROS DAM AMP would have been activated since it was turned off.**
- **A proposed alternative to ROS DAM AMP.**

Demand Side Analysis

- **Price Cap Load (PCL)**
 - Virtual Transactions Bidding
 - **Purely financial; not physical load or supply**
 - **If the LBMP is above (below) the bid price cap, the load (supply) will not be scheduled**
 - **If Load (supply) scheduled in the Day-Ahead Market, it will sell (buy) in real time and settle at Real-Time Market prices**
 - Physical Price Cap Load
 - **If the zonal LBMP is above the bid price cap, the load will not be scheduled**
 - **If the load is not scheduled in the Day-Ahead Market, it will be served in real time and settled at Real-Time Market prices**
- **Day-Ahead Demand Response Programs**

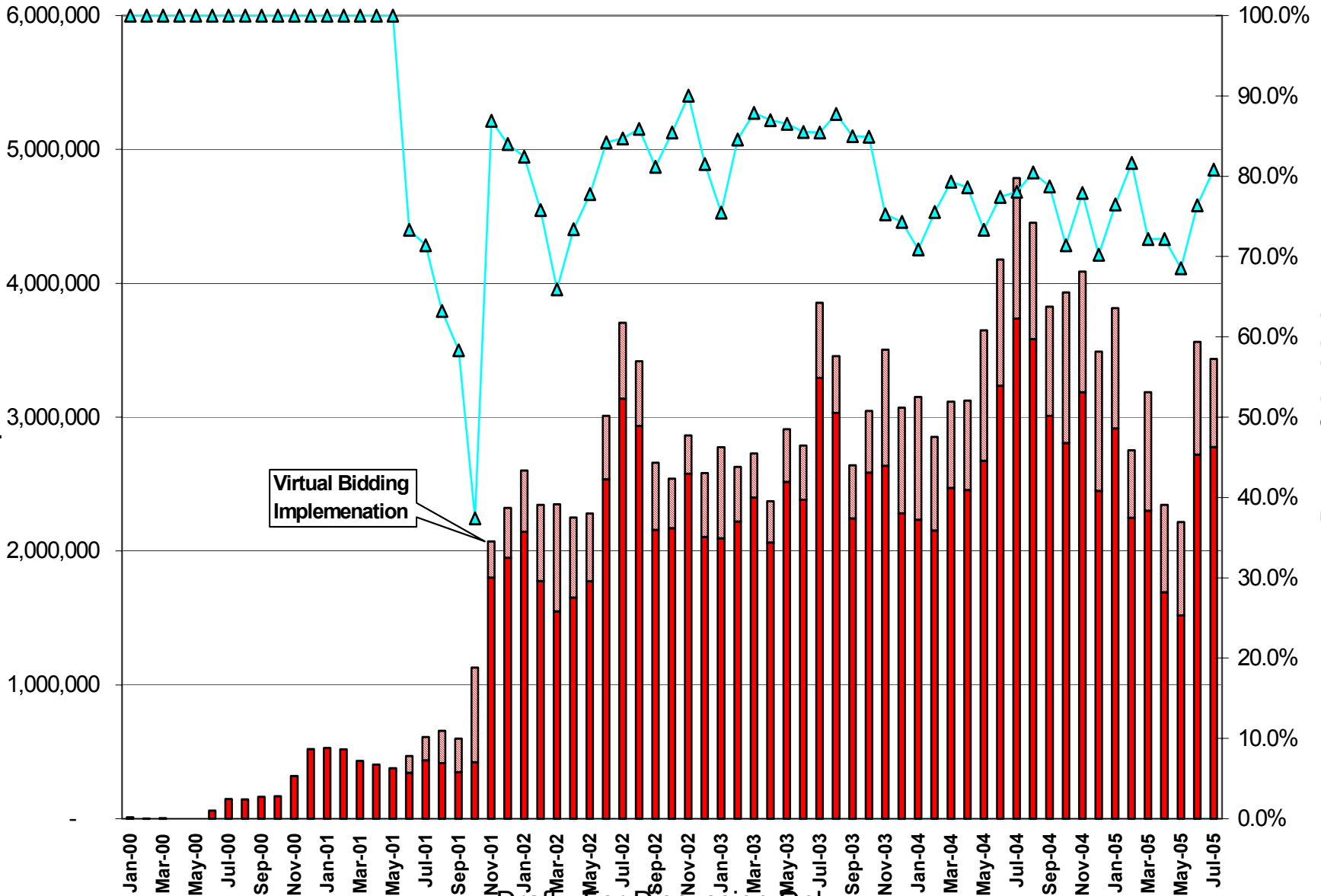
Price Capped Load (Physical and Virtual) and Total Forecast Load



■ Price Capped Load ■ Total Forecast Load

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Price Capped Load (Physical and Virtual) Offered and Scheduled

