generating results

LYNX ELECTRIC CURRENTS

March 2016

Editor's Notes:

Written by Bert Spaeth

It appears bureaucracies are setting the laws and ruling by agency orders and dictates. Missing is the deliberation and debating process of the legislative branch. While time consuming, debate and deliberation is needed for a democracy to function. Bureaucrats and the various government agencies use acronyms and volumes of legalese in their orders as the rush orders through to implementation, not analyzing the cost or practicality of implementation, or full impact on the public. It is refreshing to see the recent US Supreme Court rulings on energy. In one case, the Supreme Court overruled the US Lower Court of Appeals decision over FERC Order 745. The result is that the various states, ISO's and RTO's can now move forward implementing the programs needed to improve infrastructure and install new DR and DG technologies. Another order known as the EPA CPP (Carbon Power Plan) received a STAY for two years, giving the new administration in 2017 time to perform an economic analysis on the cost benefits of CPP. The most recent energy issue involves the federal government pushing the Obama Paris Agreement, which calls for drastic reduction in carbon emissions to curb "Global Warming" and "Climate Change". It is estimated this treaty will cost $12.1 Trillion dollars over the next 25 years to fully implement per administration figures. According to Bloomberg New Energy Climate, that estimate is low and their analysis indicates an additional 75% increase will be needed over the original estimated cost. In order to limit global temperature increase to 3 degrees Fahrenheit, $5.2 Trillion more will be needed. Again, this is another example of an ideology dictating policy without Congressional, approval costing the taxpayers Trillions of dollars.

New York-PSC, in their new mass market retail order is another example of bureaucrats and their reams of legalese and acronyms rushing to implement an order without sufficient research on the impact to consumers or the practicality of implementing the order. The order in question is entitled: "Resetting Retail Energy Markets and Establishing Further Process". State Senator John De Francisco addressed his concerns and asked for a 60 day delay in a letter to Chairman Audrey Zibelman dated March 3, 2016. In that letter the senator raised some valid concerns including:

- Contractual legal obligations between suppliers, generators, and customers
- Potential lost revenue for NY Income taxes
- Timing of notifying utilities, marketers, and customers dropped from the retail program
- Customers losing value added services and the impact on existing contracts for those services
- Anti-competitive nature of the new regulations in this order

It would appear the legislators, and not administrative agencies should be passing fully vetted laws of policies having such a large financial impact on all segments of the economy. Once again, the courts were called on to stop the implementation of government agency orders. The NY Supreme Court has issued a stay order giving the PSC more time to resolve issues and potential problems.



In This Issue

US Energy

A $33 million dollar initiative by the US DOE (Department of Energy) is underway regarding DG (Distributive Energy) programs. The objective of the DOE project is to develop distributive generation energy resources and integrate new technologies with the grid. ARPA (Advanced Research Project Agency-Energy) is the branch of DOE tasked with developing DER (Distributive Energy Resources), networking through NODES (Network Optimization Distributive Energy Systems). The intent is to develop systems that improve grid efficiencies, reduce carbon emissions and reduce energy delivery costs. One such program is a PEM (Packetized Energy Management). A pilot project is being management by the University of Vermont currently. Electric loads such as water heaters or air conditioners are being treated as a regulated reserve power source. The grid will turn on and off such resources depending on real time grid load and use the appliances as a virtual power plant. Appliances would check with the grid at 5 or 10 minute intervals to see if they can operate or not. Consumers would provide parameters or tolerances for appliance operation. The concept can be used for a variety of electric loads. In addition to previously mentioned water heaters and air condition units, the technology can also be used for charging electric vehicles, a variety of heating loads, battery charging loads and commercial chillers and refrigeration units. The system requires sufficient bandwidth and system operators for communicating between appliances and the grid, creating a virtual power plant. Signals would be in real time allowing peak limiting DR with a rapid response time.

NYISO Updates

New York wind power continues to play an ever increasing role in the NY power mix. NYISO's latest news release indicated wind power set a new output record in January producing 1,571 MW delivered into the grid. That record represents 9% of the state's energy capacity that day. It also set a new milestone of available production of 90% of the 1,746 MW of rated installed windmill capacity.

