

New York City, Long Island attract grid projects

ANALYSIS New York City and Long Island have seen several major new transmission lines come into service over the past decade, adding more than 2,800 MW of new import capability. Even as premiums over neighboring regions and other parts of New York have narrowed in recent years, New York City and Long Island remain attractive destinations for transmission developers.

As of the end of 2010, 84% of New York's transmission facilities with voltages of 230-kV or above had entered service before 1980, 13% entered service in the 1980s, 1% entered service during the 1990s and 2% entered service during the 2000s, according to the New York Independent System Operator's 2013 Power Trends report.

But the past decade has seen several new lines built to bring
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Cal-ISO pushes ahead with flexible capacity effort

MARKETS California Independent System Operator stakeholders are debating the ISO's proposed rules for its flexible resource adequacy criteria and must-offer obligation initiative.

The grid operator believes the effort, which will lead to new flexible capacity requirements and bidding rules for generators, is essential to maintain reliability in the face of major changes for generation used in the state over the next several years.

Two state policies drive the need for more flexible resources to maintain reliability, according to the ISO. They are the state's march toward meeting its 33%-by-2020 renewable portfolio standard and generation retirements from California's elimination of once-through-cooling at coastal power plants.

The ISO, market participants and other key stakeholders
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Analysts eye impact from lack of EIA data

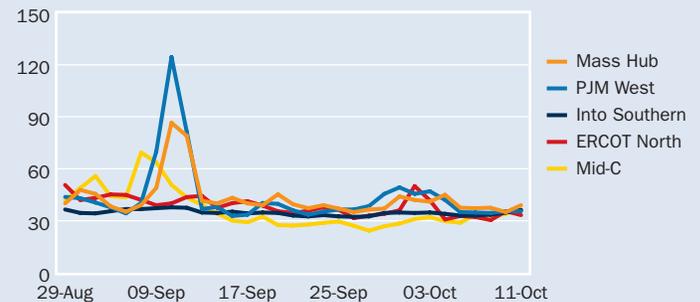
MARKETS As the Energy Information Administration closed its doors Friday amid the government shutdown, analysts were left wondering what impact the absence of EIA's weekly gas storage report would have on the market — and what data can fill the void.

EIA said Friday it would publish no data or analysis until Congress appropriates funds for it to reopen, which likely means there will be no storage report issued Thursday for the week ending October 11 — the first time in its 19-year history that the market-moving data will not be available.

Gelber & Associates' Aaron Calder said that will likely result in a "massive shake-up in the trading week," and that "many in the market want to lock in prices because they do not know how the market will react to a lack of storage data."

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Price trends at key trading points (\$/MWh)



Source: Platts

Low and high average day-ahead LMP for Oct 12 (\$/MWh)

	On-peak low	On-peak high	Off-peak low	Off-peak high
ISONE	35.56	36.67	23.97	24.41
NYISO	22.89	39.56	21.44	27.19
PJM	30.49	36.08	18.55	26.90
MISO	26.88	36.42	10.55	36.26
ERCOT	38.42	66.88	30.13	31.98
CAISO	36.95	38.19	35.09	35.86

Note: Lows and highs for each ISO are for various hubs and zones. A full listing of average LMPs are available for the hubs and zones inside this issue.

Day-ahead bilateral indexes and spark spreads for Oct 14

	Index	Marginal heat rate	@7k	@8k	Spark spreads @10k	@12k	@15k
Northeast							
Mass Hub	39.00	11017	14.22	10.68	3.60	-3.48	-14.10
N.Y. Zone-A	40.00	11215	15.03	11.47	4.33	-2.80	-13.50
PJM/MISO							
PJM West	35.50	10360	11.51	8.09	1.23	-5.62	-15.90
Indiana Hub	33.50	8957	7.32	3.58	-3.90	-11.38	-22.60
Southeast & Central							
Southern, Into	36.25	9824	10.42	6.73	-0.65	-8.03	-19.10
ERCOT, North	33.25	9230	8.03	4.43	-2.78	-9.98	-20.79
West							
Mid-C	36.60	10104	11.24	7.62	0.38	-6.87	-17.74
SP15	42.00	11306	16.00	12.28	4.85	-2.58	-13.73

Note: All indexes are on-peak. Spark spreads are reported in (\$) and Marginal heat rates in (Btu/kWh). A full listing of bilateral indexes and marginal heat rates are inside this issue.

