generating results

# LYNX ELECTRIC CURRENTS

April 2016

## Editor's Notes:

**Written by Bert Spaeth**

Recent commodity pricing and relatively stable pricing has resulted in complacent purchasing strategies and behavior. Implementing some purchasing strategies, specifically hedging should be considered. Political unrest in the Middle East, recent Supreme Court rulings on energy will impact commodity pricing. In addition, the fall election cycle will change our Executive branch and outcome of a new Supreme Court judge appointment. Most of us have experienced a relatively mild winter. Should above average temperatures continue, new record breaking summer temperatures can result in hefty capacity cost. The most recent mass market pricing changes issued by the NY-PSC mandates fixed pricing and is being litigated by marketing associations. The outcome can be damaging to retail markets. Key components of the PSC changes include: retail pricing not to exceed utility bundled prices, or having 30% renewables energy as part of the energy mix. These changes can be financially ruinous for marketers without a portion of their summer load hedged. Be prepared and check with our staff to ensure you are prepared to meet the new regulations and your business can weather any looming price spikes on the summer horizon. Orange and Rockland Utilities announced the roll out of their DR program. More details can be found under NY State updates. We encourage our customers to participate and improve your cash flow. Lynx EMS can assist with registration for DR programs available from NYISO and utilities such as Con Edison and Orange and Rockland.

## In This Issue

## US Energy

The push for carbon reduction continues as huge gains are realized in new construction. Green structures continue to add billions of square feet while overall energy usage in our buildings continues to decline. Implementation of ASHRAE standards "90.1-2010 P" as of 2015 accounts for saving 1,900 trillion Btu's of energy. Those reductions translate into the equivalent of 328 million barrels of crude oil. It has also resulted in the reduction of carbon emissions by 134 million metric tons. Driving the emission reduction and efficiency improvements includes: more efficient HVAC equipment and controls, more efficient lighting specifically LED, new building and structural materials, improved architectural designs, building envelope construction materials, and improved insulation products. Energy efficiency and carbon reduction will continue as the public becomes more informed with support from government tax credits and utility incentives. Energy management systems that allow peak load reduction backed up with smart meters that allows accurate measurements of usage and financially rewards customers for participating in the various DR programs. Renewable energy, such as solar photovoltaic generation, along with new energy storage technology will have a tremendous impact as our nation continues on the path of reducing carbon emissions. The EPA regulations and the various state compliance orders for carbon reduction are high, but technology, engineering and renewable energy resources can achieve the goals as long as rate payers can afford the upgrades and changes.

The federal government has also addressed water issues with the recent White House Water Summit. As result we have another agency to monitor and address drought, flooding, and water quality issues. The new agency NDRPC (National Drought Resilience Partnership) has been established. This new agency will be part of the Department of Agriculture with participation from: Department of Commerce, Department of Interior, Departments of Energy and Defense, EPA, National Oceanic and Atmospheric Administration and office of Science and Technology Policy. Expected actions include: drought data integration, providing Technical and Scientific information, assessing drought risks, coordinating existing federal programs to support drought resistance strategies, support marked based infrastructure, facilitating development of new technologies and supporting water reuse.

## NYISO Updates

NYISO members Con Edison and Orange and Rockland have initiated a smart grid platform "Advanced Metering Project" that will impact 3.9 million NY customers. The "Advanced Metering Project" will be supported by OMNETRIC and Siemens Energy IP. The utilities selected the vendor team to bring deployment expertise and system integration in order to support various mass customer markets and various DR programs allowing for greater customer participation. Once implemented, it will provide meter data management and support the utility efforts to implement the NY REV objectives. The data management platform allows utilities to meet the challenges of mass markets and support compliance issues of REV. DR programs, Real Time Market pricing, along with renewable energy net metering can be supported with the new metering technologies. It will allow Con Edison and Orange and Rockland to transition into the future, giving the utilities the energy platform called for in the REV program. The NY-PSC has approved the Con Edison Advance Metering Project along with the integration vendors Siemens and OMETRIC. The "System" is expected to be operational in 2017.

