Estimated Effects of the Proposed Capacity Demand Curves

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Summary and Objectives

- The capacity demand curves have been proposed to:
  - ✓ Increase the stability of the economic signals provided by the capacity market;
  - ✓ Recognize the incremental value of capacity above the minimum requirement;
- This presentation describes the long-term effects qualitatively and the short-term financial effects of the capacity demand curves.
- The capacity demand curves are likely to lower overall costs for loads in the longer-term as the additional investment (caused by the increase in capacity revenue) reduces the frequency of price spikes associated with shortage conditions.

Long-Term Effects of the Demand Curves

- The long-term effects of the demand curves are more important than the short-term financial effects shown later in the presentation.
- The primary incentives for new investment when capacity margins fall to relatively low levels will derive from: (1) capacity payments, and (2) energy profits associated with price spikes during periods of shortage.
- To the extent that the demand curve increases capacity payments above the minimum requirement, additional investment will increase the capacity margin and decrease the frequency of the price spikes.

Long-Term Effects of the Demand Curves

- If the capacity payments and price spikes are equally effective in motivating new investment the long-run equilibrium should result in comparable payments by loads (either through higher capacity payments or higher price spike costs).
- Stable capacity revenues are likely to provide a superior signal for new investment relative to expected revenues from price spikes.
  - ✓ Capacity market revenues under the demand curves should be easier to forecast than the price spike revenues that are much more uncertain.
  - ✓ If investors are risk averse, revenues provided through capacity payments will be more effective in motivating new investment than revenue provided through price spikes.
- If this is true, the long-run equilibrium capacity margin will be increased. We estimate that a 1% increase in the capacity margin would reduce annual price spike costs to loads of approximately $100 million on average.

Analysis of the Short-term Effects of the Proposed Demand Curves

- The following tables show the estimated effects of the demand curves presented at the last BIC meeting. The first table shows the estimated effects assuming that the capacity market is not deficient.
- Because the deficiency level will be 3 times the annual cost of a new gas turbine starting May 1, the demand curve under deficiency conditions will lower capacity costs (by eliminating the multiplier). These results are shown in the second table.
- Loads that will be self-supplied by its own generation or nuclear units under long-term capacity contracts are not assumed to be financially impacted by prices in the capacity market.
- Each table shows the costs borne by load in New York City (including the purchases in-city and the residual purchases made in the ROS), and by loads in the ROS.
- The tables also show the financial effects on a MWh basis by dividing the estimated costs by the actual loads for 2002.

Assumptions

- The min, max, and estimated values shown in the results below vary based on the amount of assumed excess capacity that would clear under the demand curve.
- These values were developed with the NYISO and are shown in the table.
- The prices assumed to occur without the demand curve are those from the strip auction in the past two capability periods.
- The prices are converted from UCAP to ICAP basis and are shown in the table to the right.

Excess Capacity Assumptions (MW)

	NYC	ROS
Summer		
Estimated	125	1000
Low	0	600
High	200	2000
Winter		
Estimated	700	2500
Low	400	2000
High	800	3500

Non-Demand Curve Price Assumptions

($/kw-year -- ICAP basis)

	NYC	ROS
Summer	$ 52	$ 10
Winter	$ 44	$ 4

Estimated Annual Demand Curve Effects: Non-Shortage Conditions

NYC

Summary	Estimate	Min	Max
Costs ($)	$ 125,294,474	$ 71,994,220	$ 156,995,251
Rate Cost ($/MWh)	$ 2.91	$ 1.67	$ 3.65

Rest of State

Summary	Expected	Min	Max
Costs ($)	$ 184,212,119	$ -	$ 366,625,000
Rate Cost ($/MWh)	$ 1.94	$ -	$ 3.86

- Based on the average residential rates in NYC, these cost increases would range from 1.2% to 2.6% for the non-NYPA residential load (increase of 2.1% in the expected case).

Estimated Annual Demand Curve Effects: Shortage Conditions

NYC

Summary	1 Month	6 Month
Costs ($)	$ (55,870,833)	$ (335,225,000)
Rate Cost ($/MWh)	$ (1.30)	$ (7.79)

Rest of State

Summary	1 Month	6 Month
Costs ($)	$ (140,000,000)	$ (840,000,000)
Rate Cost ($/MWh)	$ (1.47)	$ (8.84)

- The deficiency price assumed for NYC = $477 per kw-year ($159 * 3).
- The deficiency price assumed for ROS = $255 per kw-year ($85 * 3).