

Power Alert III

New York's Energy Future

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Today's Presentation

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- II. Background for “Power Alert”**
- III. This year's report**
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 - **Situation & Recommendations**
 - B. Transmission*
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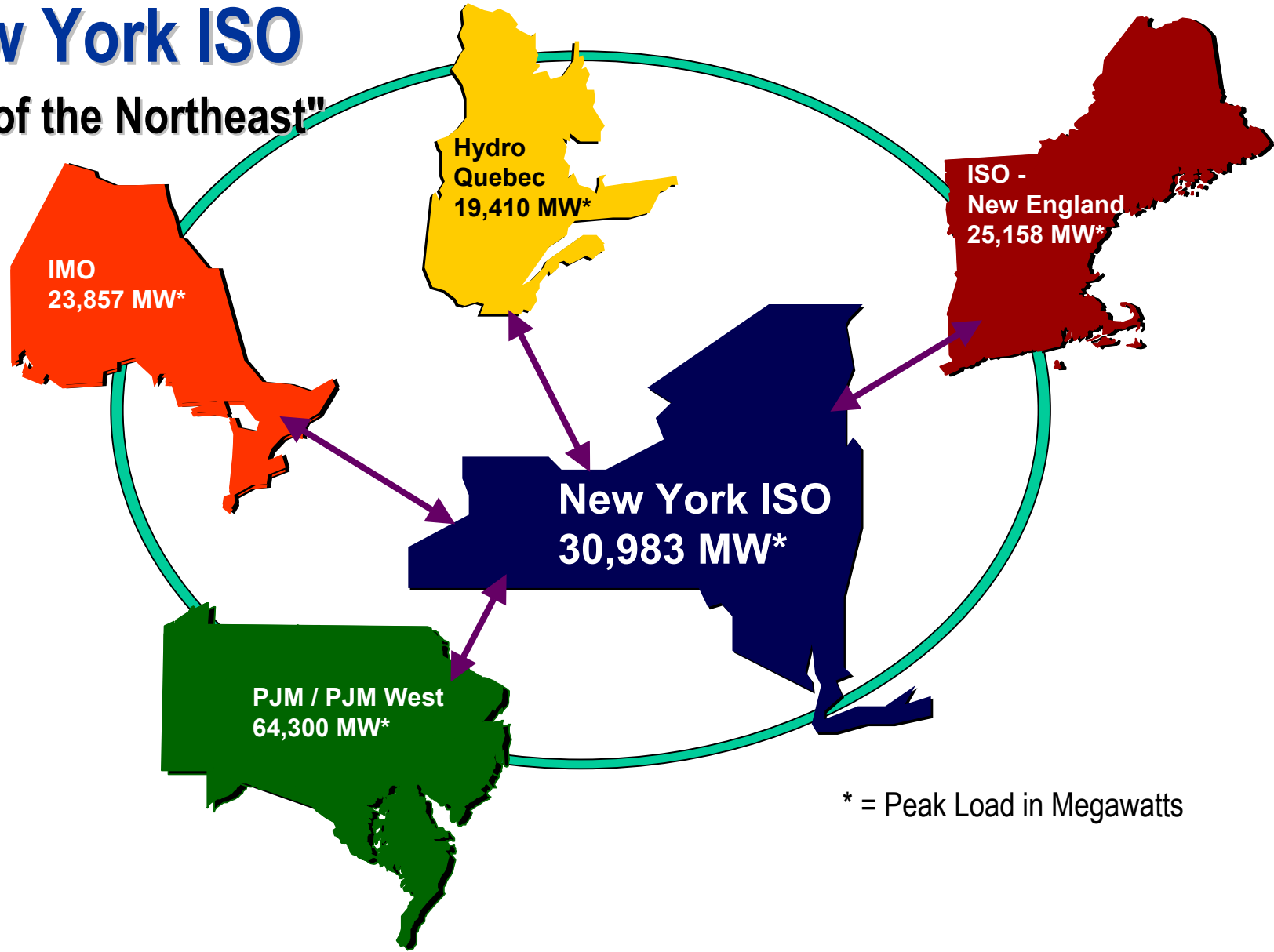
I. What is the New York Independent System Operator?

The NYISO - Background

- NYISO formed December 1, 1999.
- Highly divested and complex marketplace featuring co-optimized market clearing systems.
- 91 percent utility generation divestiture rate makes it most divested market in nation.
- NYISO market volume \$5.2 billion last year and \$16.2 billion since inception. Highest market volume in the East.
- Unique challenge: New York City is world's biggest and most complex load pocket. World capitals of finance and communications located within.
- Unique geography makes it the "Hub of the Northeast."