## Tip of the Month!

Time is running out for getting your customers enrolled and what is expected to be financially rewarding DR (Demand Response) summer. Applications and registration are due for the summer strip which goes from May 1 to October 31. If you miss the deadlines for March, Lynx can get you enrolled for June through October. The incentive will be based on individual monthly pricing rather than the 6 month summer strip. Depending on the weather conditions the monthly pricing can exceed the strip pricing. Strip pricing reflects a projected average payment for the summer. Our Lynx office has Customer Release forms to get billing history and can walk you through the enrollment process. Our experience shows that generators appear to be the easiest load shedding strategy. However a properly installed EMS (Energy Management System) designed to shed specific loads, can also be effective. Relying on personnel to turn of load during a DR event can work, but relies on key personnel being available during an event. Penalties for non-performance should be considered before deciding on participating. Obviously regions that have both NYISO and utility incentives will net customers the most incentives.

## New York State Updates

Investor owned utility Con Edison serving the NYC region has filed a complaint with the NY-PSC claiming the $1.4 billion it pays in property taxes is not acceptable. The utility stated that their status as a utility makes Con Edison the region's largest tax payer. The utility claims the tax structure needs to change to allow Con Ed to meet state and federal mandates for reliability and carbon reduction. While property tax is an expected cost, tax on equipment is unique to the utility as large commercial and industrial customers are not taxed on equipment. For the utility current practice includes: utility poles, underground cable, substations, and switchgear all considered equipment and are subjected to taxes. Con Edison pointed out neighboring states such as Pennsylvania and New Jersey pay taxes on property only, not on equipment. The utility is asking the PSC to allow the Office of Real Property Tax Services to set the value for Con Edison assets, rather than the NYC municipal assessors. NYC will fight any changes to protect their revenue stream. However lowering energy costs and improving reliability may give business and rate payer's incentives to invest and expand. Con Edison spokesman Allan Drury stated the utility will continue to find ways to lower operating costs for the benefit of their customers in Con Edison and their subsidiary Orange and Rockland Utilities. NYC spokesman Amy Spitalnick has stated "Modifying the property tax system is a complicated issue that cuts across state and city tax laws.

## PJM Updates

FirstEnergy is closing three of its older coal fired plants and will be building transmission lines to maintain sufficient capacity and grid reliability. As a result the utility will be raising prices for the next PJM capacity auction. The timing of the plant closure, not factoring in energy efficiency improvement gained from closing old plants and using more efficient newer plants and new transmission lines were not factored into their proposed price increase. PUCO (Public Utility Commission of Ohio) is looking into the need for corporate separation of generation, transmission, distribution and commodity, which First Energy does not have at the present time. There may also be some concern over market manipulation with the timing of the plant closures, ignoring efficiency savings. The plant closings and building of new transmission lines will cost First Energy ratepayers $4.2 billion. Those costs will be factored into the rate base and recovered in future rate increases.

## FERC Updates

FERC is considering a change in small generator interconnection rules having small generators "ride through" abnormal frequency and voltage abnormalities in the grid. The change would impact generators under 20 MW. Those generators will be required to sign a new SGIA (Small Generator Interconnection Agreement) part of the amended FERC order 792, requiring small generators to operate during grid disturbances as part of the amended interconnection agreement. FERC sites the reason for the changes are needed to maintain grid reliability as the make- up of the generator pool changes from traditional fossil fuels to renewable energy sources, Dg and DR sources. The announcement was filed March 17. Meanwhile FERC is looking for comments before making final rulings. Obviously issues concerning FERC jurisdiction, compensation for small generator participation and penalties for non-compliance will need to be addressed. FERC has also issued concern over having sufficient primary frequency supply. Retirement of baseload synchronous generators is being replaced by renewable generation sources, such as wind and solar which will cause reliability challenges for RTO'S and ISO's. FERC is looking at three changes including:

"Amend the pro forma of Large Generators and Small Generators and Small Generators interconnection agreement to require that all new generation resources have frequency response capabilities as a precondition for interconnection"

"Implement primary frequency response requirements for existing generation resources"

"Establish procurement and compensation mechanisms for primary frequency response"

Comments on the FERC proposal are due in 60 days from the noticed date issued 3/18/2016

## Green Energy REC's (Renewable Energy Credits )

As state mandates are phased in, suppliers or ESCO's will be required to purchase REC's (Renewable Energy Credits) and show documented proof of purchase. Some states require a percentage of Solar REC's or offshore wind depending on the host states social policies. Each category, whether it is called Tier or Class has different pricing and some states mandate a mix. Suffice it to say, Solar is the most expensive and Tier II or Class II is the least expensive. Failure to purchase green energy or AEPS (Alternative Energy Portfolio Standard) or REC's will result in a default REC. PJM customers would pay Alternative Energy Credits (AEP) at $500 per credit. Connecticut has a default rate as well. Lynx will assist you in locating cost effective green REC's to meet your needs. In addition, Lynx can handle your reporting and assist you in purchasing REC's. The percentage of renewable energy is expected to increase up to 27% in certain states by 2025. New York is in the process of developing having some type of REC programs. Governor Cuomo wants the energy mix to contain 50% renewable energy by 2030. The NY REV program appears to be moving towards some type of REC programs as well

Note: To ease the burden of purchasing annually for our ISO-NE and PJM customers, and to minimize the large cash expenditure, Lynx is recommending purchasing REC's on a quarterly basis and avoid higher prices at the end of the reporting period.

## US Energy Markets

The latest USEER (US Energy and Employment Report) shows trends and the impact of energy programs. The analysis looked at the following energy sectors including: electric generation and fuel sources, transmission and distribution infrastructure, energy storage technologies, energy efficiency programs and projects, and transportation including motor vehicles. The report shows that 3.6 million workers are involved with traditional energy areas which includes: production (generators) , transmission and distribution, and energy storage projects. Within those work sectors 600,000 workers are directly involved with low carbon generation such as renewable energy, nuclear power generation, and low emission natural gas generation. Energy efficiency projects account for 1.9 million jobs. Energy related construction projects account for 6.8 million workers, which includes energy efficiency upgrades for buildings. Projects for future jobs are estimated at 260,000 new workers will be needed for 2016 for power generation and fuel sources. David Foster, Senior Energy Advisor on Energy and Industrial Policy at the US DOE states energy efficiency and solar fuel switching power generation will create thousands of new job opportunities. American electric power companies will continue to provide careers in energy sources, power transmission/distribution and renewable energy specifically wind and solar.

## NYSERDA PON Updates

The revised list has added several PON's and dropped PON's: 2568, and 2701. As we indicated last year major changes have been made to NYSERDA PON's. The list below shows the PON programs that have been revised. At least seven PON's have been dropped from the previous month. The emphasis appears to be in electric energy efficiency upgrades and renewable energy. Utilities such as Con Edison are offering incentives for various energy efficiency upgrades so check with your utility before planning any major energy upgrades, As changes and revisions are made Lynx Currents will continue to keep you updated. **If you have a project that requires outside funding such as grants, Lynx staff can assist you.** For our Cond Ed customers we can provide Cummins Generators for DR programs with performance incentives available from Con Ed and NYISO.

Current PON's (Program Opportunity Notices), which are available to qualified customers that pay SBC for NYSERDA programs, are listed below.

