

Individual State Needs Panel: New York
Energy in the Northeast –
Resource Adequacy & Reliability Seminar

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October 16, 2006

Evolution of Resource Planning In New York

- Historically, utilities decided what, when, where and how much to build, subject to State laws and regulations, and regulatory review and PSC prudence decisions
- Integrated Resource Planning came into vogue in 1980s
- PURPA and NY State six-cent law came into play in the 1980s and early 1990s - many IPP projects came on line
- Competitive Markets were introduced in the late 1990s; virtually all utility generation assets sold to independent entities.
- NYISO competitive wholesale market started in 1999
- Recently implemented NYISO planning process envisions market based solutions with “regulatory backstop” solutions to meet system needs

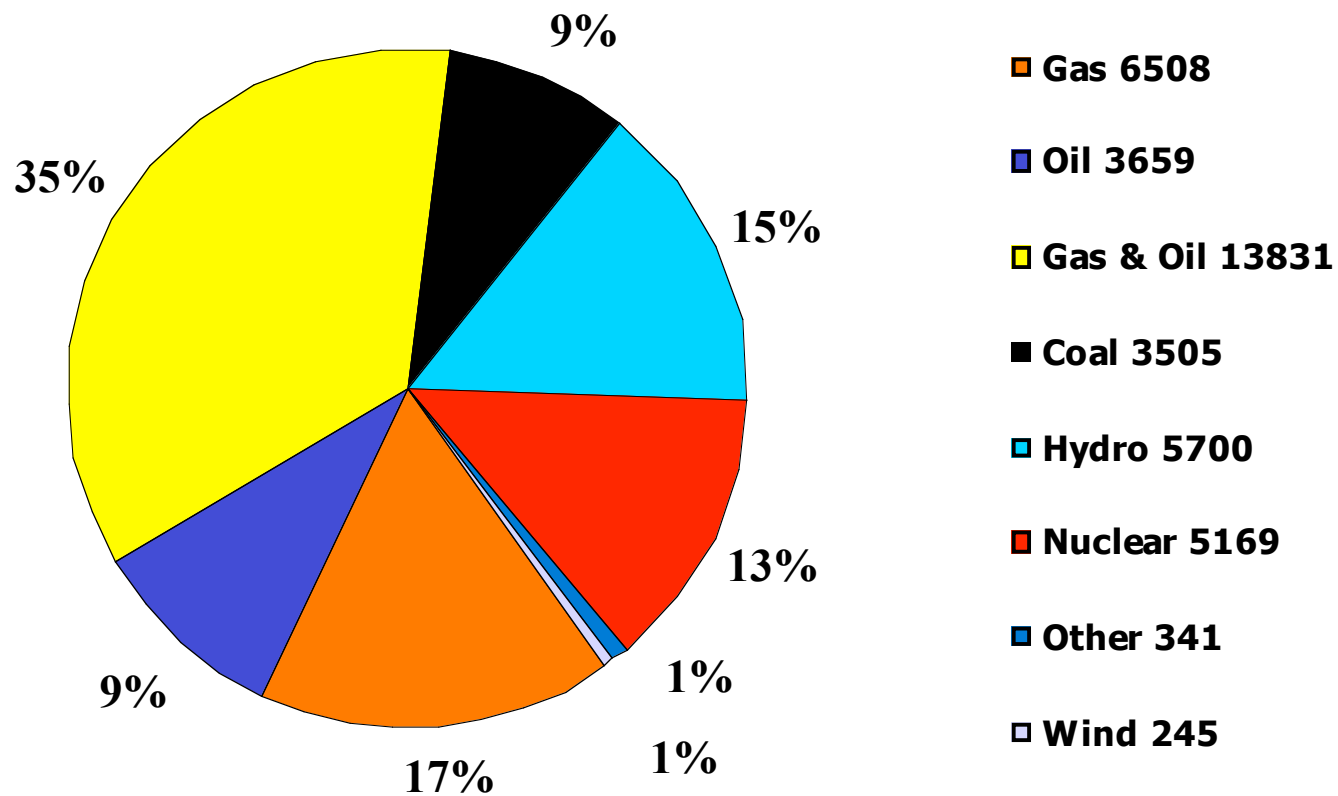
Resource Additions

- Generation: Over 4000MW added since NYISO inception, some “merchant” and some supported by regulated entities and public authorities

| <u>Period</u> | <u>Addition (MW)</u> |
|---------------|----------------------|
| 1985-1990 | 2,004 |
| 1991-1995 | 4,794 |
| 1996-2000 | 303 |
| 2000-2006 | 4,700 |