New York ISO

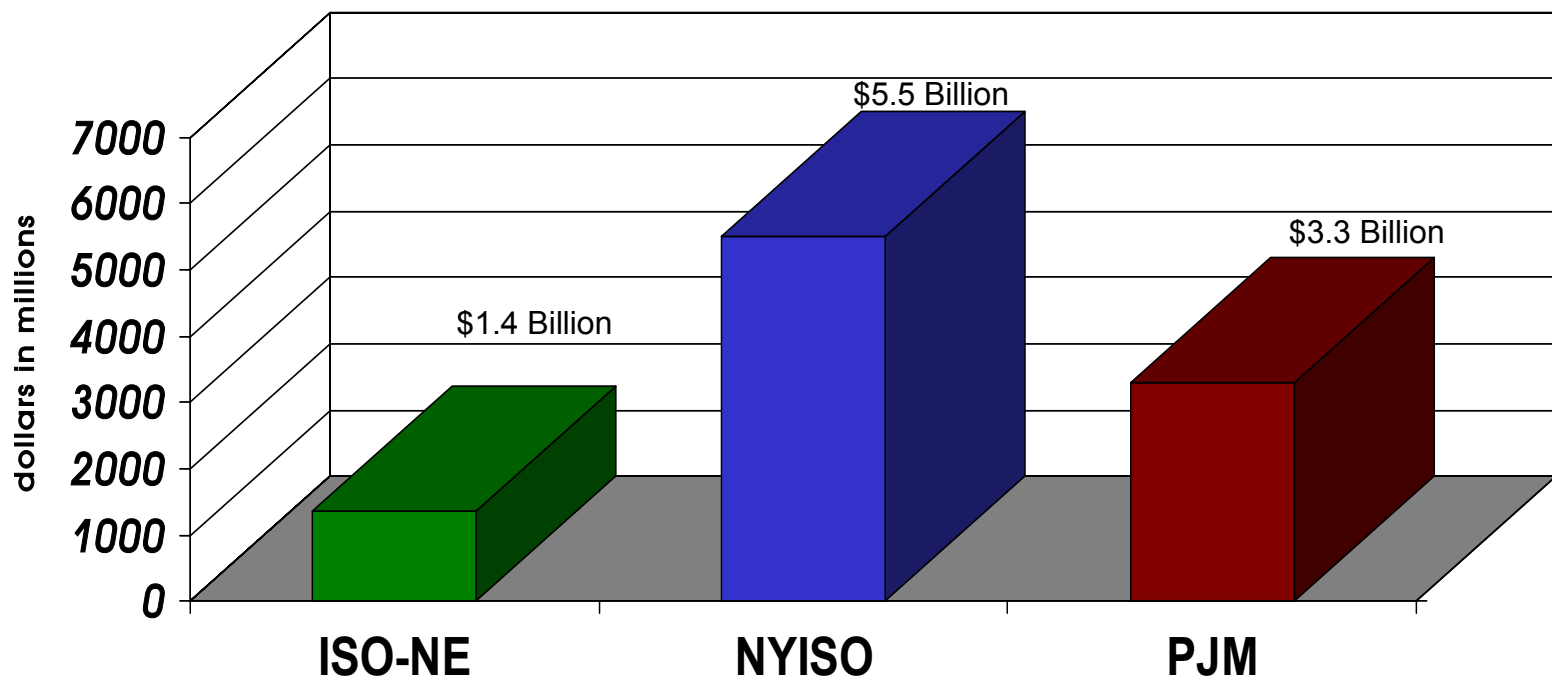
"Hub of the Northeast"



* = Peak Load in Megawatts

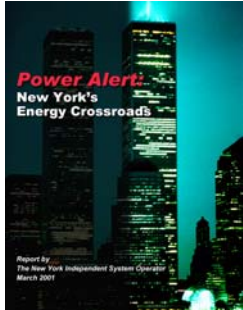
Northeast ISO Market Volumes

2001 Total Market Volume

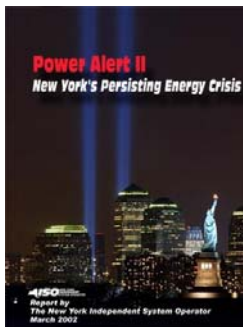


II. *Power Alert* Background

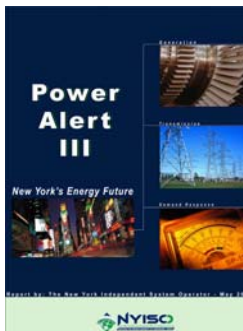
Power Alert



- **Power Alert I: New York's Energy Crossroads,**
 - ✓ *was published to much attention. It outlined a looming energy problem for New York State and particularly New York City; and proposed realistic solutions. This report concluded that significant additional generating capacity would enhance reliability, put downward pressure on wholesale electricity prices and benefit the environment.*



- **Power Alert II: Following the 9/11 tragedy, NYISO revisited Power Alert I, with consideration given to infrastructure damage and further potential down-turn in New York's economy created by the terrorist attacks.**
 - ✓ *Power Alert II: New York's Persisting Energy Crisis, was published in March 2002 with the major finding that, although some power plants had finally been approved, New York continued to be in serious need of new electric generating plants.*