- PON 1601 New Construction Financial Incentives: Provides incentives for new and remodeled buildings. Revised 3/1/2016.
- PON 1746 Flex Tech: Provides funding for a variety of feasibility and energy related studies. Revised 3/2/2016
- PON 2112 Solar PV Program Financial Incentive, Revised 10/18/2015, up to 25 kW for residential and up to 200 kW for non-residential.
- PON 2568 CHP Acceleration Program. This PON runs through December 30, 2016, pending availability of funding. These units are pre-engineered CHP systems for NYC area up to 1.3 MW.
- PON 3010 NY Biomass Boilers, Revised 8/7/2015: pays for Biomass fueled thermals through 2018
- PON 3082 NY SUN Commercial/Industrial Incentive Program: Through Dec. 2023
- PON 3221 Solar Thermal Incentive Program This PON runs through 12/30/3028
- PON 3261 Commercial Implementation Assistance Program This PON runs through 12/29/2016

## ISO-NE Updates

Energy storage is being applied on a grid scale in New England's power grid. Maine currently has three projects with a combined capacity of 94 MW expected to be online between 2016 and 2019. Battery storage systems are expected to provide capacity and close the gap for renewable generation such as solar and wind. ISO-NE has released a publication entitled "Energy Storage can Participate in New England's Wholesale Electricity Markets". The publication identifies various storage technologies and describes the path for developers to receive compensation from capacity markets. Historically New England has relied on pumped storage of hydro, using pumps and motors during periods of high volume water flows and using the stored water to produce hydro generated power during periods of low water flow. Future hydro storage faces environmental battles as concern over silt build up and blocking stream and river flows resulting in permitting bans. Storage batteries on the other hand will require housing to protect batteries, maintenance, and capital investment for batteries, inverters and switches to allow changing from DC to AC to feed into the grid. Besides pumped hydro storage, other technologies that are commercially available include: Flywheels producing kinetic energy, compressed air storage, and batteries in electric vehicles that are plugged into the grid. These systems store energy during periods of excess energy capacity and release the stored energy to the grid as needed.

## Energy Engineer Corner

Our staff encounters numerous questions from both IT and energy customers. We have decided to publish several of the more common questions on a monthly basis. So if you have a technical question regarding IT or energy, send us an e-mail and our staff will respond. We will publish select questions each month that may be of interest to our readers. Send questions to: BASpaeth@LynxTechnologies.net.

**Our question for the month:**

**What is the latest update for the NY REV Program?**

There have been numerous committees, meetings and publications as the REV (Reforming the Energy Vision) moves forward. The following goals have been published and put forth by New York, including:

- Making energy more affordable for all New Yorkers
- Building a more resilient energy system
- Empowering New Yorkers to make more informed energy choices
- Creating new jobs and business opportunities
- Improving our existing initiatives and infrastructures
- Supporting cleaner transportation
- Cutting greenhouse gas emissions 80% by 2050
- Protecting New York's natural resources
- Helping clean energy innovation grow

Numerical goals as percentages of change have also been developed and are listed below:

- Reducing of greenhouse gas based on a 1990 baseline by 40%
- Creating 50% renewable energy generator output consisting of wind, solar, hydro, and biomass by 2030
- Decreasing statewide energy consumption based on a 2013 baseline by 2030. That goal will require Energy Efficiency upgrades to reduce statewide consumption by 600 trillion Btu's

Under the NYISO update in this newsletter you can read about a new smart metering called Advanced Metering Project being initiated by Con Edison and Orange and Rockland.

# April 2016

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8<br>NYISO ICAP Monthly Auction | 9 |
| 10 | 11<br>NYISO ICAP Monthly Auction | 12 | 13<br>NYISO ICAP Auction Results | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21<br>Certification | 22 | 23 |
| 24 | 25<br>NYISO ICAP Spot Auction | 26<br>NYISO ICAP Spot Auction | 27 | 28<br>NYISO ICAP Auction Results | 29 | 30 |

## Future Dates

**May:**
9 & 10 NYISO ICAP Monthly Auction
12 Monthly Auction Results
20 Certification
24-25 NYISO ICAP Spot Auction
27 Spot Auction Results