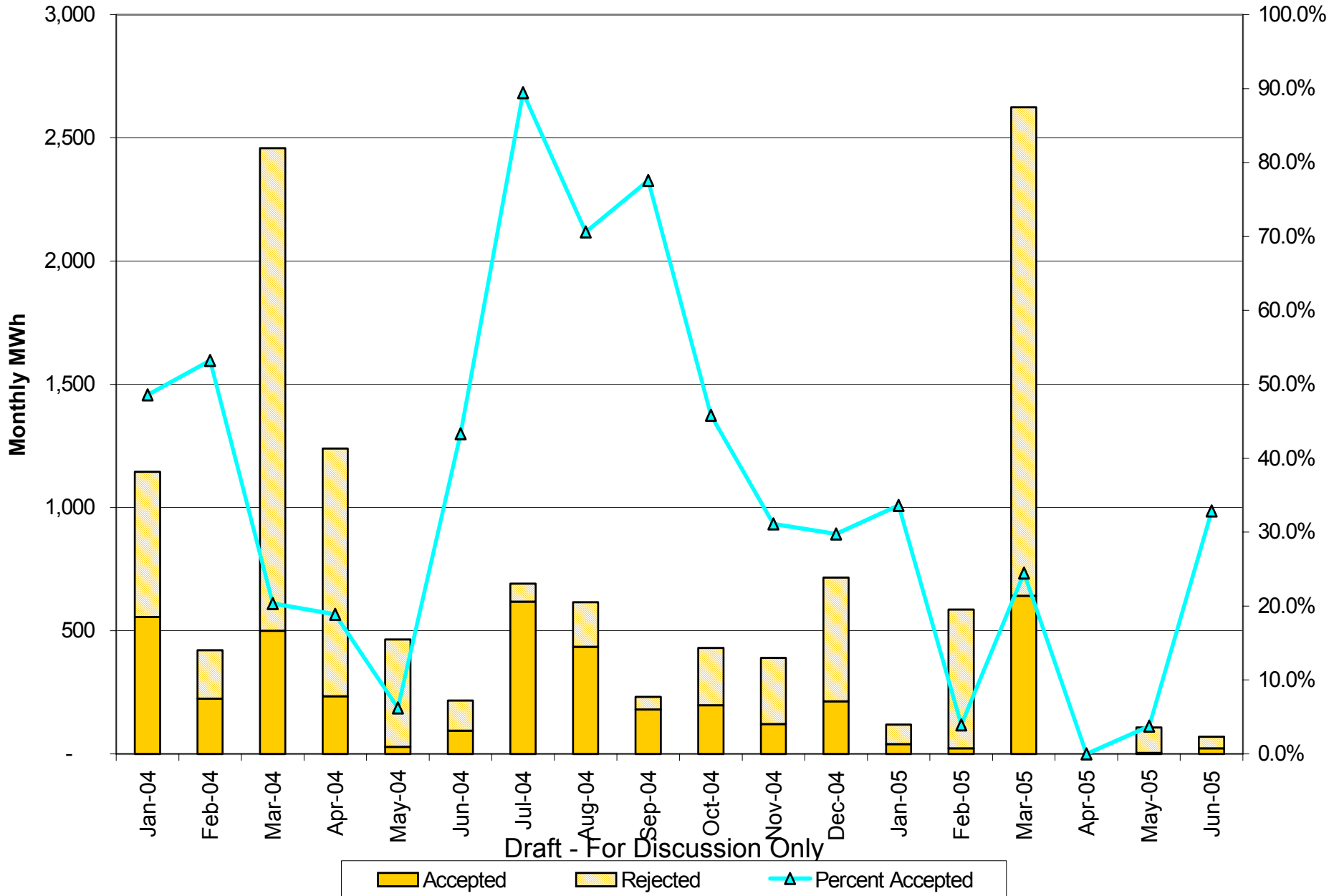


Virtual Bidding
Implementation

Scheduled Rejected Percent Scheduled

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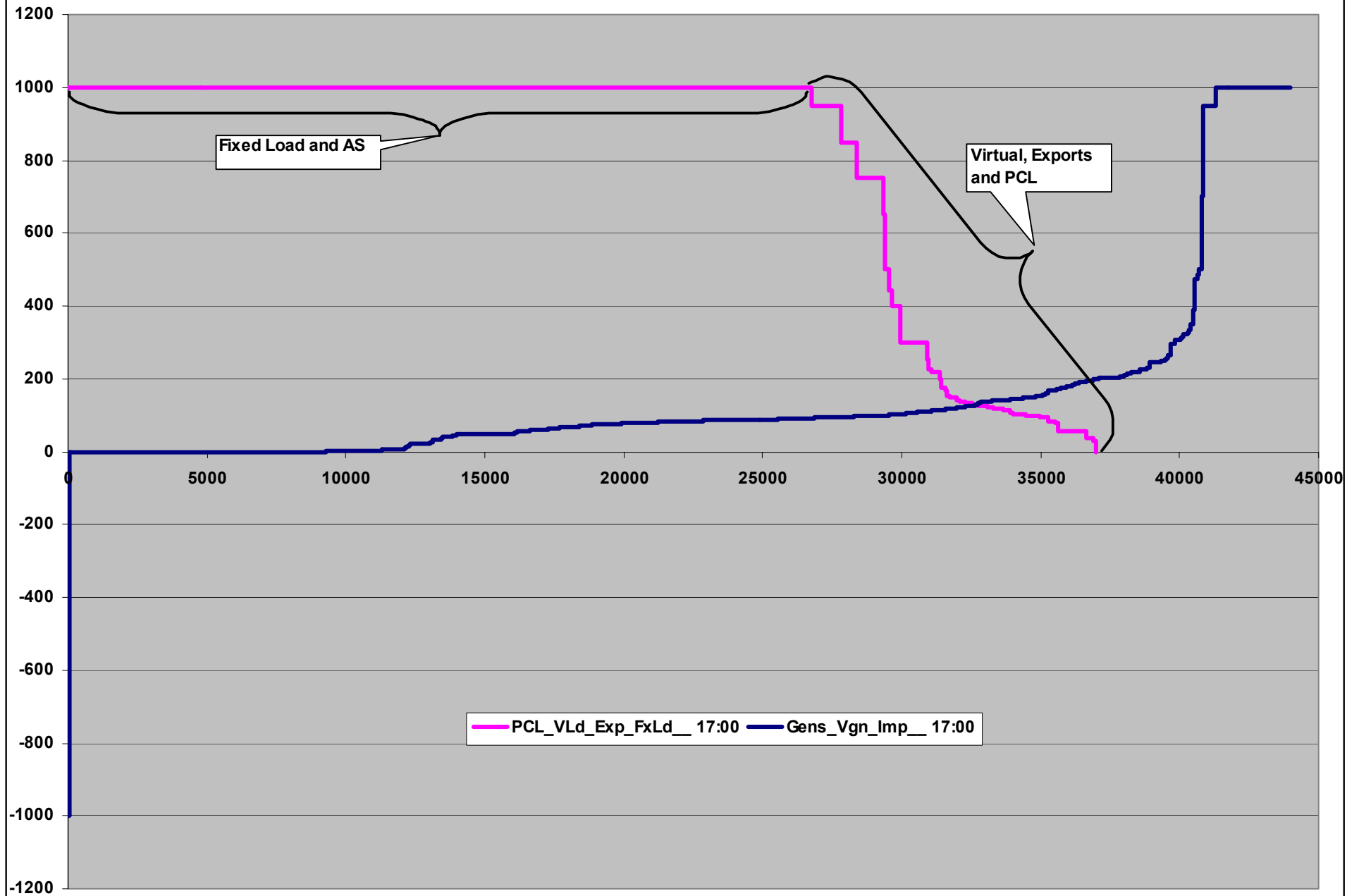
Day Ahead Demand Response Program Monthly MWh Accepted and Rejected



Price Elasticity of Demand in DAM has Increased

- **Significant increase in the physical price cap load bids**
- **Significant increase in the virtual trading bids**
- **Day-Ahead Demand Response Programs**

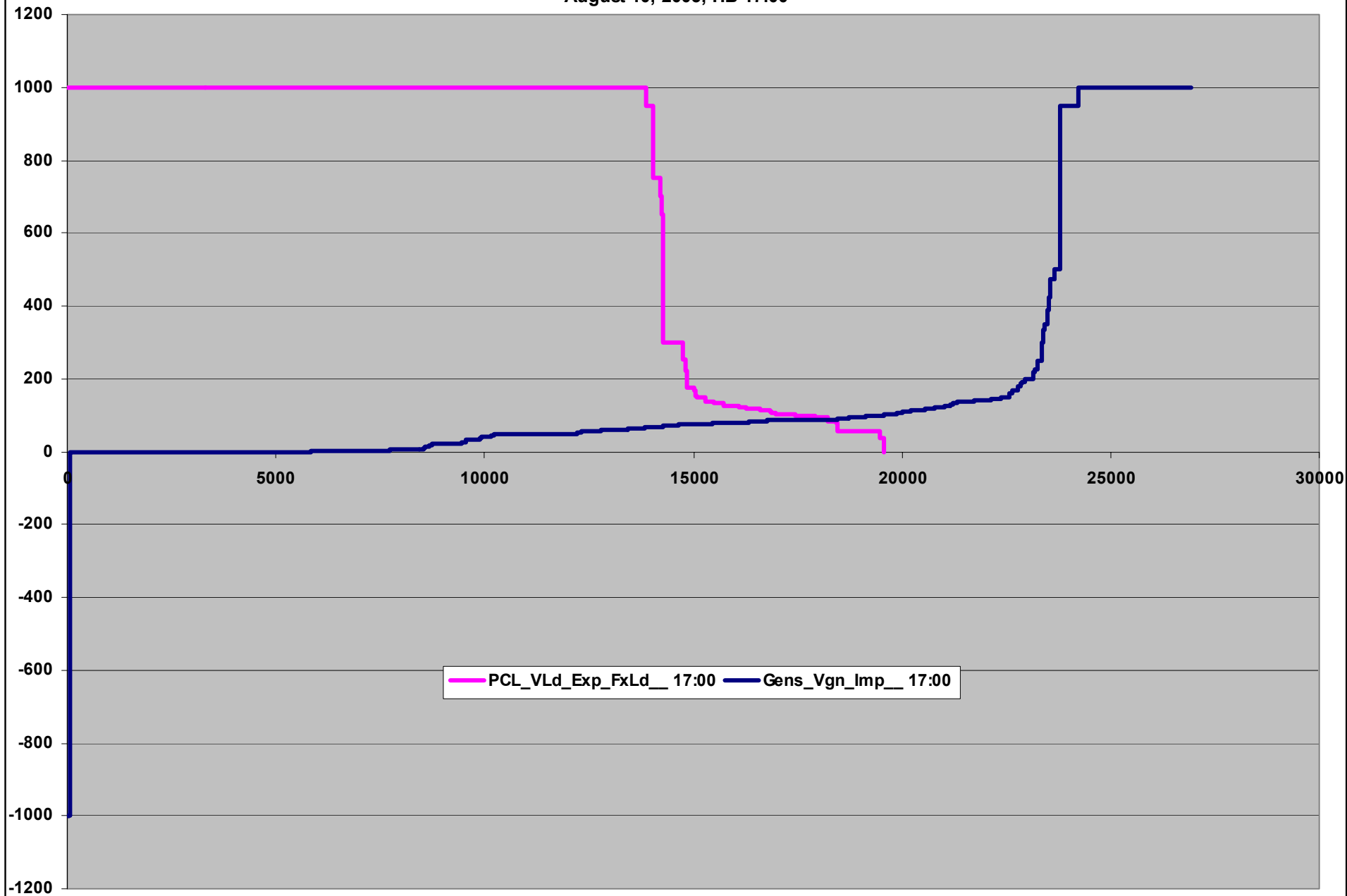
NYISO's Demand and Supply
August 10, 2005; HB 17:00