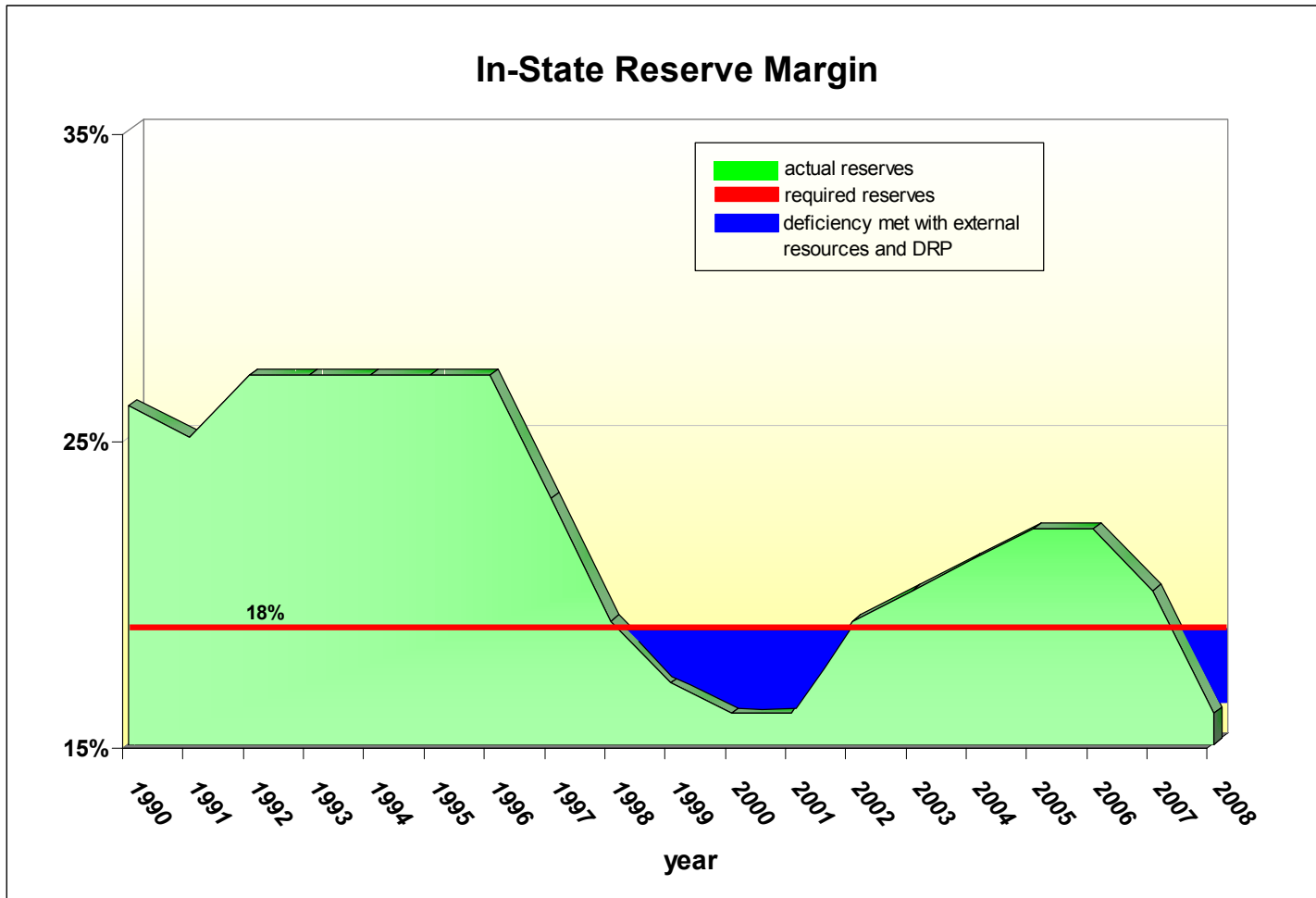
- **Power Alert III takes a more comprehensive view breaking down the future of New York's bulk power system into three components we call the three legs of the energy system stool and offers recommendations for the future:**
 - 1) *supply,*
 - 2) *transmission and*
 - 3) *demand response and conservation.*

III. This Year's Report

The Three-Legged Stool of the Electric Power System



A. Generation / Supply



A. Generation / Supply



- This Summer in New York –

NYS Summer 2003 In-State System Load and Generating Capacity *					
Region	Requirement (Load + Reserve or Locational Requirement)	Generation Available	Margin (as of April 2003)	New Generation & SCRs Summer 2003	Projected Margin Summer 2003
NY State	37,087	36,527	- 560	891	+ 331
NY City	8,816	8,749	- 67	118	+ 51
LI	4,607	4,983	+ 376	107	+ 483

**In-state supplies only as of 3/2003. Does not include out-of-state firm exports or contracts of 303 MW. Up to 1,500 MW of capacity from out-of-state resources has been available in the past. SCRs (a Demand Response Program) also assist in meeting demand in NY.*

