DPS Conceptual Proposal
For Ensuring
Resource Adequacy

October 4, 2002

Capacity Reserves Are Necessary In the Electricity Market

- Electricity cannot be readily stored; it must be generated upon demand.
- Generators require periodic maintenance and are subject to random forced outages.
- Capacity reserves are needed to ensure reliability.
- Capacity reserves are even more valuable in competitive markets, where they are needed to mitigate market power.
- Capacity reserves are expensive, and the reliable and efficient operation of the electricity markets depends upon sharing the cost of these reserves.

Current ICAP Market Price May Fail To Reflect Value to System

- Sharing of generation capacity resources, although essential to ensuring reliability at reasonable cost, socializes the benefits of ICAP.
- Competing LSEs have an incentive to purchase the minimum required capacity reserves, since ICAP does not provide energy hedges or priority for curtailment.
- LSE bids reflect the low value of ICAP to the individual LSE, not the higher value to the market as a whole.
- Market price of ICAP may fail to reflect the value of capacity reserves to the entire market.
- ICAP market may fail to encourage enough capacity reserves for the reliable, efficient, and competitive operation of the electricity market.

Deficiency Charge Does Not Provide Efficient Price Signals

- Retail competition forces LSEs to purchase the minimum required capacity reserves, regardless of the level of the deficiency charge (unlike traditional utilities, which would value capacity reserves in accord with their social benefit).

- Lack of a price signal discourages new capacity, and may fail to retain existing capacity.

- Low ICAP prices persist even as the level of reserves drifts down toward the minimum required.

- Drift will continue until some event (retirement, outage, load growth) triggers an actual deficiency and the imposition of a deficiency charge.

Deficiency Charges May Fail to Stimulate New Capacity Even when Imposed

- A one-year auction could only provide a single year's worth of financing.
- Even a small amount of new capacity could eliminate the deficiency and send the ICAP price back down to low levels.
- Developers cannot rely on deficiency charges for financing new investment.
- Deficiency charges largely provide a windfall for existing suppliers.
- ICAP Deficiency Charges would impose a cost of up to $3 billion per year on LSEs, leading to potential bankruptcies and abandonment of customers.
- An individual LSE could not protect itself by financing new capacity, because the benefits would be socialized and the LSE would end up subsidizing its competitors.

Deficiency Charge Is Susceptible to Market Power Abuse

- Market price will be either near zero or near the deficiency charge, leading to extreme volatility and a great potential for abuse of market power.
- If capacity reserves are barely adequate, existing suppliers have a huge financial incentive to withhold capacity and create a shortage.
- Existing suppliers have an even greater incentive to oppose new entry.
- Fails to provide a workably competitive market.
- Non-competitive prices fail to meet the legal requirement that prices be “just and reasonable.”

FERC's Resource Adequacy Proposal Is Impractical for NY

- FERC proposes minimum reserve margin for LSEs, and 3-year advance purchase requirement.
- LSEs still have incentive to purchase only the minimum requirement, leading to volatile capacity market.
- Merchant developers still won't be able to get financing.
- Competing LSEs won't know their loads 3 years in advance, and small LSEs won't be able to finance capacity.
- FERC's proposal does not provide for a workably competitive ICAP market.

Proposals to Create a Workably Competitive ICAP Market

- Centralized ICAP market, to provide an efficient spot market.
- Replacing Deficiency Charge with Demand Curve, to produce a less volatile, workably competitive ICAP market.
- Separate Demand Curves for Locality Requirements
- Adjusting the Demand Curves, to ensure a reasonable amount of ICAP is provided.
- Dealing with Deficiencies, in case the market fails to deliver.
- Forward Markets.

Centralized ICAP Market

- NYISO would operate an ICAP spot market, either monthly or annually.
- NYISO would enter all demand bids (quantity and price), determined and posted in advance.
- NYISO would accept supply offers from market participants, including qualified resources (generators or demand-side resources) and any LSEs or marketers that have signed bilateral ICAP contracts with qualified resources.
- NYISO would determine the market-clearing price and quantity of ICAP, and all suppliers would receive the market-clearing price.
- NYISO would calculate the cost of capacity and charge LSEs based on their share of peak capacity (similar to how current LSE capacity obligations are set).

Locality Requirements

- NYISO would operate spot markets for NYC and LI localities, which would clear prior to the spot market for the state.

- NYISO would enter demand bids for NYC and LI localities, determined and posted in advance, with possibly higher prices reflecting higher supply costs in the localities than in the rest of the state.

- NYISO would accept supply bids from local resources and any marketers or LSEs that had signed bilateral contracts with local resources.

- NYISO would determine the market-clearing prices and quantities for the localities, pay all suppliers their respective local market prices, and charge LSEs based on their share of respective local peak loads.

- Quantities purchased by the NYISO in each locality would be offered into the statewide market at $0 cost (but paid the statewide market-clearing price).