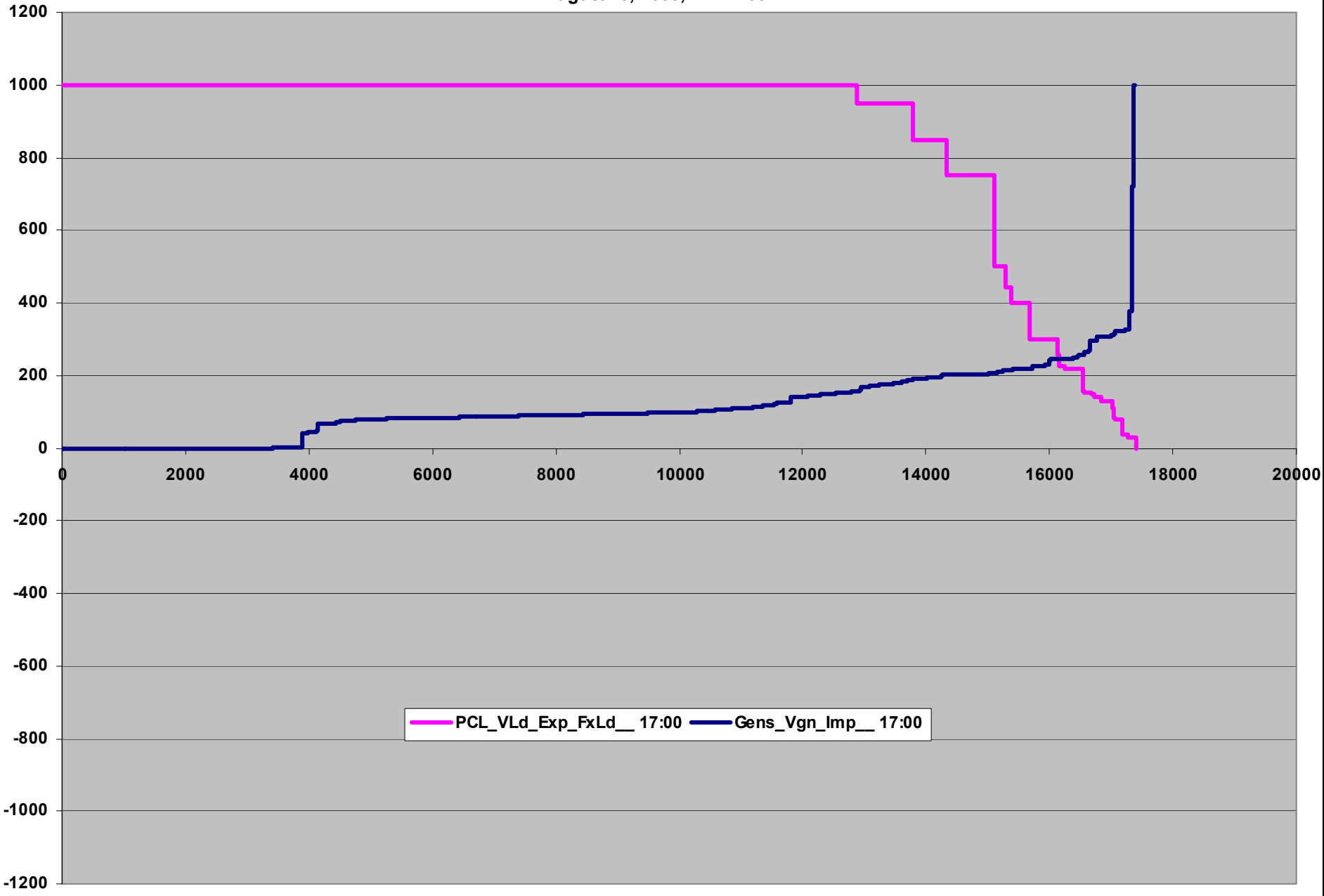
The DAM Market Demand and Supply Analysis

Constrained vs Unconstrained Conditions.

Pleasant Valley-Leeds Uncongested Side
Demand and Supply
August 10, 2005; HB 17:00