A. Generation / Supply

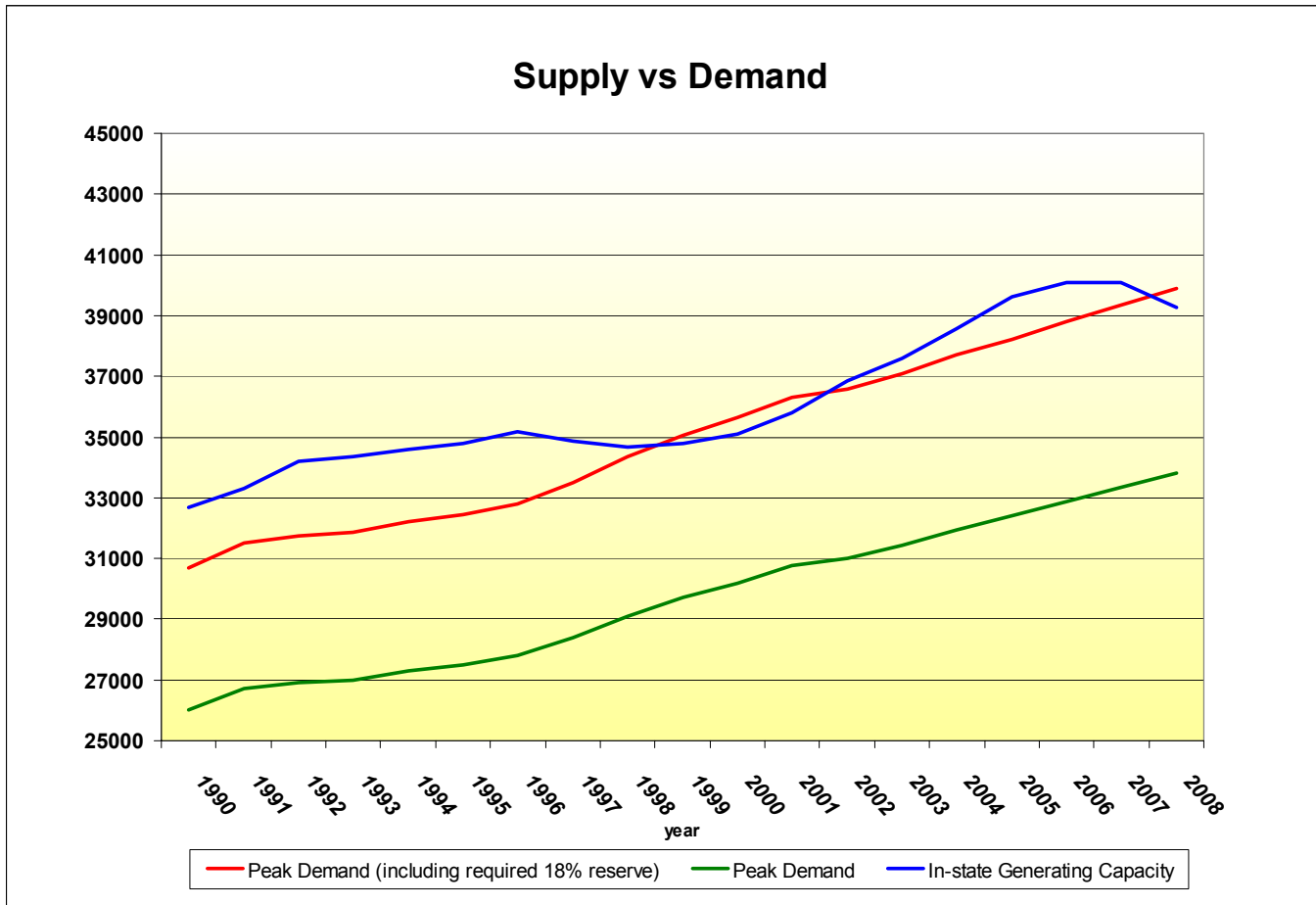


Issues to consider now for the **future**:

- “New world” risk, safety and reliability standards
- Fuel Diversity Issues
- Regulatory uncertainty deterring new investment
- Continued development of renewable and low emission supplies
 - ✓ *Wind power*
 - ✓ *Renewable Portfolio Standard (RPS)*
 - ✓ *Distributed generation*

A. Generation / Supply

Over the longer term –



Projected Peak Demand Requirements intersect with New York's In-State supply in 2007.

A. Generation / Supply



Generation / Supply Recommendations:

- **On the State level,**

- ✓ *It is essential that the New York State Legislature focus on and address the expired Article X electric power plant siting legislation as soon as possible. Article X represented perhaps the most stringent electric power plant siting laws in the nation, and it contained very strict (but appropriate) environmental requirements. This must be a top priority for the Legislature now.*
- ✓ *To reduce the risk of long-term contracts to load serving entities, and thus the NYISO, the NYPSC, and NYSERDA should work together to reduce institutional barriers to long-term contracts if enhancements to the capacity markets do not produce the anticipated results.*