Inside this Issue

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does not make economic sense to operate a unit at a financial loss.

“All of those considerations have led us to the determination that, for 2014, like with Monticello units 1 and 2, we will operate Martin Lake Unit 3 seasonally from June through September.”

The unit is expected to be shut down on or before mid-December. Luminant is working with ERCOT to determine an exact date for seasonal shutdown to occur, Cohn said.

The unit will be available for commercial dispatch by June 1, 2014 in time for the peak demand months in the summer of 2014, Cohn said.

The Martin Lake plant has three units. Units 1 and 2 will continue year-round operations.

ERCOT previously accepted Luminant’s seasonal suspension notices for Monticello units 1 and 2 in Mount Pleasant, Texas, which both have a capacity of 565 MW, and NRG’s notice for its 765-MW natural gas-fired SR Berton plant in Deer Park, Texas. Both were mothballed in 2012, according to ERCOT’s December Capacity, Demand and Reserves report.

Although it approved the seasonal mothball of AES’ 138-MW, coal-fired Deepwater unit in Pasadena, Texas, which was made inactive last year, ERCOT is reviewing a second notice from AES to mothball the same unit since the terms of the request are different. AES also filed with ERCOT to retire a 1-MW unit, which ERCOT will consider in its review.

The standard process is to perform a reliability must-run review to ensure there are no transmission-related reliability concerns associated with taking the units offline, ERCOT spokeswoman Robbie Searcy previously said.

— *Kassia Micek*

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power into the historically congested New York City and Long Island areas.

The Cross-Sound Cable was the first merchant transmission project approved by the Federal Energy Regulatory Commission and began official commercial operations in 2004 after being initially brought into service in the aftermath of the 2003 Northeast blackout. Developed by Hydro-Quebec subsidiary TransEnergie, the 330 MW, mostly underwater high-voltage direct current line runs about 24 miles through the Long Island Sound from New Haven, Connecticut to Shoreham, Long Island.

Long Island saw another major addition in 2007, when the Neptune Regional Transmission System came online. The roughly 65-mile, 660-MW HVDC line runs mostly underwater and underground from Sayresville, New Jersey to Long Island. Neptune RTS was originally developed by a group including merchant developers Anbaric Transmission and Boundless Energy and was selected by the Long Island Power Authority in response to a competitive solicitation.

Another major project on Long Island was the 2008 replacement of the LIPA and Connecticut Light & Power Company cables between Norwalk, Connecticut and Northport in Long Island, which experienced leakage problems and had a high outage rate. The new 138-kV cables run mostly underwater for

about 11 miles and provide about 300 MW of transfer capability.

New York City saw a major addition in 2009, when a subsidiary of General Electric Capital Corporation installed the Linden Variable Frequency Transformer (or VFT), which increased transfer capability between Linden, New Jersey and the Goethals substation in New York City by 315 MW.

Consolidated Edison built a new 345-kV transmission line, called the M29 line, to connect the Sprain Brook substation in Westchester in NYISO’s Zone I with the new Academy substation in New York City, increasing transfer capability by 350 MW. The 9.5 mile line entered service in 2011.

The Bayonne Energy Center, a 512-MW gas-fired generator owned by Hess Corporation and ArcLight Capital Partners, came online in June 2012. Although it is located in New Jersey, the plant directly interconnected to the Gowanus substation in New York City via a 6.5 mile 345-kV underwater cable.

The most recent transmission addition came in June, when the 660-MW HVDC Hudson Transmission Project from Bergen, New Jersey to the West 49th Street substation in New York City came online. The 7-mile line was developed by Hudson Transmission Partners, a partnership of Anbaric, Hudson Power Ventures and Triton Partners that is managed by PowerBridge.