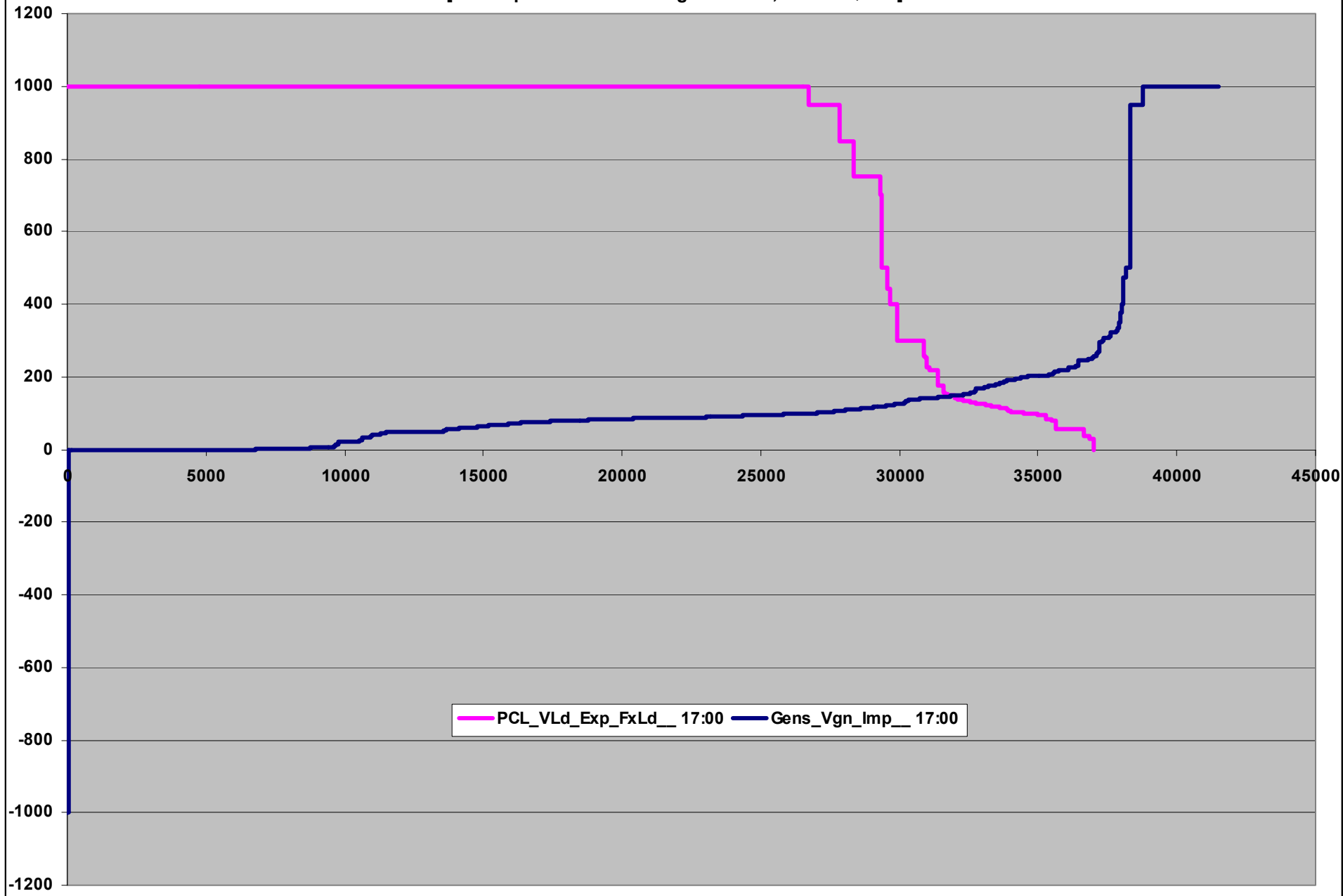


Pleasant Valley-Leeds Congested Side
Demand and Supply
August 10, 2005; HB 17:00

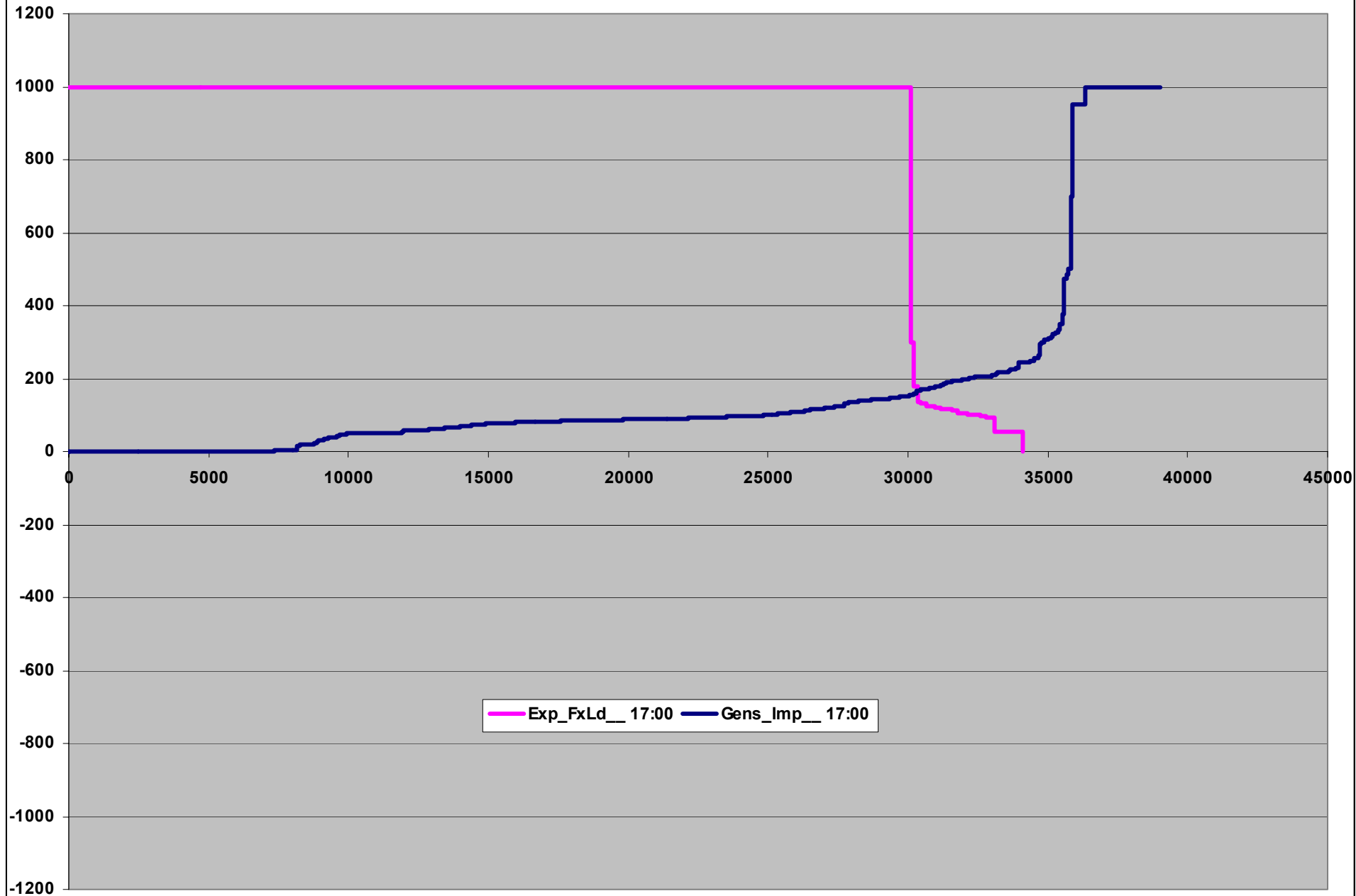


The Impact of PCL on the DAM LBMP

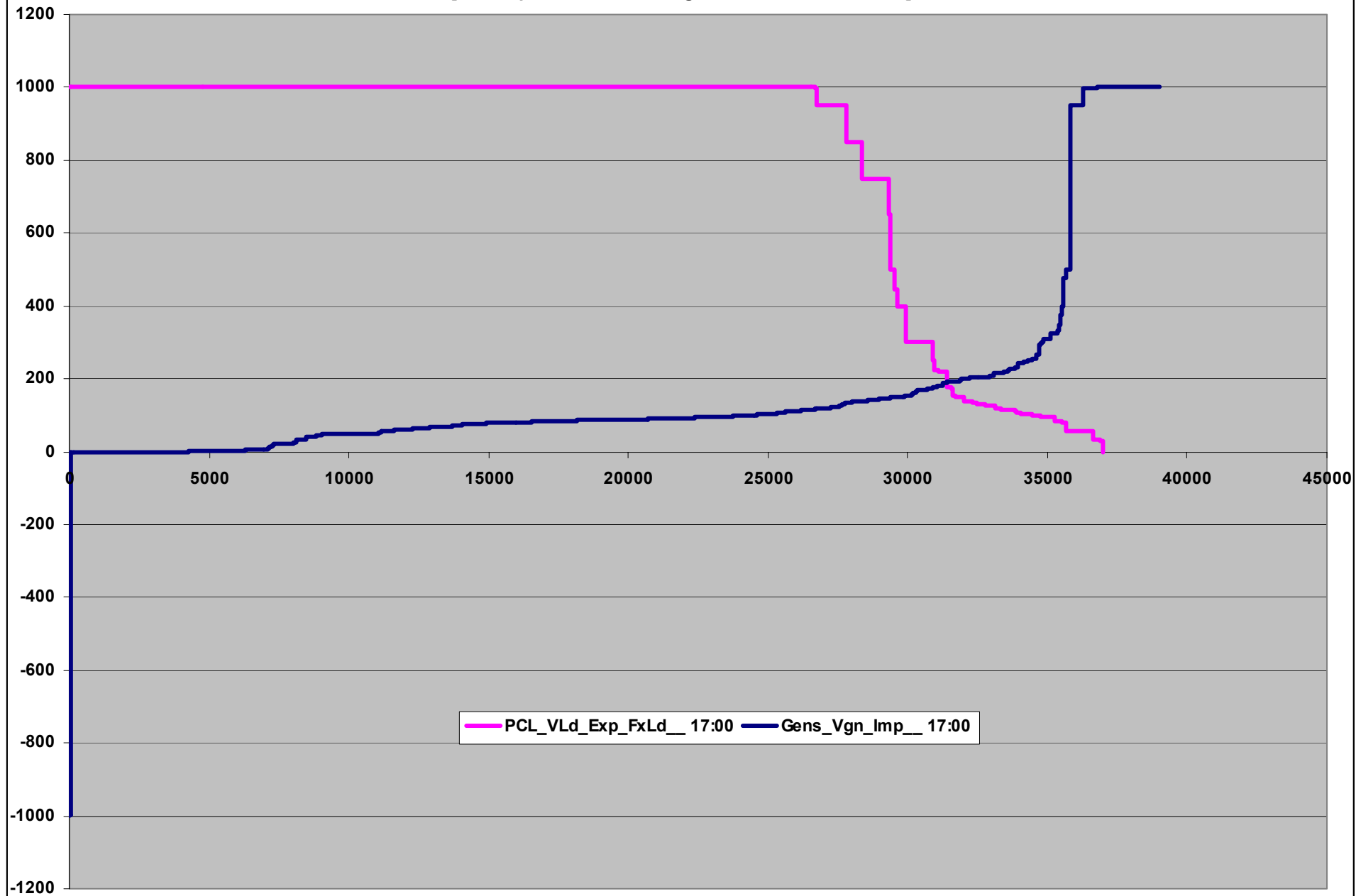
NYISO's Demand and Supply
August 10, 2005; HB 17:00
[The Impact of Withholding 2500 MW; LBMP= \$ 149]