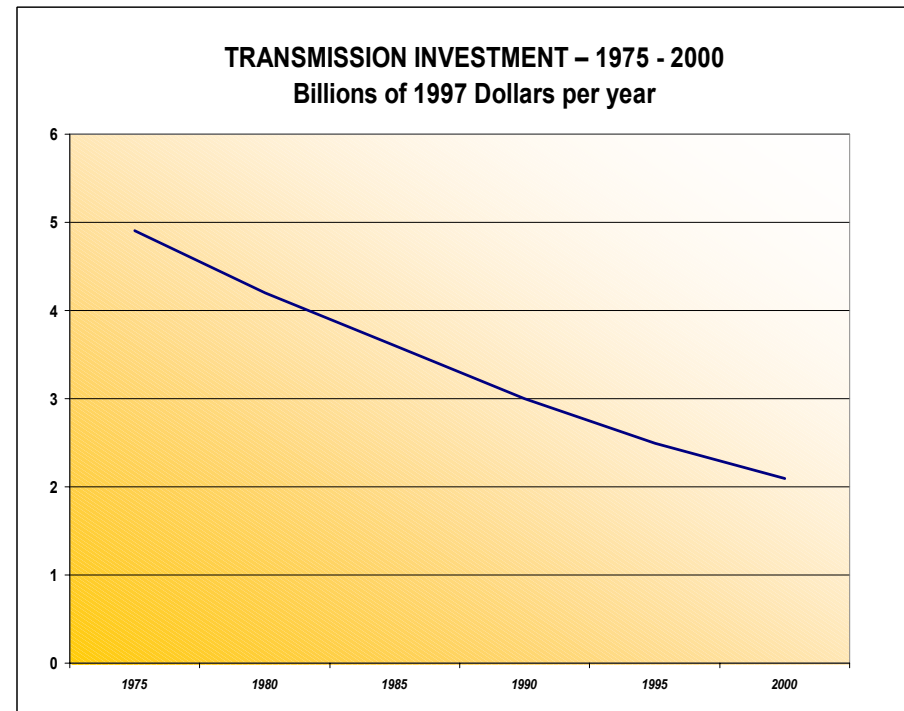
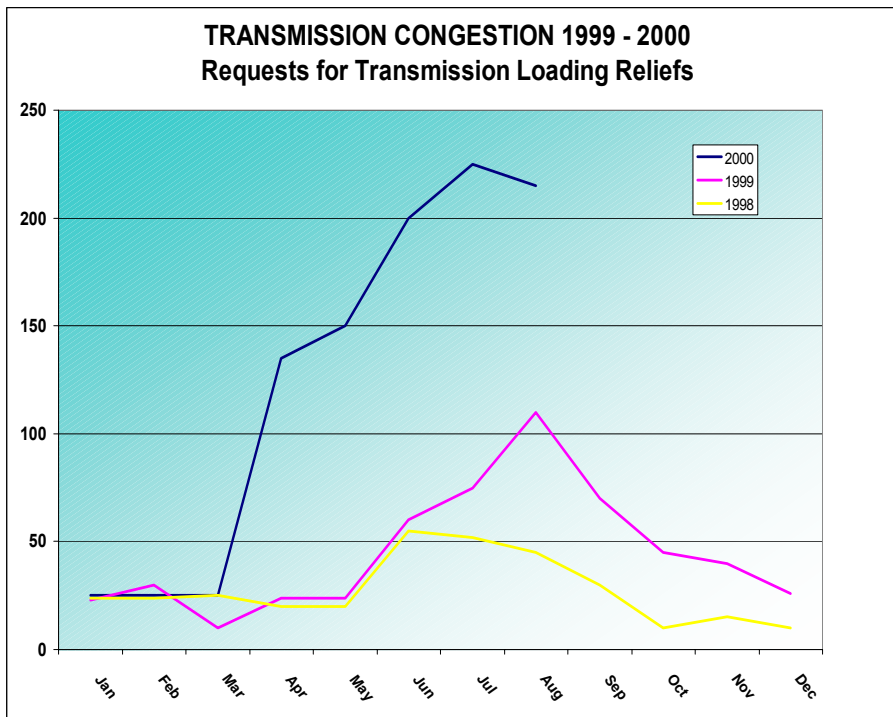
- **On the Federal level,**

- ✓ *Standard market design will improve “the rules of the road” for the national electric system, connecting various regions together much like the interstate highway system did in the 1950s. The key areas standard market design solidifies are open access to the transmission system, a means for valuing and trading transmission rights, a locational pricing system for supplies, and general rules for a system operator. FERC is planning to issue its final order late this year; but legislative opposition in the Congress threatens to derail this key market stabilization initiative. Basic standards for wholesale market development should be supported.*

B. Transmission



Transmission Congestion vs. Transmission Investment in the U.S.