The New York Power Authority signed a 20-year contract for 75% of the Hudson Transmission Project’s capacity after the line was submitted in response to a 2005-2006 NYPA competitive solicitation. The remaining 25% of the line’s capacity was purchased by Con Ed through anchor tenant negotiations and an open season, according to an April 29 filing with FERC (ER11-3017).

High congestion, prices in NYC, Long Island

It is perhaps not surprising that New York City and Long Island have seen so much new transmission development over the past decade. The population density and isolation of the area have historically led to heavy congestion and high energy and capacity prices.

“New York City is such an interesting market,” said Donald Jessome, president and CEO of Transmission Developers Inc., which is developing the proposed Champlain Hudson Power Express line from Quebec to New York City. “Anyone in the industry just has to look at the energy prices and the capacity prices in New York City [to see the appeal]. ... It’s a very attractive market for our shippers, who are generators.”

New York City and Long Island together accounted for about 75,791 GWh of electricity usage in 2012, about 47% of the state’s total usage, according to NYISO’s 2013 power trends report.

This highly concentrated demand has historically led to high levels of congestion in New York City and Long Island.

“Most of the electricity flows in upstate New York are either west-to-east or north-to-south, and all move electricity toward the New York City area,” the Department of Energy said in its 2009 National Electric Transmission Congestion Study. “Because transmission capacity into this area is limited, New York City is an epicenter of transmission congestion and its delivered energy prices are higher than in other eastern load centers.”

Between 2008 and 2012, New York City and Long Island zones

consistently held the top two spots in terms of total dollars paid for congestion in NYISO's 11 zones, according to an August draft of NYISO's 2013 Congestion Assessment and Resource Integration Study. In 2008, for example, New York State saw a total of \$2,611 million in congestion costs, with New York City accounting for \$1,403 million of the total and Long Island accounting for \$624 million of the total, according to the study.

The high demand and congestion has translated into high energy prices for New York City and Long Island. In both 2008 and 2012, NYISO Zone J — which represents New York City — has had the highest average on-peak day-ahead price of the more than 30 North American power markets that Platts assesses.

Accordingly, New York City and Long Island have historically seen significant premiums over prices in neighboring regions.

In 2008, the average price for on-peak, real-time electricity in the New York City zone was about \$109.46/MWh while the average price in the Long Island zone was about \$113.45/MWh. During that year, on-peak real-time prices averaged about \$96.56/MWh in NYISO's Hudson Valley zone and about \$64.13/MWh in NYISO Zone A, which represents the far western portion of the state. On-peak real-time prices in the Public Service Electric & Gas zone in northern New Jersey in the PJM Interconnection averaged about \$91.51/MWh in 2008 while the Connecticut zone in ISO New England averaged about \$92.15/MWh.

New York City has also had very attractive capacity market prices. ISO-NE's first annual capacity auction was held in 2008 for delivery year 2010/2011 and cleared at the floor price of roughly \$147.95/MW-day. PJM's Eastern Mid-Atlantic Area Council zone, which includes New Jersey, cleared at \$174.29/MW-day in the base residual auction for delivery year 2010/2011. Meanwhile, the average of the NYISO clearing prices for the summer 2010 and winter 2010/2011 strip auctions for New York City was \$287.67/MW-day.

Narrowing price spreads

But along with expansion of transmission capability into New York City and Long Island, the past few years have also seen lower overall energy prices and narrowing premiums over other markets.

The average on-peak real-time price for New York City fell from \$109.46/MWh in 2008 to about \$44.54/MWh in 2012 while the average price for Long Island fell from about \$113.45/MWh in 2008 to about \$55.29/MWh in 2012.

While New York City had a roughly \$12.89/MWh premium over NYISO's Hudson Valley zone in 2008 in terms of on-peak real-time prices, that spread tightened to about \$2.49/MWh in 2012. Likewise, New York City's premium over NYISO's far western zone fell from about \$45.33/MWh in 2008 to about \$10.27/MWh in 2012 and its premium over the PSEG zone in PJM fell from about \$17.95/MWh in 2008 to about \$5.61/MWh in 2012.