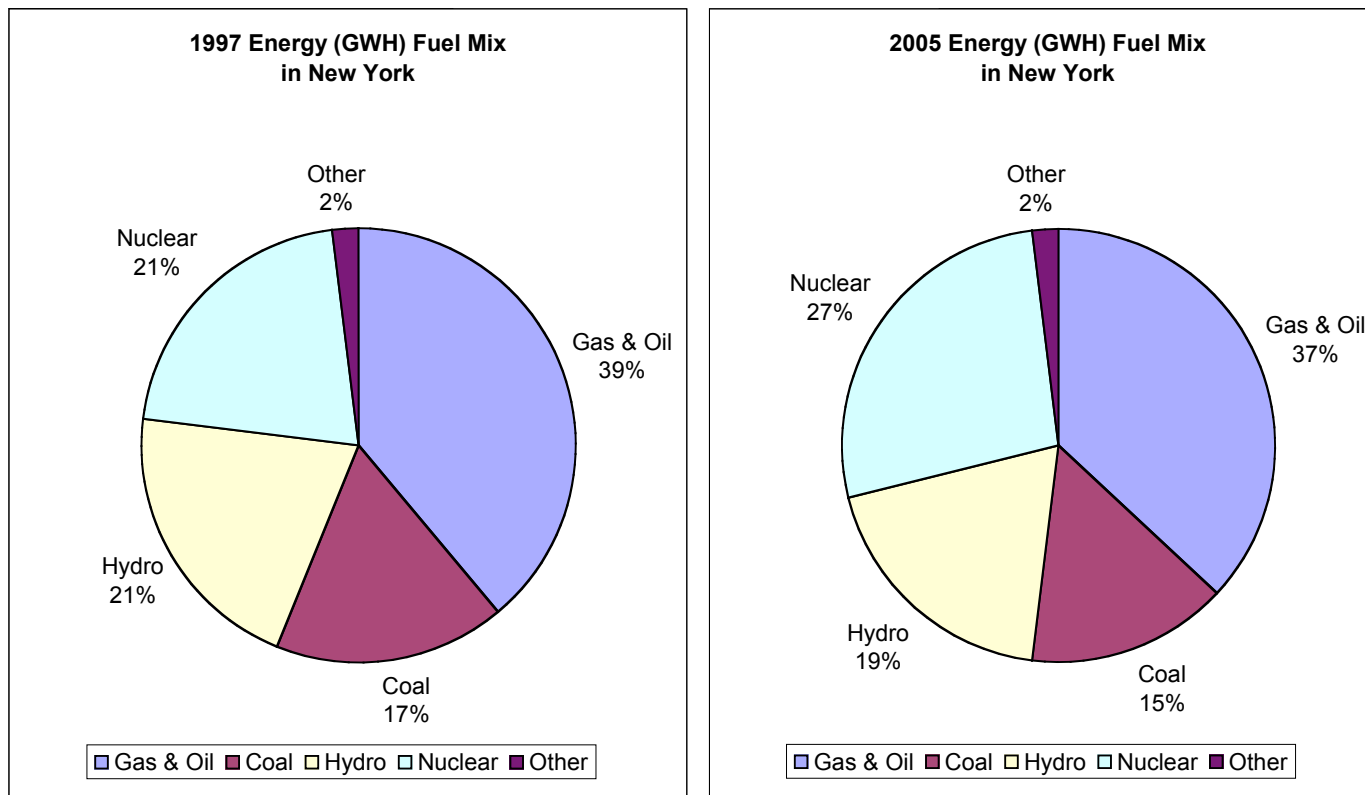
- Transmission: Over 1000MW added or in the process of being added
- Demand Response: Over 1000MW of DSR participating in NYISO SCR program; about 600MW in EDRP program
- Installed capacity imports: Increase of over 1000 MW from neighbors under ICAP market Demand Curve rules
- Actual Peak Load for 2006: 33,939MW on August 2
- NYCA ICAP 2006 requirement:: 39,287MW