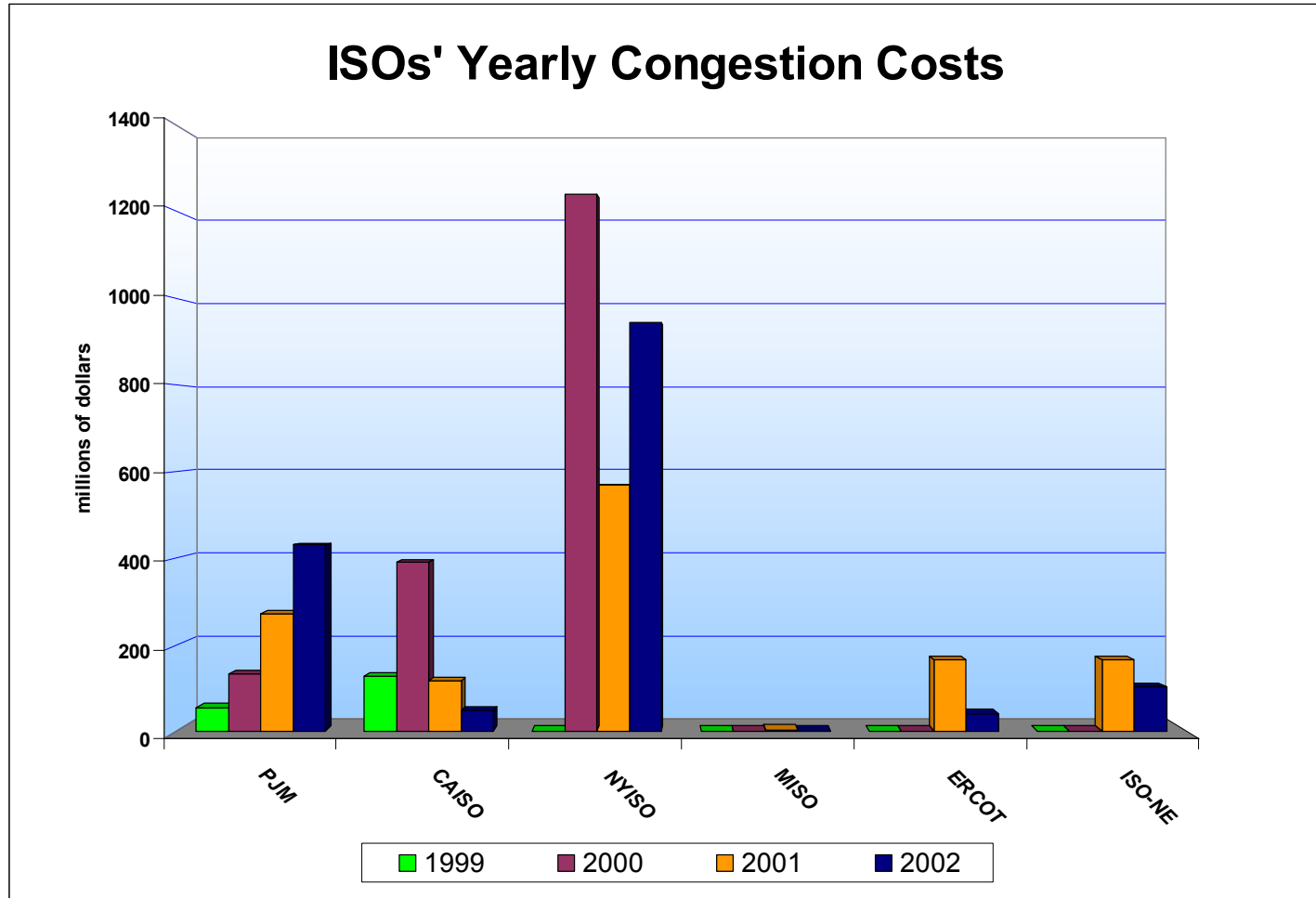
B. Transmission



Transmission in New York:

- The value of congestion during the NY market's first two-and-a-half years of operation totals almost 2.75 billion dollars.
- This fact notwithstanding, there have been no major proposals to upgrade the bulk power AC network to enhance market efficiency.
- LBMP pricing has, in fact, provided the incentive for siting generation in Southeast New York.
- Transmission expansion is being driven primarily by reliability needs and by the interconnection of new resources.

B. Transmission



B. Transmission



There are many reasons why transmission expansion has been slow to occur:

- **Regulatory Uncertainty**

- ✓ *Market design and structures are still evolving*
- ✓ *FERC vs Congress (SMD vs White Paper)*
- ✓ *ISO/RTO/ITP/ITC/Transco debates*
- ✓ *Federal/state tension over jurisdictional issues*

- **Transmission Pricing Policies**

- ✓ *Lack of clear and consistent rules for cost recovery*
- ✓ *FERC's "and"/ "or" pricing policy*
- ✓ *Retail recovery mechanisms; rate freezes*
- ✓ *"Participant Funding" vs "socialization" debate*
- ✓ *Misconception that TCC financial rights should pay for expansion*

- **"NIMBY" and other local issues**

- **Both merchant and regulated transmission are impacted by the uncertainty created by these issues**

B. Transmission



Recommendations:

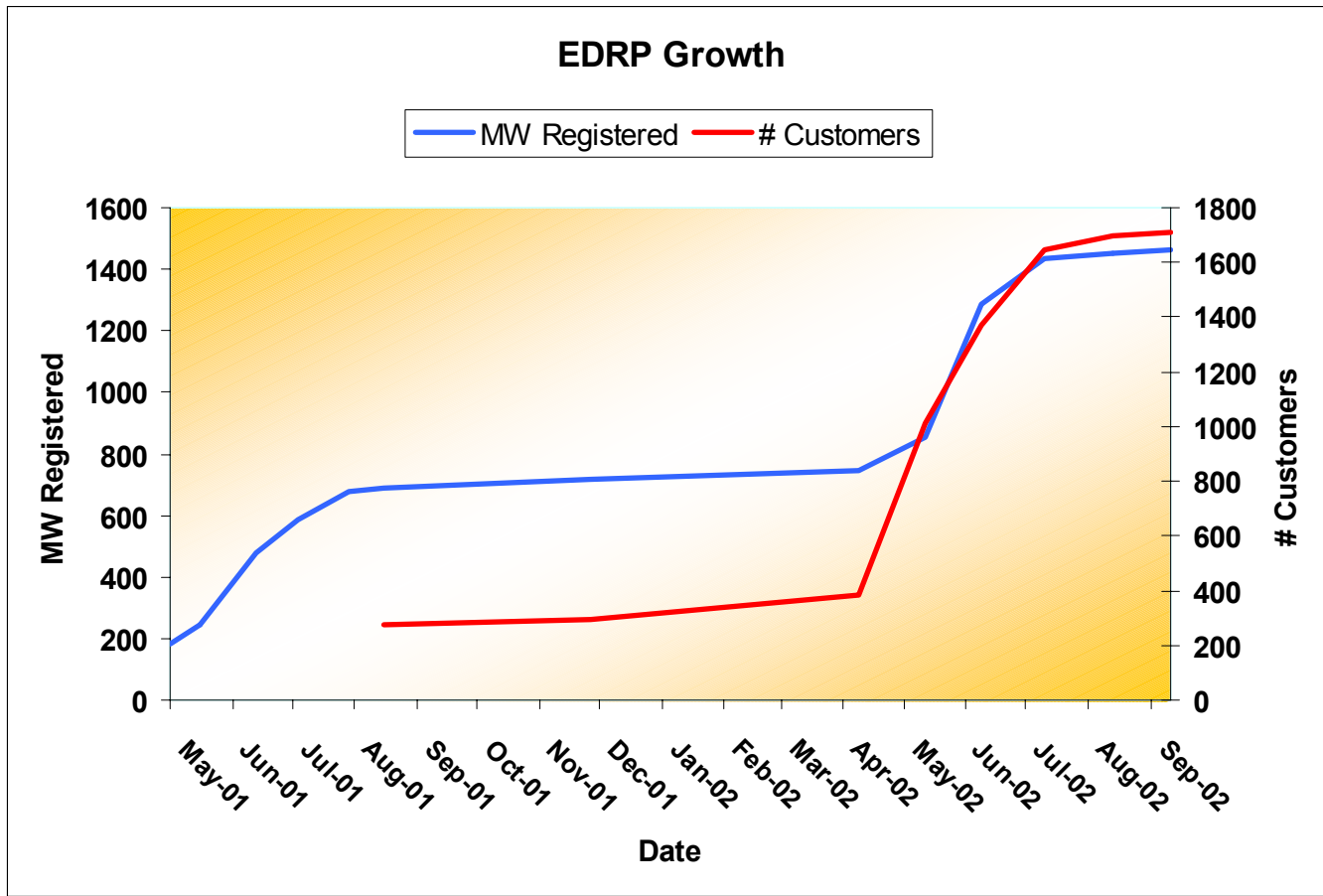
1. The NYISO, its Market Participants, and the PSC should investigate expanding transfer capability between Marcy and Pleasant Valley or, at a minimum, Leeds and Pleasant Valley as high customer value / relatively low-cost ways to reduce congestion costs to consumers.
2. Besides generation expansion, increased demand response and energy efficiency measures, increased transmission capability, likely in the form of HVDC, needs to be encouraged in the congested New York City and Long Island zones, as well as upgrades of the AC networks within those zones.
3. New York must implement a transmission expansion planning process through the NYISO governance process to facilitate the expansion of the NY transmission grid. It should pursue joint planning analysis with adjacent regions to study increasing the transmission capability between adjoining markets.
4. Cost allocation formulas and cost recovery mechanisms and other means of incentivizing expansion, need to be addressed in the appropriate forums.