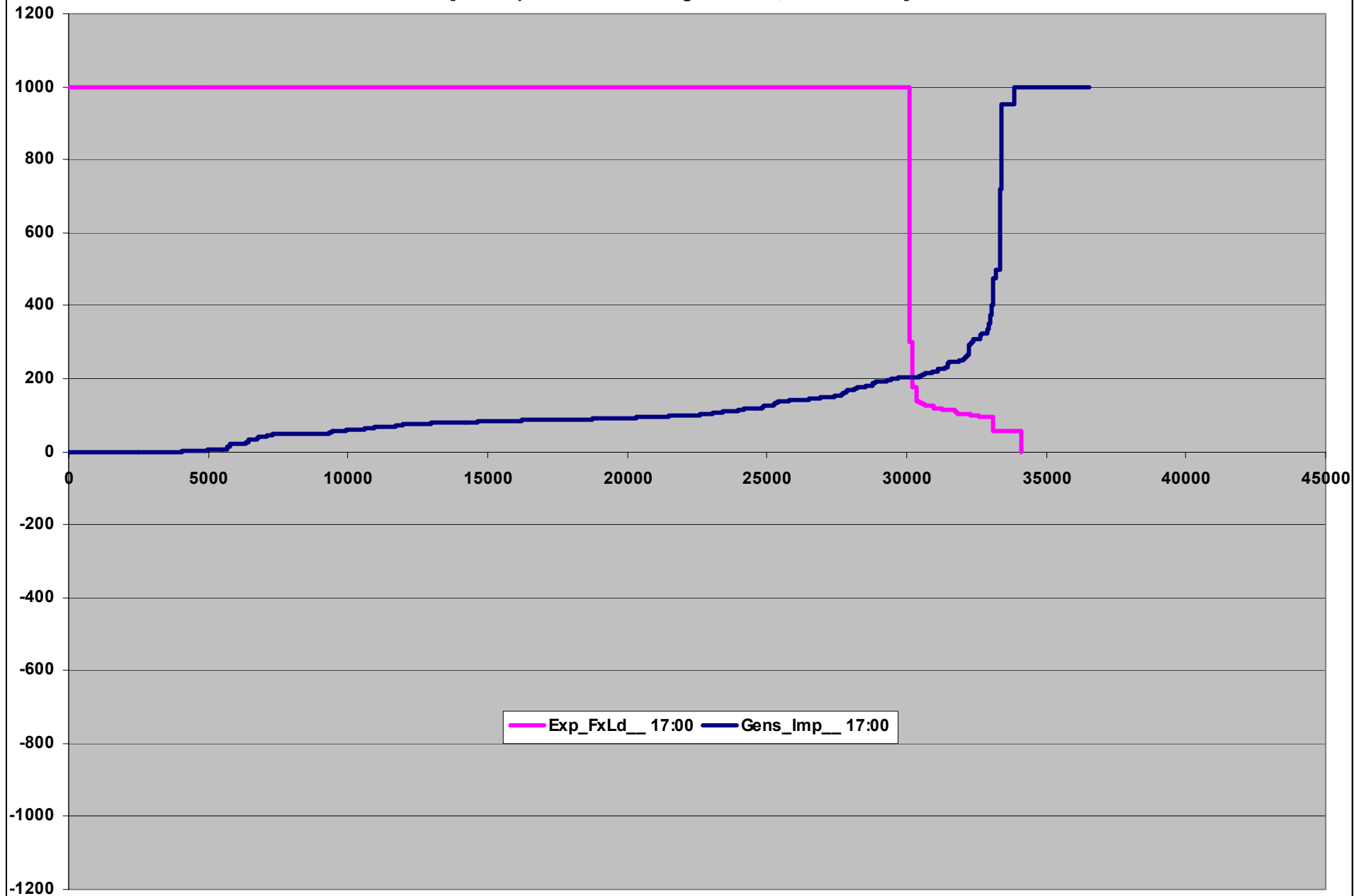
NYISO's Demand and Supply (No PCL)
August 10, 2005; HB 17:00
[The Impact of Withholding 2500 MW; LBMP= \$ 167]



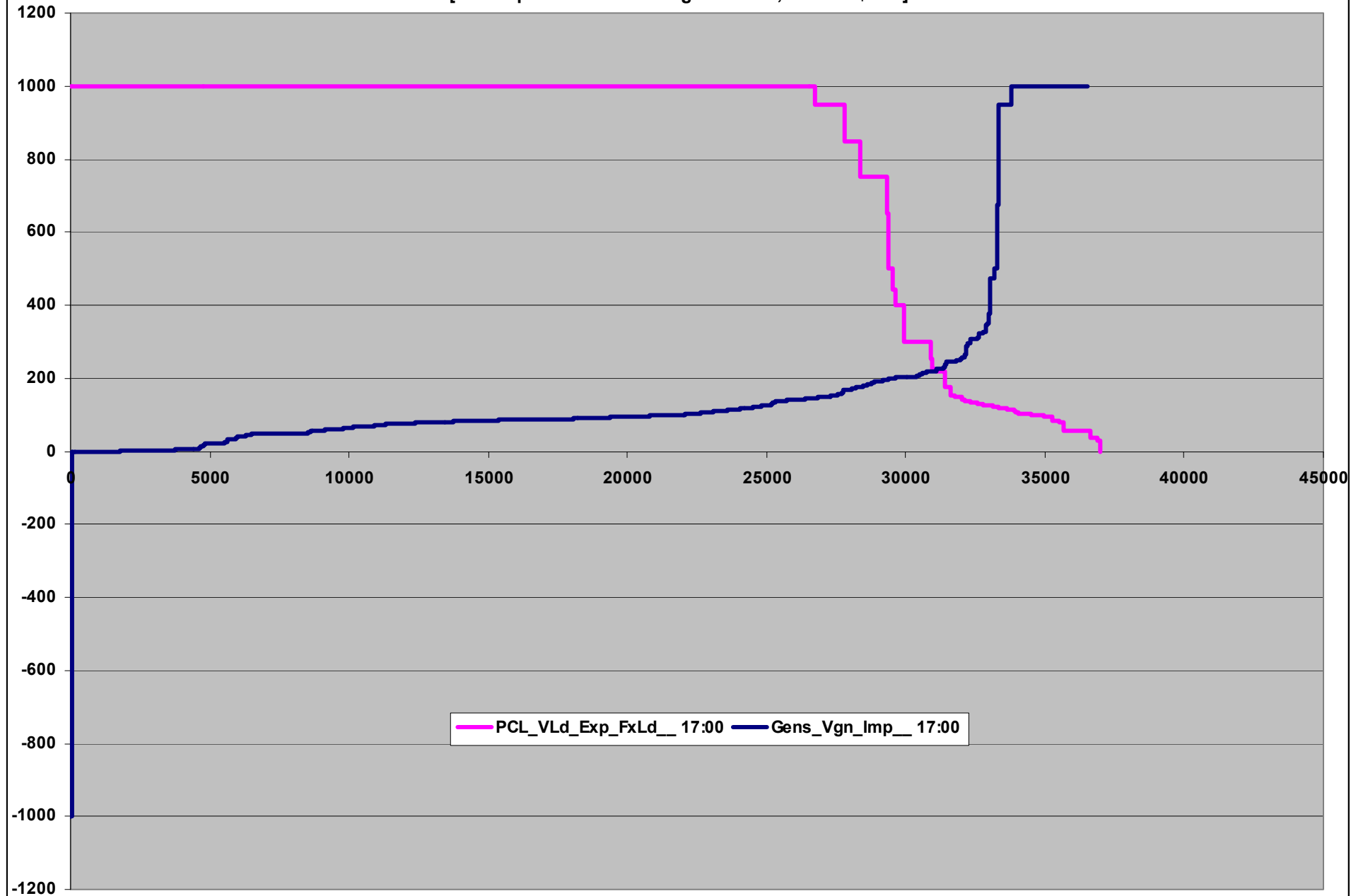
NYISO's Demand and Supply
August 10, 2005; HB 17:00
[The Impact of Withholding 5000 MW; LBMP= \$ 190]