Tip of the Month!

*** REMINDER ***

Lynx is working to keep our customers informed regarding the residential and small commercial market rulings handed down from the NY State PSC. We will inform you of any changes resulting from the NY State Supreme Court proceedings and changes or impacts on the PSC Rule. Such changes can have huge impacts on mass markets for residential and small commercial customers. We can also help you develop a fixed price guarantee product or assist you with qualifying for the 30% Renewable Energy option allowing you to continue in the mass markets.

"Peaking Units" can be turbines, reciprocating engines, natural gas, diesel, oil or some dual fuel combination. The key is rapid start up and availability as needed to maintain sufficient capacity during periods of high demand. Typical installations cost in the range of $1,000 to $2,000 per kW. DG/CHP units which utilize waste engine thermals for heating or cooling are in the $3,000 per kW range. Demand Response providers enrolled in SCR (Special Case Resources) typically require some type of air emission permitting. Variables that impact permitting include: type of fuel such as natural gas, diesel, oil or dual fuel, also type of engine whether turbine, combined cycle, or reciprocating engine. The horsepower or kW size will also impact air emissions. Pollution control system like catalytic convertors and the zone location of the power plants can also factor into air permits. Another factor is how the generator is used, which determines the annual run hours. Will the generator be a stand-by, a peak shaving unit, a baseload generator or a generator used for SCR demand response purposes? Check with you local municipal governments, and the state DEC to determine what will be needed for air permits before you install the generators. That will help you decide what type of engine and fuel source you use.

New York State Updates

Following an industry wide review of residential retail power sales the NY-PSC stressed zero tolerance for deceptive and unscrupulous ESCO's. Governor Cuomo has called for immediate audits of residential and small commercial accounts participating in retail energy markets. In addition to the audit, a freeze has been ordered for enrolling any new customers in the mass market retailer power programs. A mechanism for revoking ESCO market participation is been developed, which would allow state regulators to remove ESCO's in violation of the retail regulations. ESCO's in the larger power sale markets will be required to guarantee cost savings compared to utility bundled rates. The other option is having a generator fuel mix that includes 30% renewable energy generation. ESCO CEO's will be required to submit written notification that their company is in full compliance with the new rules.

The changes will impact the approximately 200 ESCO's currently operating in the NY retail power sales. These ESCO's are providing over 20% of the energy supply to NY customers. "Consumer Protection Practices to "Stop Deceptive Business Practices" are now in place. However the follow up plan of banning new retail power sales to Mass Market residential and small commercial customers has a court ordered stay to give the NY-PSC more time to work out the details.

Questions regarding existing contractual obligations, valued added programs for customers and financial obligations for fixed pricing, paying for DR, interval meters and DG programs remain to be resolved. State ESCO's have established a preliminary defense fund to litigate the NY-PSC order.

PJM Updates

PJM is supporting member states in an effort to comply with the EPA's CPP (Clean Power Plan). Between Feb 2016 and the target date of 2030, EPA expects a 36% reduction in carbon emissions using 2005 as a base. With heavy reliance on transmission lines to balance distribution of clean power and maintain reliability. Each state is required to present their plan for compliance with the CPP order from the EPA by September 2016. Previous EPA regulations for mercury and MATS have already resulted in the closure of older noncompliant coal power plants. Must run orders are being issued by state regulators with FERC support to keep economically inefficient nuclear generating plants operational to meet the carbon emission reduction goals.

Meanwhile large MW wind farms in the Midwest are being constructed. Transmission lines will be required to move clean renewable power from the Midwest to the PJM grid. Geography plays a major role in the location of clean energy generation sites for example: the Midwest or Eastern offshore for wind energy, locations near rivers or regions with access to abundant biomass resources. New clean power with offshore power will require distribution to bring the wind generated power onshore to tie into the grid and dense population centers in the eastern seaboard. PJM will review the state plans to comply with the EPA CPP this fall to finalize distribution plans. That information will allow PJM to make sure their transmission system can maintain reliability and move clean power from the generation source to areas of high demand.