C. Demand Response



- **Demand response programs at the wholesale level provide an effective means of impacting marginal prices in the day-ahead market;**
 - ✓ *Rather than acting as price-takers, loads can participate in price-setting along with supply resources. These programs recognize that not all loads are in a position to actively participate in the wholesale market. Ultimately, the greatest source of demand response will occur when relevant retail customers, particularly large ones, see and are able to react to wholesale spot market prices.*
- **Emergency Demand Response Program load curtailments in 2002**
 - ✓ *Estimated reduction in real-time LBMPs ranging from*
 - **4.4 percent in the Hudson River region**
 - **25 percent in the Western, NY region.**

C. Demand Response



C. Demand Response



Demand Response – The Future

- In October 2002, the NYISO stakeholders and the NYISO Board approved revisions to the EDRP and SCR programs that would allow for scarcity pricing conditions when these resources are needed.
 - ✓ *Allowing EDRP and SCR resources to set locational marginal price will have the most far-reaching impact of all the 2003 demand response program changes. The NYISO's Independent Market Advisor identified that existing pricing rules and operating procedures have hindered efficient pricing during shortage conditions. Inefficient pricing (in this case, prices that do not reflect scarcity conditions) can hinder long-term resource development by providing incorrect pricing signals. The decision to allow demand resources to set marginal price will help to restore proper pricing during those few hours where reserve shortages are corrected by load reduction.*
- In 2003, DADRP will be expanded to allow third-party providers of demand response,
 - ✓ *in addition to load serving entities. This will allow customers more choices in DADRP providers and should increase the number of offers submitted to the day-ahead market by demand response providers.*

C. Demand Response



Recommendations

- **We must move toward real-time pricing.**
 - ✓ *Real-time pricing is a complex issue that requires significant coordination among state regulators, load serving entities and interested customers. Rate design should consider the impact of demand charges on customer motivation to shift energy usage – customers should not be penalized through demand charges for shifting energy from peak to off-peak periods.*
- **The introduction of affordable metering/ communication technologies would make a major contribution to successful real-time pricing;**
 - ✓ *Providing consumers with real-time price and consumption information and automated mechanisms to react to prices.*
- **Energy efficiency will play an important role in addressing New York’s supply situation.**
 - ✓ *New technologies in building heating, ventilation and air conditioning systems and lighting control can reduce energy usage by 20 to 25 percent in some facilities while minimizing the impact on occupant comfort.*

IV. Summary and Recommendations

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1. Get New Supply Built

- ✓ *New York must set a goal of bringing an additional 5,000 - 7,000 additional MW online by 2008 to enhance reliability, increase competition and deliver environmental benefits. Approximately 2,500 MW is under construction today but only another 1,000 MW is realistically on the horizon.*

2. Re-authorize New York's Article X Siting Law ASAP

- ✓ *The New York State Legislature should immediately re-authorize Article X in essentially its present form.*

3. Re-examine New York's Three-Decades-Old Reliability Criteria

- ✓ *In light of the needs of today's high tech society, and new security considerations, the NYISO should lead a comprehensive review of the overall reliability requirements for New York State, and particularly New York City and Long Island. This study must involve the recognized reliability organizations, New York State Reliability Council (NYSRC), Northeast Power Coordinating Council (NPCC), and North American Electric Reliability Council (NERC), as well as industry experts and state and federal regulators.*

4. New York Needs an Effective Planning Process

- ✓ *The NYISO and its market participants should initiate an open and transparent planning process for its electricity infrastructure (generation, transmission, demand response, and distributed generation) as soon as possible, and in advance of FERC's final order on Standard Market Design. New York is the only one of the three Northeast ISOs not to have a planning process that can result, in the end, in needed actions being taken.*

IV. Summary and Recommendations

5. Consider Moving Ahead With “High-Consumer-Value” Transmission Projects – Pick the Low Hanging Fruit

- ✓ *The New York State Public Service Commission (NYPSC) and the NYISO should work with the NYS energy industry and other stakeholders to address transmission cost allocation and recovery issues for transmission facilities to materially reduce transmission congestion costs to consumers where appropriate. The NYISO’s recommendations in the Transmission section of this report can serve as a starting point for deliberation.*

6. Take Demand Response to the Next Level

- ✓ *At the core of an effective and efficient market is the need for relevant customers to be exposed to real-time electricity prices and alter their behavior accordingly. Some load serving entities have established real-time pricing programs for larger industrial and commercial customers (National Grid has approximately 170 customers who pay the NYISO’s day-ahead prices). In addition, on April 30, 2003, the NYPSC issued an order instituting proceedings to evaluate changes to utilities’ real-time pricing tariffs. The NYISO strongly supports this proceeding moving forward in an expeditious manner.*

7. Simple, affordable metering technologies need to be developed and installed, and real-time electricity rate tariffs need to be put in place.

- ✓ *Consumers need to understand that real-time pricing can give them greater control over their electricity bills and more competitive choices. By inhibiting short-term price spikes, demand response programs represent an important component of an effective deregulated electricity market.*

IV. Summary and Recommendations

In Conclusion:

- New York has stayed just ahead of potential reliability problems for the past three years by utilizing stopgap measures and by driving the existing electrical infrastructure harder and harder.
- If New York is to have a truly economic, reliable and environmentally sound electrical infrastructure for the 21st Century, the recommendations contained in Power Alert III should be carefully considered and where appropriate, implemented by the State, New York's energy industry, and the financial marketplace.