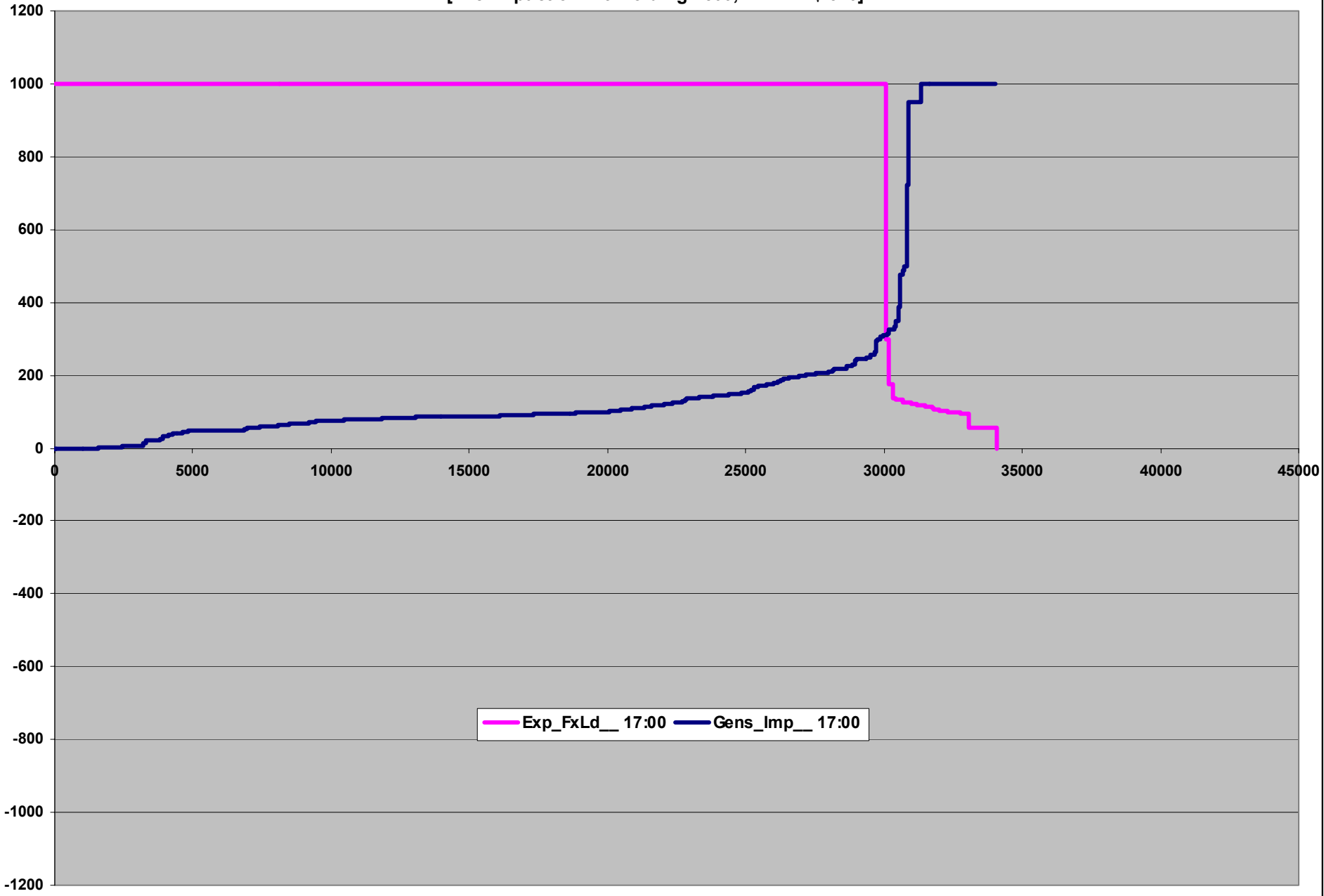
NYISO's Demand and Supply (No PCL)
August 10, 2005; HB 17:00
[The Impact of Withholding 5000 MW; LBMP= \$ 205]



NYISO's Demand and Supply
August 10, 2005; HB 17:00
[The Impact of Withholding 7500 MW; LBMP= \$ 220]



NYISO's Demand and Supply (No PCL)
August 10, 2005; HB 17:00
[The Impact of Withholding 7500; LBMP= \$ 310]



Supply Side Analysis

Residual Supply and the Pivotal Supplier

Residual Supply

- The residual supplier index shows how concentrated supply is in each hour.
- The index provides a picture of how big a factor the largest supplier is in meeting demand.

RSI = (Available MW – Largest supplier's MW) / load.

RSI < 1 indicates that the NYISO can't meet load without the largest supplier.

Residual Supply

MMP examined the RSI value for July 19, 2005 and found the values as follows:

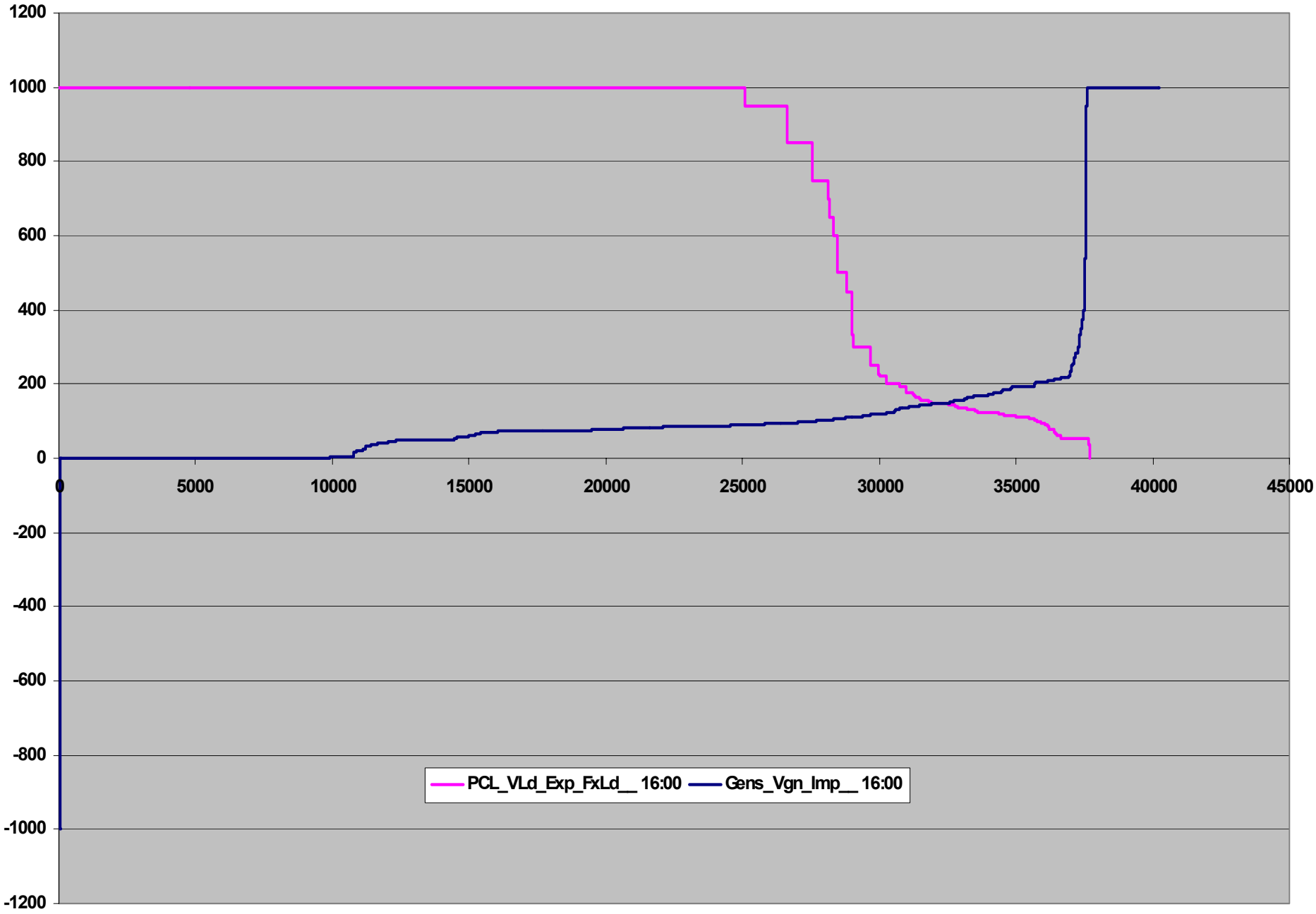
HB	RSI
14:00	1.038
15:00	1.033
16:00	1.033
17:00	1.053
18:00	1.085