Meanwhile the Supreme Court order for a STAY on the implementation of CPP PJM gives time to make cost effective compliance decisions. PJM will continue to provide their member states with detailed analysis regarding generation fuel mix, emissions standards and additional infrastructure resources including new transmission lines and renewable energy sources. The PJM analysis will evaluate the potential effects of CPP and provide sufficient data for member states planning for the future in light of the STAY order and EPA mandates being litigated.

FERC Updates

Satisfied with the Supreme Court ruling FERC commissioners have no plans to revisit Order 745. The original lawsuit was over FERC Order 745 that has RTO/ISO's paying the same amount per kW for DR resources as generator resources. While DR resources are called on when the grid reaches a predetermined threshold, prime power generators are expected to provide continuous power for the grid. FERC Commissioners agreed that the Supreme Court ruled correctly by overriding the US Lower Court of Appeals. Former FERC Commissioner Philp Moeller disagreed with the court ruling recommending DR providers be paid LMP minus Generator costs. That would represent the retail price of electricity, claiming that would be more equitable. Former FERC Chairman Jon Wellinghoff stated LMP represents the service provider investment costs, rather than the provider's production cost per kW.

Despite the continued debate over DR pricing, RTO/ISO's are no longer hindered in their DR program implementation. The states are now free to develop and implement their DR programs as providers can make financial commitments for DR projects knowing they will be compensated at LMP prices.

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.

ISO-NE Updates

Reacting to the Supreme Court ruling regarding FERC Order 745, ISO-NE is moving ahead with DR (Demand Response) programs that have been delayed pending court rulings. ISO-NE CEO Gordon van Welie welcomes the ability to move forward with DR programs, allowing DR providers the ability to participate in Day-ahead and Real-time markets just like generators. The DR providers will also be eligible for ISO-NE "Pay for Performance" incentives ensuring participation needed to maintain grid reliability. Two types of DR resources are being utilized, namely active demand response which involves load shedding or operating back-up generators and secondly, energy efficiency upgrades which are called passive demand that lowers overall peak demand. At the present time ISO-NE has 420 MW of Active Demand Resources and 1,675 MW Passive Demand Resources. Future plans will expand the role of DR with full integration into the energy market as the logistics of new

NYSERDA PON Updates

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 2701 Combined Heat and Power CHP Performance Program through Dec. 2016. Revised 1/16/2015
- 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

US Energy Markets

Recent Supreme Court decisions have reinforced DR programs by upholding FERC's Order 745 and placing the EPA CPP plan on HOLD. The ruling confirms FERC's authority to regulate interstate wholesale power reinstating the validity of DR programs over RTO/ISO's across the nation. This will impact 70% of the states that have some form of deregulated power. The other 30% not deregulated, can set their own standards and policies for DR programs. Many state programs have been on hold pending the Supreme Court decision ruling on FERC's authority regarding pricing for DR programs. With the court's ruling, state regulators can now move ahead developing tariffs, rules and programs to implement and fund DR programs to meet state power and reliability needs.

The other Supreme Court ruling applies to the STAY placed on the EPA CPP (Carbon Power Plan) imposed by the EPA. That EPA program would have resulted in draconian measures impacting power generation, transportation, construction efficiency codes and new appliance standards. Hundreds of GW of coal fueled power plants would have been closed causing grid reliability and severe economic hardships in coal mining states.

New technologies such as smart meters are being deployed as an estimated 50 million meters are already installed nationally. Smart meters will allow some type of TOU (Time of Use) pricing tariffs that can help decrease peak demand using electric commodity pricing signals. The objective of TOU rates and using smart meters is to use real time price signals to change energy consumption patterns, thereby lowering peak demand on the grid. Consumer reluctance and skepticism is an obstacle to acceptance for many costumers. DR can be a powerful tool to reduce grid peak demand and provide economic benefit to participating consumers while helping to keep energy costs in line. Energy efficiency measures will reduce carbon emissions and can also reduce peak demand.