2006 Capacity by Fuel Type



Fuel Mix of Generation

Energy Basis



Source: 2005 data from the NYISO.
1997 is from the Energy Information Administration.

Incentives for New Resources

- Incentives for new resources include market price signals and public policy driven “subsidies”
- Market price signals include Locational Based Marginal Pricing for Energy with “Uniform Clearing Price” approach; Locational Installed Capacity Markets with “Demand Curve” construct; and various Ancillary Service markets based revenue streams
- Subsidies include additional utility ratepayer based incentives for renewables, demand side response and clean coal projects
- Provision for regulatory backstop solutions if timely market solutions fail to materialize through the NYISO Comprehensive Reliability Planning Process (CRPP)

NYISO Electric System Planning Process

- NYISO performs bulk system planning studies in New York, with input from transmission owners and market participants
- Planning process consists of “reliability” planning process (CRPP) and “economic” planning process
- Reliability planning is intended to identify bulk power reliability needs
- Economic planning is intended to identify “congestion” in the system; this process is still in the design stage

NYISO Comprehensive Reliability Planning Process

- As a first step in the NYISO CRP process, a “Reliability Needs Assessment” is conducted by NYISO each year to identify reliability needs within a ten-year planning horizon; 2005 RNA issued in Fall 2005; 2006 RNA in progress
- Time permitting, market solutions (Generation, Transmission and Demand Response) are afforded first priority to address identified reliability needs
- Utilities will step in to provide backstop “regulatory solutions” (Generation, Transmission and Demand Response) to meet the reliability needs should market solutions fail to come forward to satisfy the need
- There is provision for ‘alternate regulated solutions’ as well to meet identified reliability needs (i.e. entities other than the ‘responsible’ utility could offer ‘regulated solutions’)
- NYISO issues Comprehensive Reliability Planning Report that includes RNA needs and the solutions offered. First NYISO CRP published this summer

2005 CRP Assumptions

The CRP assumes the following actions:

- Base Case Assumptions
 - Defer retirement of the New York Power Authority's Charles A. Poletti generating unit in Astoria, Queens for one year, from 2008 until 2009.
 - Deploy transmission projects, including upgrades, reactive resource additions and capacity additions (466 MW); import 990 MW of generation from neighboring control areas committed to the NYCA; and implement voluntary demand reduction programs (449 MW). This results in total resource additions of 1,905 MW through 2010.
- Market Response Projects
 - The development of 1,200 MW of merchant generation in New York City and Long Island – the 400 MW Astoria repowering project (NRG Power Marketing Inc.); the 550 MW Oak Point Energy Center (Key-Span Ravenswood, LLC); and the 250 MW Spagnoli Energy Center in Long Island (Key-Span Ravenswood, LLC).
 - The planned resource additions noted above total 3,105 MW.

2005 CRP Findings

- NYISO has determined that sufficient resource additions are planned or under development such that the NYCA can meet reliability criteria for nine years, if the assumptions are realized.
- The risk factors identified include the following:
 - Market based and regulated TO solutions offered should progress as scheduled
 - Absence of ‘one-stop’ New York State siting process for generation facilities could impede construction of new facilities
 - Increased dependence on natural gas as input fuel
 - Increased dependence on capacity resources in neighboring control areas
 - Lack of market based transmission solutions
 - Increased load growth and/or retirement of generation units for economic/environmental factors
- Issues associated with reductions in the system transfer limits that result from more limiting transmission security constraints (voltage problems in the lower Hudson Valley) need to be addressed

