New York (NYISO) Electric Regions

Zones:
- Zone A • West
- Zone B • Genesee
- Zone C • Central
- Zone D • North
- Zone E • Mohawk Valley
- Zone F • Capital
- Zone G • Hudson Valley
- Zone H • Millwood
- Zone I • Dunwoodic
- Zone J • New York City
- Zone K • Long Island

This map was created using Patts PowerMap.
Overview

Geography

State covered: New York

Reliability region: New York ISO (NYISO) sub-region of the Northeast Power Coordinating Council (NPCC)

Balancing authority: NYISO

Zones: Capital (Zone F), Central (Zone C), Dunwoodie (Zone I), Genesee (Zone B), Hudson Valley (Zone G), Long Island (Zone K), Millwood (Zone H), Mohawk Valley (Zone E), New York City (Zone J), North (Zone D), West (Zone A)

RTO/ISO

NYISO (established 1999) operates the region’s power grid and wholesale electric markets:

- Energy market: two-settlement (day ahead and real-time) spot market with locational marginal pricing,
- Regional and locational capacity market, and
- Financial transmission rights market.

NYISO 2008 State of the Markets Report

Market Monitor:
Nicole Bouchez – Manager, Internal Market Monitor, New York ISO
David Patton – Independent Market Advisor, Potomac Economics, LTD.

Updated September 1, 2009
RTO/ISO (continued)

Also, market participants trade electricity bilaterally through brokers, the IntercontinentalExchange (ICE) and the New York Mercantile Exchange’s (Nymex) ClearPort, using Zone A (West) as a pricing point.

Generation/Supply

Marginal fuel type: natural gas

Generating capacity (summer 2006): 39,704 MW

Capacity reserve (summer 2006): 5,765 MW

Reserve margin (summer 2006): 17%

The New York City metropolitan area (NYC) and Long Island (LI) are areas of concentrated demand. Both localities have requirements for installed generating capacity that are more stringent than the rest of the region, to ensure reliability of service.

Demand

All time peak demand: 33,939 MW (set August 2, 2006)

In summer of 2006, demand reached record levels on several occasions due to extremely hot weather.

Peak demand growth: 5.6 % (2006-2005)


Load pockets: Zone J New York City and Zone K Long Island
New York Electric Market: Overview and Focal Points

Prices

Annual Average Day-Ahead Price

Zone J New York City
2004: $63.16/MWh
2005: $93.77/MWh
2006: $70.90/MWh

Zone K Long Island
2004: $63.20/MWh
2005: $99.32/MWh
2006: $86.15/MWh

Prices increased in 2005 as a result of disturbances to the natural gas market. Prices declined in 2006 as natural gas storage levels remained above historical ranges throughout the injection season (April through October).
# Supply and Demand Statistics for NYISO

<table>
<thead>
<tr>
<th>Supply Demand Statistics</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Generating Capacity (MW)</td>
<td>38,111</td>
<td>37,548</td>
<td>39,704</td>
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<tr>
<td>Summer Peak Demand (MW)</td>
<td>28,433</td>
<td>32,075</td>
<td>33,939</td>
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<tr>
<td>Summer Reserves (MW)</td>
<td>9,678</td>
<td>5,473</td>
<td>5,765</td>
</tr>
<tr>
<td>Summer Reserve Margin</td>
<td>34%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Annual Load (GWh)</td>
<td>160,211</td>
<td>167,208</td>
<td>166,893</td>
</tr>
<tr>
<td>Annual Net Generation (GWh)</td>
<td>147,170</td>
<td>153,264</td>
<td>NA</td>
</tr>
</tbody>
</table>

Source: Derived from FERC staff discussions with NYISO.

Updated February 2, 2007
# Annual Average Bilateral Prices

## Annual Average Day Ahead On Peak Prices ($/MWh)

<table>
<thead>
<tr>
<th>Market</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>5-Year Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass Hub</td>
<td>$89.87</td>
<td>$69.85</td>
<td>$77.39</td>
<td>$91.55</td>
<td>$46.24</td>
<td>$74.97</td>
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<tr>
<td>Ny Zone G</td>
<td>$92.46</td>
<td>$75.95</td>
<td>$83.51</td>
<td>$100.99</td>
<td>$49.80</td>
<td>$80.53</td>
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<tr>
<td>NY Zone J</td>
<td>$110.03</td>
<td>$85.96</td>
<td>$94.15</td>
<td>$112.63</td>
<td>$55.77</td>
<td>$91.69</td>
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<tr>
<td>NY Zone A</td>
<td>$76.04</td>
<td>$58.70</td>
<td>$64.02</td>
<td>$68.34</td>
<td>$35.54</td>
<td>$60.51</td>
</tr>
<tr>
<td>PJM West</td>
<td>$76.64</td>
<td>$61.90</td>
<td>$71.15</td>
<td>$83.70</td>
<td>$44.60</td>
<td>$67.59</td>
</tr>
</tbody>
</table>

Source: Derived from *Platts* data.

Updated January 8, 2010
New York Electric Market: Last Month's RTO Prices

Daily Average of NYISO Day-Ahead Prices - All Hours

Source: Derived by Bloomberg from NYISO data as reported by Bloomberg. Updated March 5, 2010
Daily Average of NYISO Day-Ahead Prices - All Hours

Source: Derived by Bloomberg from NYISO data as reported by Bloomberg. Updated March 5, 2010
Eastern Daily Bilateral Day-Ahead On-Peak Prices

Source: Derived from "Platts" data.

Updated March 5, 2010
New York Electric Market: Last Month's Eastern Bilateral Prices

Eastern Daily Bilateral Day-Ahead On-Peak Prices

Source: Derived from Platts data.

Updated March 5, 2010
New York Electric Market: Eastern Implied Heat Rates

Implied Heat Rates at Eastern Trading Points
Weekly Averages

Source: Derived from Platts on-peak electric and natural gas price data.

Updated March 5, 2010
Weekly Electric Generation Output and Temperatures
Mid Atlantic Region

Source: Derived from EEI and NOAA data.

Updated March 5, 2010
New York Electric Forward Price Curves and Implied Heat Rates

Source: Derived from Nymex data.

Updated March 5, 2010
Weighted Average ICAP Clearing Prices and Volumes: New York City

Source: Derived from NYISO data.

Updated March 5, 2010
Weighted Average ICAP Clearing Prices and Volumes: Long Island

Source: Derived from NYISO data.

Updated March 5, 2010
Weighted Average ICAP Clearing Prices and Volumes: Rest of New York State

Source: Derived from NYISO data.

Updated March 5, 2010
PJM, NYISO and ISO-NE Capacity Auction Prices

Note: PJM values are for Base Residual Auctions only.
ISO-NE results are based on preliminary FCM auction before pro-rationing and EAS adjustment.
Source: Derived from PJM, NYISO and ISO-NE data

Updated October 7, 2009
Various New York Swap Volumes

Source: Derived from ICE and Nymex ClearPort data. ICE on-peak swaps (financial) volume are for zones A, G and J and include monthly, dual monthly, quarterly, and calendar year contracts traded for each month. Nymex ClearPort on-peak swaps (financial) volume are for zones A, G and J and are traded by month.

Updated March 5, 2010