ICAP Demand Curve

- Value to NY of installed capacity decreases gradually with quantity supplied; value (marginal benefit) may be assumed to reach $0 at 132% of peak load.

- NYISO's demand bids should provide prices that decrease gradually with quantity, yielding downward-sloping demand curves.

- Demand curves should have sufficiently shallow slopes to limit price volatility and mitigate market power.

- Demand curves should not incorporate exorbitant deficiency charges, far above the long-run cost of capacity.

- Demand curves should not be so flat as to potentially purchase excessive capacity at unreasonably high prices.

Setting and Adjusting the ICAP Demand Curves

- Demand Curves should be set high enough to ensure reasonable amounts of ICAP are supplied in the long run.

- In the vicinity of the minimum reserve levels, demand curves should reflect the long-run cost of capacity.

- The annual cost of a new combustion turbine provides an upper bound on the long-run cost of capacity reserves; costs would be offset by revenues from energy and ancillary services. Other resources, including demand-side resources and older, inefficient generation, have the potential to provide installed capacity at lower cost.

- The NYISO should review the Demand Curves annually in conjunction with its long-term planning functions, along with the NYSRC and NYPSC. Demand Curves should not be changed frequently; changes should only be made to address long-term imbalances, and with input from all parties.

Dealing with Deficiencies

- The ICAP Demand Curves are intended to provide reasonably stable long-term price signals to the market that will encourage the market to provide adequate capacity reserves.

- If the NYISO forecasts a potential capacity deficiency in future years, the preferred approach is for NYISO to adjust the demand curves sufficiently far in advance to allow the ICAP market to provide the additional capacity needed at least cost.

- If the ICAP market fails to provide the needed capacity, either statewide or in the localities, then NYISO may have to take emergency action outside the ICAP market in order to ensure reliability. This may take the form of purchases of new capacity under long-term contracts or other measures, the costs of which would be allocated to the appropriate LSEs. Since such emergency actions are likely to be more expensive than purchases via the ICAP market, they should not set ICAP market prices.

Forward Markets

- NYISO currently operates 1-month and 6-month forward markets, in addition to monthly "deficiency" spot markets; NYISO does not enter demand bids in the forward markets.

- NYISO could continue this practice, i.e. operating forward markets in advance of the spot markets without entering any demand bids in the forward markets.

- In the spot markets, NYISO would enter demand curves instead of deficiency bids; the demand curves would provide more stable and predictable prices in the spot market, which would in turn stabilize prices in the forward markets.

- NYISO should not enter demand bids in both the forward markets and the spot markets, as this would provide opportunities for gaming: Suppliers would have an incentive to withhold from the forward market, driving up the forward market price, since they could sell the remainder in the spot market.

Impacts of a Statewide ICAP Demand Curve

- The immediate impact of a statewide demand curve would be to increase upstate ICAP prices, by an amount dependent upon the demand curve and the availability and cost of ICAP supply.

- According to NYISO's 2002 Load and Capacity Data ("Gold Book"), the current installed capacity in the NY control area is approximately 123% of forecasted peak load.

- In addition, NYISO will allow up to 2,755 MW of imports to qualify as ICAP, equivalent to approximately 9% of statewide peak load.

- Rate impacts would be mitigated by ICAP that is owned by TOs, subject to ICAP revenue caps (Con Ed's divested generation), or purchased under long-term contracts (nuclear units). These total approximately 23,000 MW, so that only 14,000 to 17,000 MW would receive the upstate price. Short-term bilateral contracts would provide additional (short-term) mitigation.

Alternative Demand Curves and their Impacts

- NYPSC staff's "illustrative" demand curve (presented 5/21/01) reached $48 per kW-year ($4 per kW-month) at an ICAP quantity of 118% of peak load, and dropped to $0 at 128% of peak load. At 123% of peak load (counting only NY supplies), this demand curve would yield a price of $24 per kW-year, roughly equal to current ICAP prices, assuming all in-state ICAP offers at that price. The additional quantities purchased (5% of peak load, about 1500 MW) would add about $36 million per year, and might also somewhat increase the statewide ICAP price.