Likewise, Long Island's on-peak real-time price premium over the Hudson Valley zone fell from about \$16.89/MWh in 2008 to about \$13.23/MWh in 2012 while its premium over the PSEG zone fell from about \$21.95/MWh to about \$16.35/MWh and its premium over the Connecticut zone in ISO-NE fell from about \$21.30/MWh to about \$14.05/MWh.

These tightening price spreads in part reflect lower congestion

costs in New York City and Long Island. The total amount paid for congestion in New York City fell from \$1,403 million in 2008 to \$261 million in 2012, a roughly 81% decrease, while the total amount paid for congestion in Long Island fell from \$624 million in 2008 to \$377 million in 2012, a roughly 40% decrease. The total cost of congestion in the state fell from \$2,611 million in 2008 to about \$765 million in 2012, a roughly 71% decrease.

Edward Krapels, CEO of Anbaric Transmission, said he believes the new transmission lines have had some impact on reducing congestion and thus lowering prices, but that impact is "not dramatic yet" and there are other factors in play. Krapels said other drivers behind the narrowing spread between New York City and the PSEG zone, for example, include across-the-board energy price decreases due to lower natural gas prices, congestion in northern New Jersey and new generation that has come online in New York City in the past few years.

Another complicating factor for transmission developers is that accessing NYISO's capacity market can be a challenge. The Hudson Transmission Project, for example, was subject to and did not pass NYISO's buyer-side mitigation exemption test, meaning it is required to bid in at a set floor price that limits its ability to clear in the auctions. Hudson Transmission Partners is currently challenging NYISO's application of the mitigation exemption test before FERC (Docket No. EL12-98).

While the FERC challenge focuses on the specifics of how NYISO applied its mitigation exemption test to the Hudson

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REQUEST FOR PROPOSALS

People's Electric Cooperative (PEC) has issued a request for proposals (RFP) for up to **75 MW of firm, dispatchable capacity**; up to **50 MW of wind generation**; and up to **15 MW of solar generation**. Each generating resource must be able to begin delivery to the PEC service territory in Oklahoma within the 2016 to 2018 timeframe. PEC will be accepting long-term power purchase agreements, tolls, and asset purchase options.

Bids are due by November 25, 2013. Potential bidders interested in reviewing the RFP can download a copy at www.PeoplesRFP.com.

PEC has retained Burns & McDonnell to act as an independent third-party consultant to assist with this RFP. All inquiries should be made via email to PeoplesRFP@burnsmcd.com.



Transmission Project and whether the project should receive compensation for the reliability benefits it provides if it remains mitigated, Krapels said he believes NYISO's general treatment of transmission in its capacity market is problematic.

"Transmission, especially HVDC, is not generation," Krapels said. "It's a completely different thing. They are treating it as generator lead, when really it is a system to system connection. It doesn't connect a generator in PJM to New York City, it connects New York City to the PJM system. That's why I called the application of their mitigation process to Hudson a category error. The logic of that error is a region like New York cannot build transmission to eliminate a load pocket."

"You wouldn't need a special zone if you had transmission," Krapels said. The capacity zone is a "function of the lack of transmission investment. To me creating a zone is not an appropriate way of dealing with the transmission problem. The appropriate way to deal with that is to build transmission."

Ongoing attraction of transmission

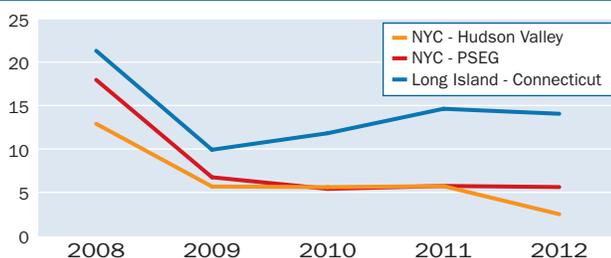
Despite the shrinking energy price spreads and capacity market obstacles, Jessome said he still sees transmission projects into New York City as economically attractive.

"Certainly lower gas prices have been a very important change in the dynamics of the power market," Jessome said. "But those lower costs are still with volatility, in particular in markets like New York City. The fundamentals certainly improved from consumer point-of-view, but we still have a congested market with high capacity needs. And it's growing."