Pivotal Supplier

- Shows how dependent the market is on specific suppliers to meet the load for a specific hour.
- Pivotal Suppliers are Market Participants owning and/or controlling generation resources that, without which, a transmission constrained area would have insufficient generation supplies to serve electrical load.

The following figure shows the NYCA original Supply and Demand Curves for July 19, 2005 peak hour (HB 16:00)

NYSO's Demand and Supply
July 19, 2005; HB 16:00



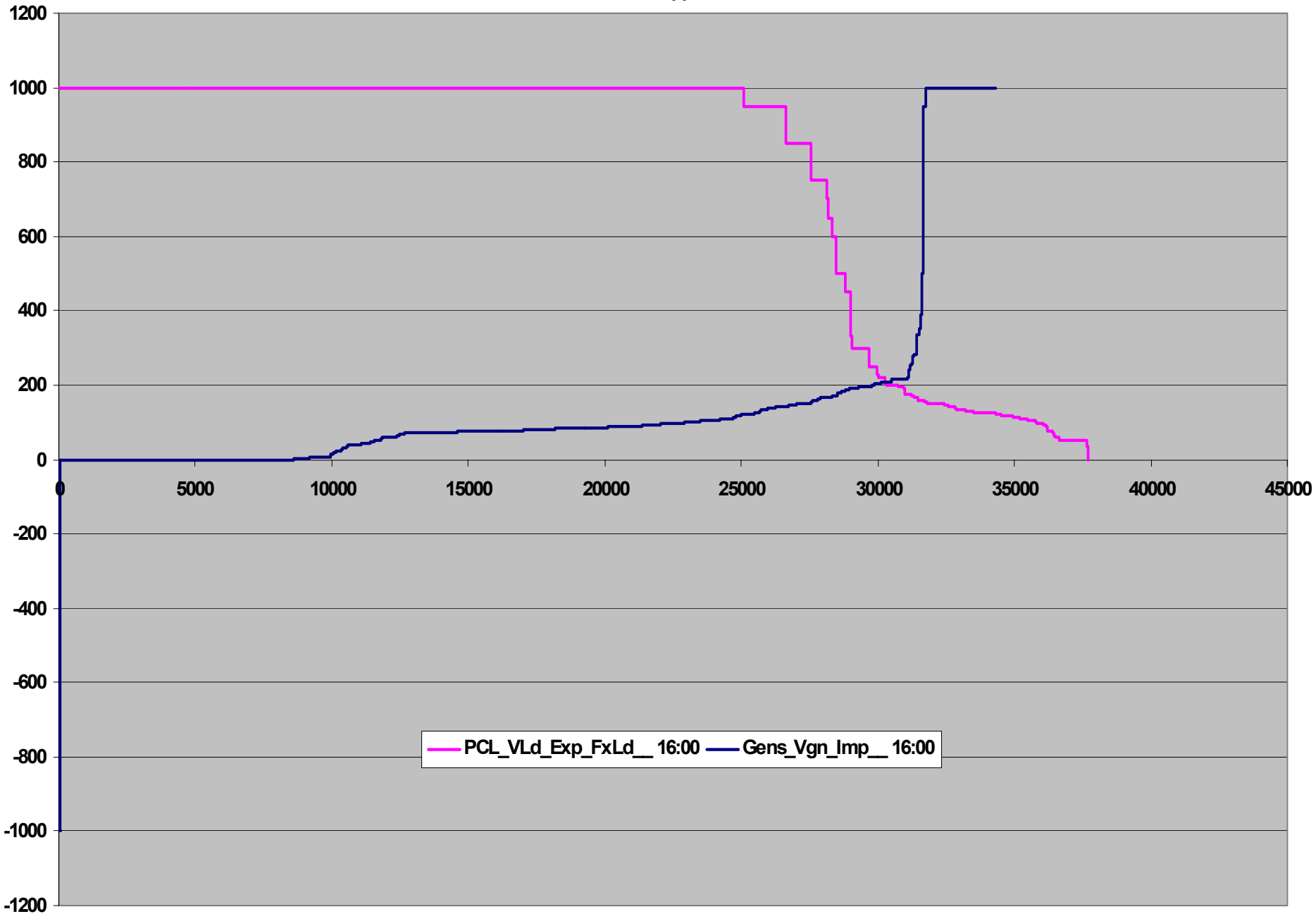
Pivotal Supplier

MMP examined the “Pivotal Supplier”