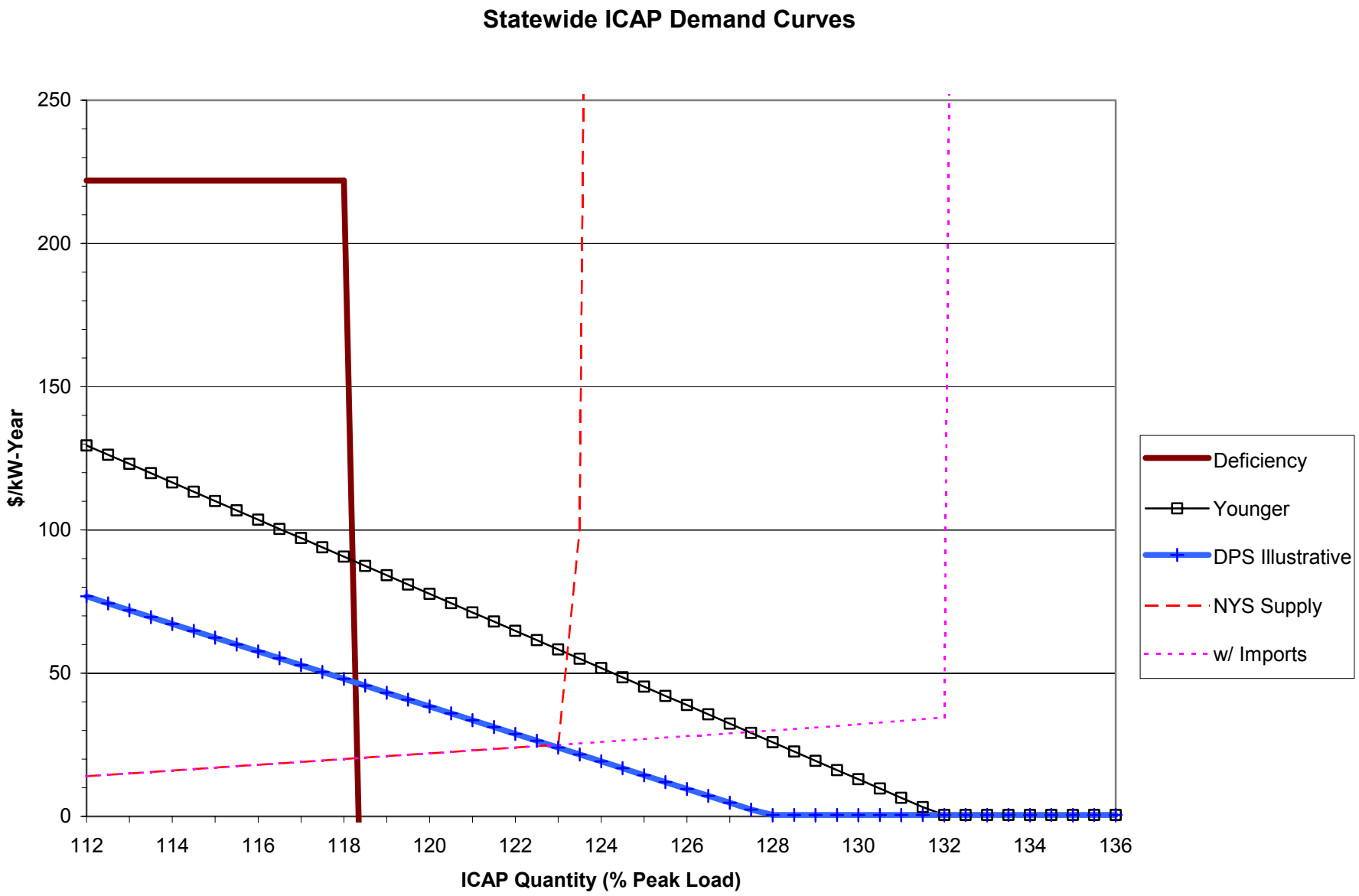
- Mark Younger's proposed demand curve reaches $90.66 per kW-year of ICAP at 118%, drops to $58.28 per kW-year at 123% of peak load, and falls to $0 at 132% of peak load. If only current NYS resources bid in, ICAP prices would increase from about $22 to about $58 per kW-year; applied to 15570 MW, this would increase statewide ICAP payments by over $500 million per year, although short-term bilaterals could mitigate this impact.

Import Uncertainties

- A major uncertainty is the response of imports to higher upstate ICAP prices.
- Recent imports have only amounted to a few hundred MW, roughly 1% of peak load; but higher prices would presumably attract additional imports.
- If large amounts of imports were currently available at a moderate price, e.g. $40 per kW-year, this would tend to cap statewide ICAP prices and mitigate the rate impact of the higher ICAP demand curves.
- ICAP prices in neighboring regions are currently no higher than NY's upstate ICAP prices; but imports must obtain transmission to their borders, which may add significantly to their costs.
- An evaluation of the availability and cost of imports is essential to help estimate the cost impacts associated with alternative ICAP demand curves.

Alternative ICAP Demand Curves ($ per kW-year)

ICAP Supply (% of Peak Load)	Deficiency Charge	DPS "Illus-trative"	Younger
117.99%	222.00	48.00	90.66
120%	0.00	38.40	77.71
123% (NY Only)	0.00	23.00	58.28
126%	0.00	9.60	38.86
129%	0.00	0.00	19.43
132% (max imports)	0.00	0.00	0.00


Statewide ICAP Demand Curves
250
200
150
100
50
0
$/kW-Year
112
114
116
118
120
122
124
126
128
130
132
134
136
ICAP Quantity (% Peak Load)
Deficiency
Younger
DPS Illustrative
NYS Supply
w/ Imports