While the average energy spreads may be tightening, Long Island and New York City do still see a relatively high degree of volatility. In the first nine months of 2013, Long Island saw 935 hours with average real-time prices above \$100/MWh, while the Connecticut zone in ISO-NE had 661 such hours, the New York City zone had 573 such hours, the Hudson Valley zone had 487 such hours, the PSEG zone had 98 such hours and the NYISO West zone had 95 such hours.

Long Island and New York City also maintain healthy premiums over other markets in the Platts 20-year M2MS modeled forward curve. New York City's premium over the PSEG zone, for example, averages about \$13.96/MWh between 2014 and 2032 according to the 20-year modeled forward curve, while Long Island's premium over the PSEG zone averages \$25.23/MWh from 2014 to 2032.

Average real-time on-peak price spreads (\$/MWh)



Source: ISO-NE, NYISO and PJM

NYISO expects the most robust load growth over the next decade to come in Long Island and New York City. Total annual energy usage in Long Island is expected to increase by 2,767 GWh between 2013 and 2023 while total annual energy usage in New York City is expected to increase by 2,709 GWh over the same period, according to NYISO's 2013 Gold Book.

The 2013 Gold Book forecast puts Long Island's expected growth rate for total electricity usage between 2013 and 2023 at about 12.3%, the highest for any zone in New York and considerably higher than the state's overall expected load growth of 4.8%. New York City's expected growth rate between 2013 and 2023 is about 5%, in line with the expected growth rates of zones H and I, which include most of Westchester County.

Krapels said that while energy and capacity market spreads can fluctuate, he sees transmission development as long-term infrastructure and thus looks for long-term contracts for Anbaric projects.

"We are much more oriented to RFP or system selection [opportunities] than price spreads," Krapels said. "As soon as you build a transmission line, you impair the price spread."

The difficulty of siting new generation in New York City also makes transmission an attractive alternative, Krapels and Jessome said.

"It's very hard and very expensive to build generation in New York City," Krapels said. "For about the same price as building a generator, you can build a ... transmission line and have a generator in PJM dedicated to New York City. Just the economics make sense."

HVDC technology has also advanced in recent years, allowing higher voltages and much smaller converter station footprints, Jessome said. While developers used to need about 25 to 30 acres for converter stations, that requirement has shrunk down to about 5 acres, making HVDC more feasible in areas like New York City, Jessome said.

More proposed projects

Another major driver in New York is the Energy Highway Initiative, which in October 2012 called for 1,000 MW of AC transmission projects that would increase transfer capacity for power from upstate and central New York into the lower Hudson Valley and New York City. In November 2012, the PSC issued a competitive solicitation for transmission projects to help meet that goal (Case No. 12-T-0502).

As of April, the PSC had received 16 project proposals from six developers, including New York Transco, a coalition of New York utilities and power agencies. In addition to projects in other parts of the state, the responses to the solicitation included two proposals from Boundless Energy for potential transmission capacity additions into New York City.

Boundless Energy proposed the North River Express, a 1,100 MW to 1,600 MW HVDC line running from the Bowline or Ramapo substations in the lower Hudson Valley to the East 13th Street substation in New York City. This company estimated that this project could be online by 2018.

Boundless also proposed converting aging 345-kV lines from

Westchester County to Long Island to HVDC lines. Boundless said this project would increase capacity by at least 2,000 MW and could be in service by 2018.

The Energy Highway Initiative's October 2012 report also recommended that the state's Department of Public Service develop a contingency plan to ensure reliability in the event of the retirement of the Indian Point Energy Center, a 2,040 MW nuclear plant in Westchester county about 30 miles north of New York City. The PSC in November 2012 directed Con Ed and NYPA to develop such a plan (Case No. 12-E-0503).

The PSC in April approved Con Ed and NYPA's plan, which involved seeking proposals for 1,350 MW to 1,375 MW of generation and transmission that could be online by June 2016 while starting initial development on three new transmission projects.