The two Supreme Court rulings are a win for US consumers and will encourage private sector investment in DR programs, bringing the desired outcomes of reliability, lower carbon emissions and economic benefits for the US consumers.

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 status of the PSC Order "Resetting Retail Energy Markets and Establishing Further Process"?

With the recent NY Supreme Court CPLR (Civil Practice Law and Rules) Article 78, petitioners comprising of many NY ESCO's involved in mass markets are filing papers and establishing a legal fund to challenge the NY State-PSC, sitting violations of Civil Practice Law and Rules : 6301,6311,6313 and Article 78.

Meanwhile all parties working on behalf of the PSC have a "Restraining Order" pending future court action. Petitioners will need to present their grievances, claiming "the PSC is in violation of unlawful procedures, their ruling is arbitrary and capricious" also an abuse of PSC discretionary powers".

Furthermore petitioners claim the PSC violated petitioner rights under the New York State Constitution. We will issue a Lynx News Flash to keep you informed as news breaks. If have If you need additional information call our LYNX EMS office at 716-774-1341

March 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10 NYISO ICAP Monthly Auction	11 NYISO ICAP Monthly Auction	12
13	14	15 NYISO ICAP Results	16	17	18	19
20	21	22	23 Certification	24	25 NYISO ICAP Spot Auction	26
27	28 NYISO ICAP Spot Auction	29	30 NYISO ICAP Summer Auction	31 NYISO ICAP Summer Auction		

Future Dates

April:
8 & 11 NYISO ICAP Monthly Auction
13 Monthly Auction Results
21 Certification
25-26 NYISO ICAP Spot Auction
28 Spot Auction Results

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Commodity Pricing

Historical - Flat DAM

	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16
NYISO-A	26.18	22.92	18.61	21.19	16.96	20.37
NYISO-F	26.27	23.37	21.93	37.10	30.57	22.19
NYISO-J	27.68	23.34	20.24	35.04	29.61	20.75
NYISO-K	35.20	28.83	23.87	40.86	33.08	21.85
PJM-PSEG	25.41	21.99	19.44	28.99	25.02	18.63
PJM-JCPL	25.14	21.57	18.79	27.55	23.31	18.26
PJM-APS	30.58	27.39	24.94	30.31	27.56	25.45
PJM-PECO	24.62	21.01	18.65	26.85	22.85	18.02
PJM-PPL	24.95	21.30	18.88	27.32	23.23	19.14
PJM-DLCO	29.51	26.26	23.84	27.57	25.30	25.06
PJM-PENELE	28.53	24.23	22.10	27.92	25.38	22.95
PJM-METED	25.06	21.32	18.53	27.12	23.02	19.14
PJM-BGE	38.81	35.26	33.97	40.37	37.36	31.62
ISONE-CT	35.78	27.81	22.26	38.35	29.89	20.58

Current Projections

	Apr-16	May-16	Jun-16	Apr-16 to Mar-17		
	Flat	Flat	Flat	Flat	Peak	Off Peak
NYISO-A	23.46	24.91	27.39	31.40	42.33	21.87
NYISO-F	21.45	22.63	25.90	34.94	41.21	29.46
NYISO-J	22.16	24.45	28.90	36.09	43.71	29.44
NYISO-K	33.59	42.21	43.28	47.82	56.39	40.35
PJM-PSEG	22.11	23.38	24.17	30.28	36.66	24.72
PJM-JCPL	21.54	22.84	23.65	29.30	35.41	23.97
PJM-APS	26.94	28.09	29.44	33.47	39.58	28.15
PJM-PECO	20.48	21.81	22.63	28.35	34.25	23.21
PJM-PPL	20.87	22.20	22.96	28.43	34.25	23.36
PJM-DLCO	26.11	27.10	27.93	30.88	36.04	26.39
PJM-PENELE	25.16	26.48	28.41	32.19	38.43	26.75
PJM-METED	20.97	22.30	23.31	28.63	34.46	23.54
PJM-BGE	34.85	36.24	39.44	42.70	50.78	35.65
ISONE-CT	28.07	28.27	31.21	39.20	46.02	33.25

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