Action Steps

- Promote Fuel Diversity
 - Renewables
 - Demand Side Management
 - Clean Coal
 - Address Natural Gas Dependence
- Address Barriers for Facilitating New Resources
 - Review Capacity Market Design
 - Role of Long Term Contracts with Utilities
 - Renew Generation Siting Law
- Maintain Environmental Leadership

Fuel Diversity

Renewables

- NY State goal is to increase renewable energy used in the State to 25% by year 2013 from the current level of about 19%
- Central procurement approach adopted to facilitate renewable projects
 - Utilities collect funds through surcharge on most retail customers and transfer them to NYSERDA, which administers the program
 - NYSERDA enters into financial contracts with developers
- Seven projects awarded contracts in 2005
 - 2006 contracted amount: 821,000 MWh
- Next solicitation to be issued in coming months

Fuel Diversity

Demand Side Management

- NYSERDA administers the State Systems Benefit Charge (SBC) program and reports the following results (7/98-9/05) for the NY Energy Smart Program
 - Peak Demand Reduction: 1000MW
 - Permanent Measures: 377 MW
 - Curtailable Load: 623 MW
 - Annual Energy Savings: 1700GWh
- SBC budget increased to \$175M per year for five years; given the increase in budget, more benefits are expected in the future
- State PSC is promoting more dynamic pricing for end use customers to facilitate Demand Response (e.g., about 1600 MW of large customer load placed on Day-Ahead Market hourly pricing default service tariffs)

Fuel Diversity

Clean Coal Initiative

- Promotion of “clean coal” technology
 - State task force identified “shovel ready” sites for clean coal facilities
 - NYPA to provide \$50M to a private sector “clean coal” power generator who agrees to host new technologies that would allow for CO₂ sequestration
 - NYPA recently issued an RFP to purchase power from 600 MW “clean coal” facility

Fuel Diversity

Address Natural Gas Dependence

- Issues associated with dependence on natural gas resources to support electric generation:
 - Over 90% of generation added since 1990 is gas fired
 - Natural gas/oil on the margin a significant number of hours in the year
 - Bulk power system ability to respond to gas system contingencies becomes more important with increased gas-only generation
- Inter-agency working group examining electric-gas industry relationship
 - Representatives from DPS, NYISO and Utilities and Generators working on two issues:
 - Communications protocols for emergency supplies of gas for generators – would apply in situations where a generator has been dispatched on short notice for electric system reliability reasons but had not procured natural gas due to lack of notice
 - Developing a draft report on areas of concern regarding gas supply for generators – will discuss the current and future availability of natural gas for electric generation in New York

Barriers to New Entry

- Our first preference is for markets to work and merchant solutions to satisfy the resource needs. NYISO and market participants continue to review opportunities for improvement in market rules; specifically
 - ICAP market Demand Curve reset process underway
 - Examination of Forward Capacity Market construct initiated at NYISO
 - Procedures for allocating Long Term Transmission Rights for new transmission investments
 - Harmonize CRP process and market design initiatives
- The NYPSC 2004 Policy Statement allows utilities to engage in long-term contracts to facilitate new entry, if NYISO CRP calls on utilities to engage in ‘backstop’ solutions to satisfy reliability needs
- There is an urgent need to renew the ‘one-stop shopping’ siting law for new generation facilities

Environmental Factors

- Governor Pataki's Executive Order 111
 - Requires all state agencies, departments and authorities to reduce energy use by 35% by 2010 (relative to 1990 levels).
- Regional Greenhouse Gas Initiative
 - Market-based cap and trade program for CO₂ absent any federal program
- Acid Deposition Reduction Program
 - Cap and Trade program for NO_x and SO₂
- Clean Air Mercury Rule
 - Proposed rule for the control of mercury from coal-fired plants
- Facilities Siting
- Emissions Rules for Distributed Generation

Challenges Ahead

- Renewal of one-stop siting process for major generation facilities
- Expansion of Demand Response participation
- Attracting environmentally friendly base load generation facilities through market based mechanisms where possible
- Adequacy of Natural Gas Infrastructure
- Impact of Environmental Initiatives
- Close coordination of planning efforts across regions