One of those three projects, called the Staten Island Un-bottling project, involves the installation of a new, 1.5 mile 345-kV line from the Linden substation in New Jersey to the Goethals substation in New York City and forced cooling on four existing 345-kV lines in New York City. The expected in-service date for the project is May 2016 and the expected cost is about \$248 million, according to a May filing Con Ed made to the PSC.

Responses to the RFP were submitted between May and July and included Boundless Energy's proposals for adding transmission capability into New York City and the Poseidon project.

Boundless, Iberdrola and Anbaric also proposed transmission projects outside of Zones J and K that they believe would alleviate reliability concerns associated with the potential retirement of Indian Point. The RFP also elicited several proposals for new generation and a proposal for a new battery storage project.

Krapels said he sees the state's involvement in transmission development initiatives as encouraging.

"The Energy Highway Initiative is the best piece of power market policy that's come out of New York in 20 years," Krapels said. "It reflects [Governor Andrew Cuomo's] knowledge and awareness that transmission is infrastructure [and that the state] would benefit a lot from integrating ... with markets around it."

— *Juliana Brint*

Cal-ISO pushes ahead with effort ...from page 1

discussed the flexible resource adequacy criteria and must-offer obligations in a daylong session Wednesday.

The ISO is proposing to set a flexible capacity requirement for each load-serving entity and considering a new must-offer obligation for natural gas-fired units that have flexible capacity but are subject to annual operating limits because of environmental restrictions.

In July, the ISO proposed setting the flexible capacity requirement for each LSE by using its largest three-hour ramp change each month, historical load data and forecasted changes in output by wind, solar and distributed generation.

On Wednesday, Karl Meeusen, the ISO's head of market design and regulatory policy, said the ISO may move to the use of an

average daily maximum three-hour ramp instead of a monthly ramp. When asked why by Western Power Trading Forum consultant Ellen Wolfe, Meeusen said, "Because the load conditions of LSEs do change over the course of a month, we thought this provided a more balanced approach than a particular point in time during a month."

Turning to the potential use of additional renewables information in the flexible capacity allocation, Meeusen told Pacific Gas and Electric representative Peter Griffiths that "dispatchability provisions of variable energy resource contracts" will be taken into account by the ISO.

The must-offer obligations for gas units with environmentally driven operating limits was a focus of the meeting.

For the grid operator, this "use-limited dispatchable gas-fired resource capacity" represents 10.4% or more than 3,200 MW of the flexible capacity adequacy in the state, said the ISO's Carrie Bentley. "When the LSEs go through the RA showings, this number may increase," she added. LSE file monthly and annual RA filings in the state.

For example, the South Coast Air Quality Management District in California has issued operating permits that restrict the number of hours for gas peaking units at 28 power plants in four counties that include the cities of Los Angeles and San Diego, said SCAQMD spokesman Sam Atwood. "All plants can run at the same time and don't have limited hours of operation. However some plants may be limited on the total number of hours they can run annually based on their SCAQMD permits," he said.

Under the ISO's proposed must-offer rules, these use-constrained gas resources would be able to submit a higher flexible capacity bid to account for what they can show would be a higher margin at a later time.

An example of what this opportunity cost approach could mean is that if an economic bid for such a gas-fired resource is \$100/MWh today but would be \$500/MWh in a few days, the ISO would approve the higher cost up to a bid cap of a \$1,000/MWh.

Bentley said an opportunity cost could be deemed as economic withholding under the proposed bidding rules if it is "sufficiently high," the calculation is controlled by the bid supplier rather than the ISO, and it is "leveraged to benefit the supplier's portfolio."

Other must-offer requirements the ISO is contemplating include designating specific hours where solar, wind and thermal generation can provide flexible capacity.

Because the ISO plans to have the flexible resource adequacy and must-offer rules in place for 2015, it wants to complete the stakeholder process by December and submit draft final requirements to the grid operator's board soon thereafter.

— *Martin Coyne*

Analysts eye impact from lack of EIA data ...from page 1

"There are worse times that this could be happening, like in January right in the peak of the heating season," said BNP Paribas analyst Teri Viswanath. Still, she said the lack of solid storage data could be problematic during the shoulder season as well, as changeable weather, pipeline outages and storage facility