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## Commodity Pricing

### *Historical - Flat DAM*

| | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Apr-16 |
|---|---|---|---|---|---|---|
| NYISO-A | 22.92 | 18.61 | 21.19 | 16.96 | 20.37 | 28.66 |
| NYISO-F | 23.37 | 21.93 | 37.10 | 30.57 | 22.19 | 28.47 |
| NYISO-J | 23.34 | 20.24 | 35.04 | 29.61 | 20.75 | 28.04 |
| NYISO-K | 28.83 | 23.87 | 40.86 | 33.08 | 21.85 | 29.33 |
| PJM-PSEG | 21.99 | 19.44 | 28.99 | 25.02 | 18.63 | 22.39 |
| PJM-JCPL | 21.57 | 18.79 | 27.55 | 23.31 | 18.26 | 21.49 |
| PJM-APS | 27.39 | 24.94 | 30.31 | 27.56 | 25.45 | 29.31 |
| PJM-PECO | 21.01 | 18.65 | 26.85 | 22.85 | 18.02 | 21.41 |
| PJM-PPL | 21.30 | 18.88 | 27.32 | 23.23 | 19.14 | 21.97 |
| PJM-DLCO | 26.26 | 23.84 | 27.57 | 25.30 | 25.06 | 27.85 |
| PJM-PENELEC | 24.23 | 22.10 | 27.92 | 25.38 | 22.95 | 26.19 |
| PJM-METED | 21.32 | 18.53 | 27.12 | 23.02 | 19.14 | 21.78 |
| PJM-BGE | 35.26 | 33.97 | 40.37 | 37.36 | 31.62 | 38.69 |
| ISONE-CT | 27.81 | 22.26 | 38.35 | 29.89 | 20.58 | 31.01 |

### *Current Projections*

| | May-16 | Jun-16 | Jul-16 | May-16 to Apr-17 | | |
|---|---|---|---|---|---|---|
| | Flat | Flat | Flat | Flat | Peak | Off Peak |
| NYISO-A | 25.96 | 27.67 | 35.26 | 32.16 | 42.98 | 22.79 |
| NYISO-F | 23.88 | 26.16 | 31.58 | 35.90 | 42.37 | 30.30 |
| NYISO-J | 26.07 | 29.35 | 36.01 | 37.10 | 44.82 | 30.42 |
| NYISO-K | 43.83 | 43.73 | 51.40 | 48.62 | 57.31 | 41.09 |
| PJM-PSEG | 23.86 | 25.33 | 33.13 | 31.45 | 37.91 | 25.85 |
| PJM-JCPL | 23.50 | 24.83 | 32.41 | 30.67 | 36.86 | 25.31 |
| PJM-APS | 29.02 | 30.41 | 37.50 | 34.67 | 40.96 | 29.24 |
| PJM-PECO | 22.65 | 24.51 | 31.78 | 29.97 | 36.01 | 24.75 |
| PJM-PPL | 23.00 | 24.73 | 31.98 | 30.02 | 36.08 | 24.77 |
| PJM-DLCO | 28.07 | 29.14 | 34.65 | 32.06 | 37.43 | 27.42 |
| PJM-PENELEC | 27.41 | 29.18 | 36.40 | 33.15 | 39.55 | 27.61 |
| PJM-METED | 23.30 | 24.98 | 32.27 | 30.16 | 36.25 | 24.89 |
| PJM-BGE | 38.17 | 40.59 | 49.35 | 44.26 | 52.50 | 37.14 |
| ISONE-CT | 27.93 | 30.47 | 38.58 | 39.53 | 46.34 | 33.63 |

## Glossary of Acronyms

**ABACCUS** - Annual Baseline Assessment of Choice in Canada and the US

**AEC** - Alternative Energy Credits

**AEPS** - Alternative Energy Portfolio Standard

**CRP** - Comprehensive Reliability Plan

**DEFG** - Distributed Energy Financial group

**DER** - Distributed Energy Resources

**DG** - Distributed generation

**DR** - Demand Response

**LNG** - Liquid Natural Gas

**NEPOOL** New England Power POOL

**REC** - Renewable Energy Credits

**REV** - Reforming Energy Vision