**MMP removed the largest supplier from the “bid stack” to
examine if that supplier is pivotal;**

MMP examined July 19, 2005 the peak hour: HB 16:00

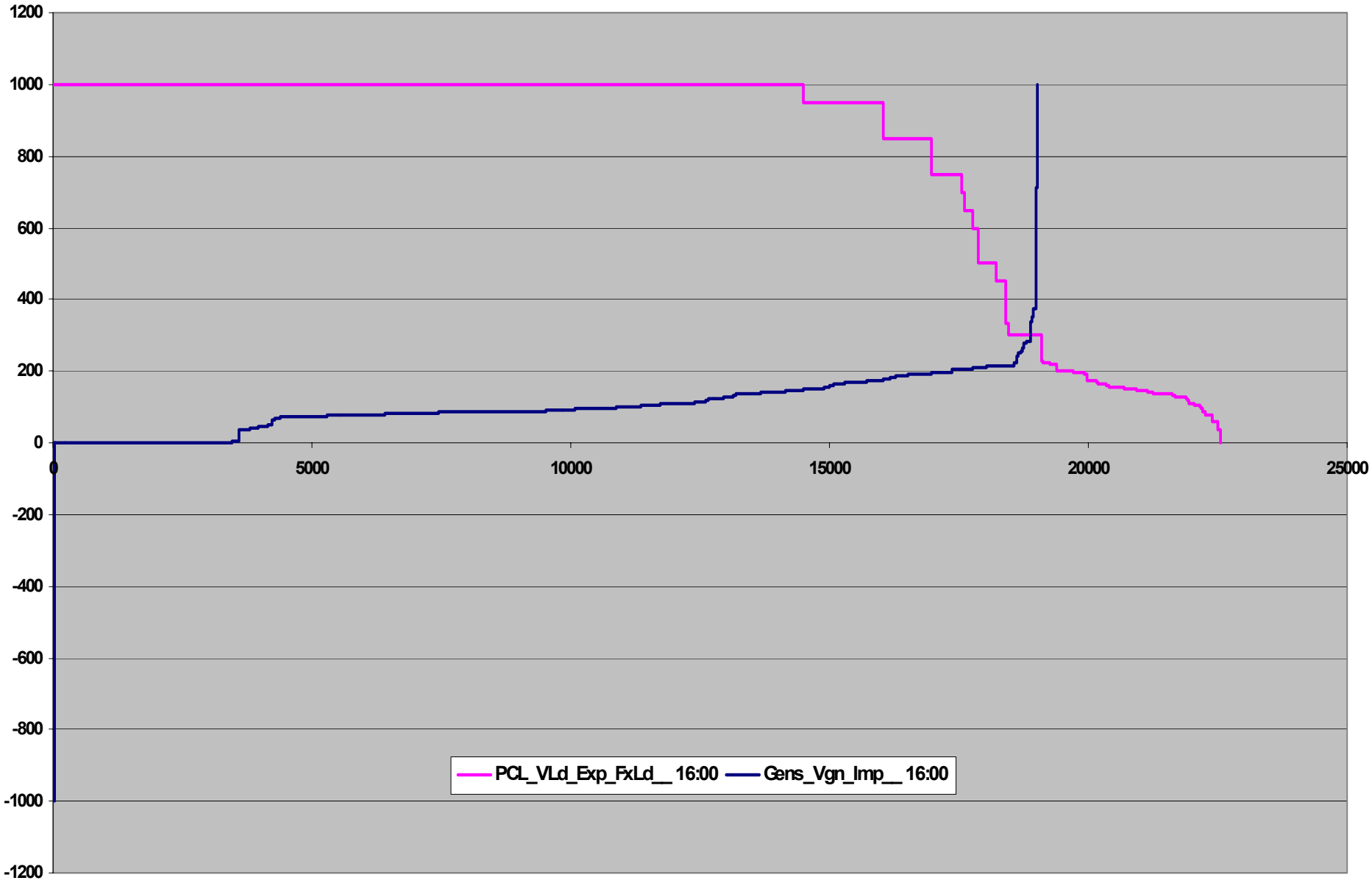
NYISO's Demand and Supply
July 19, 2005; HB 16:00
The Pivotal Supplier Test



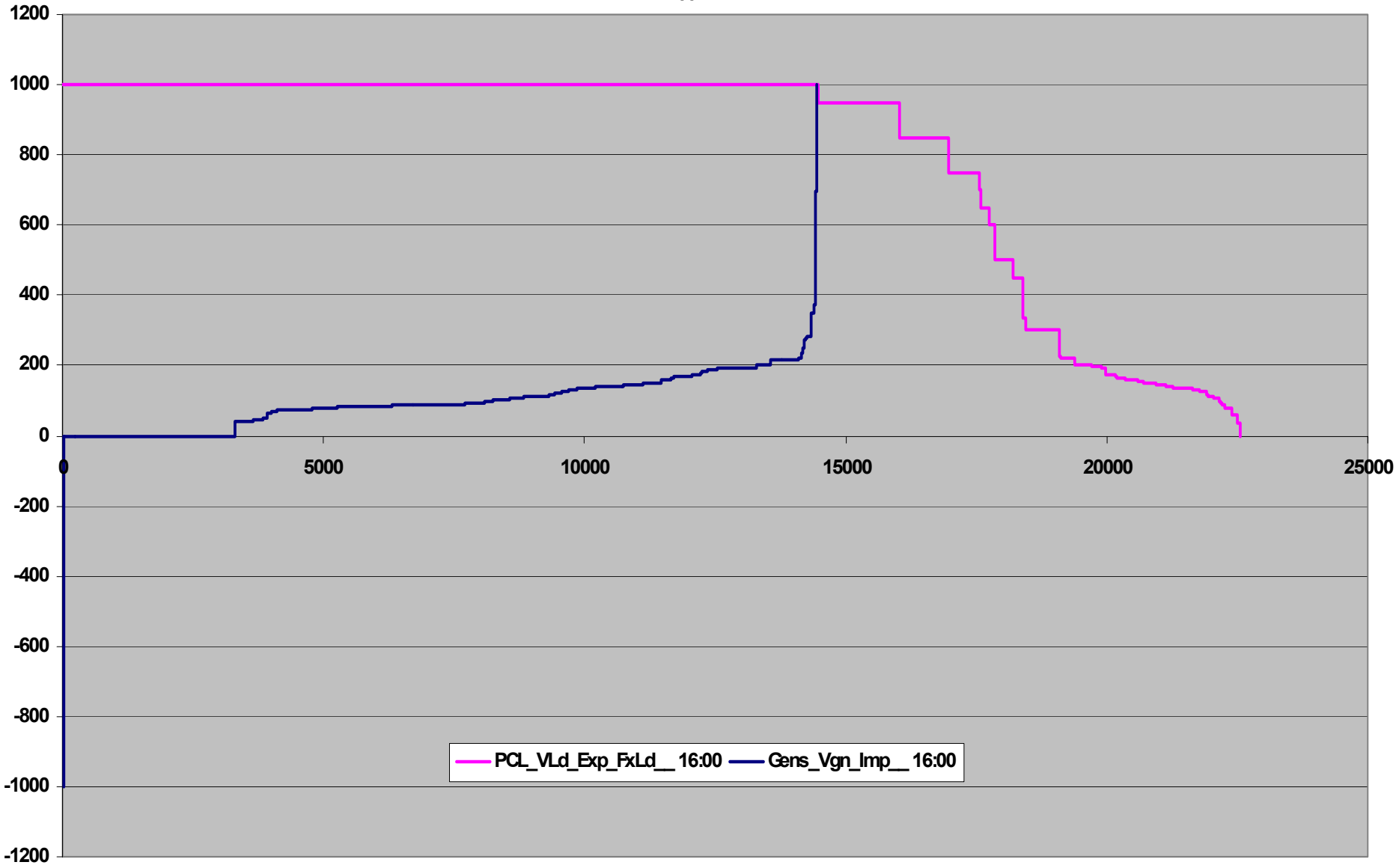
Pivotal Supplier

**MMP examined the “Pivotal Supplier”
impact for the July 19, 2005 peak hour
with a major constraint binding**

NYISO's Demand and Supply
July 19, 2005; HB 16:00
Downstream of the Constraint



NYSO's Demand and Supply
July 19, 2005; HB 16:00
Downstream of the Constraint
The Pivotal Supplier Test



Monitoring for AMP

- **Screened for Hours in which Zonal LBMP is greater than \$150**
- **Reran market with AMP activated**

Month	ROS Zone LBMP > \$150 Arming Zonal Hour Count Since May 28	Zonal Simulation Result: Zonal Hour Count where there is an Impact
May, 2005	0	0
June, 2005	35	0
July, 2005	126	0
August, 2005	332	0
September, 2005	365	0
October, 2005	441	1

An Alternative to ROS AMP: Screening that can result in a bidder being placed on the Watch List for one DAM run

- **MMP proposes a screening process to identify the potential exercise of market power.**
- **Screening approach:**
 - MMP reviews MP conduct, structural considerations and system conditions to determine if a pre-DAM run of SCUC is necessary/appropriate.
 - Outcome of the pre-DAM SCUC run may lead to a determination that an MP's offer is expected to exceed the conduct threshold and, if facts and circumstances don't change, is likely to have a material market impact in the upcoming DAM.
 - MMP will inform the Market Advisor and place the unit(s) on the portfolio watch-list for the upcoming DAM run.
 - MMP will contact the MP, inform the MP that its unit(s) have been placed on the watch list and invite the MP to provide information germane to an update of its reference levels prior to close-of-business on the day prior to the relevant DAM run.

Conclusion

- **NYISO has implemented several features to enhance the market demand responsiveness**
- **These components have increased the price elasticity of demand.**
- **Post-AMP screening over the past five months shows no instances of mitigation under LBMP impact, and one under GP impact.**
- **As an alternative to ROS DAM AMP, MMP proposes a screening methodology that would permit it to place an MP on the watch list for one DAM run.**