



Energy Outlook

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Looking Back on a Successful 2012

As Energy New England approaches its 15th year in business, we want to acknowledge and send our thanks to our growing list of customers within the energy sector and the public power community particularly. Our continued growth - and success - is a result of the partnerships we have worked hard to forge and sustain with municipal utilities throughout the region.

In 2012, ENE experienced a solid year and many achievements are worth highlighting.

For our power supply organization (Wholesale), some \$350M in structured transactions was executed over the past year. Of particular note, we were able to structure a large transaction for a group of 17 public power entities throughout New England. This contract provides all the benefits of a high-efficiency, gas-fired combined cycle generator at a fraction of the cost of building one. The transaction provides competitive pricing in all market environments, saves the buyers more as market prices increase and provides very low cost energy when the market is low. Flexibility was a key objective, and we are able to provide our municipal system buyers an ability to competitively position a significant portion of their portfolios into the next decade.

ENE was able to negotiate contract terms with Patriot Renewables, LLC that will allow a number of ENE's municipal clients to provide their customers with green power at a competitive price. The Maine-based wind project will generate enough electricity to power nearly 9,600 homes annually. In addition to the energy, the municipal light plants will receive Capacity and Renewable Energy Certificates (RECs) from the project during the life of the 15-year contract term. Spruce Mountain Wind, a 20-megawatt (10, 2MW units) project located in Woodstock, Maine, is providing renewable, carbon-free power to the 13 municipal light plants that agreed to the long-term Power Purchase Agreement (PPA).

Also in 2012, ENE hosted municipal utility wholesale customer forums in Foxborough, which included presentation on the current state of energy, capacity and REC markets and ways to value long-term renewable resource purchases. The session was well received with more than a dozen systems in attendance. Other sessions included discussion on issues before FERC and ways to value long-term energy resource options incorporating the energy and capacity markets, as well as natural gas and emission value implications.

On the retail side of our business, ECHOSM also had several significant accomplishments. In the first half of the year, ECHOSM, in support of Wallingford Electric's largest accounts, successfully deployed approximately 15 of its proprietary demand dashboards (ECHOSM Analytics) as part of a key account program. Through ECHOSM Analytics, the utility's largest accounts (which covered a range of industries) are able to monitor and manage their demand on a real-time basis. Several customers, including Holo Krome Industries, have attributed significant demand reduction and energy savings as a consequence of the insights provided by this proprietary service.

Additionally, this past summer Taunton Municipal Light Plant completed its one-year pilot using ECHOSM Analytics to support demand reduction goals among a small group of industrial accounts. As a consequence, these accounts were able to quantify a savings of approximately \$175,000 over just one year's time.

ECHOSM's Brokering Services Division had a successful 2012, as well. In addition to securing several million in energy efficiency sales in two states, retail brokering continued its upward sales trajectory. At year end, the division boasts nearly 140M kWh under contract, an increase of some 14% over the 123M kWh under contract at the end of 2011. Further, nearly a dozen municipalities were secured in CT and MA totaling some 23M kWh. Equally important was a notable increase in the number of consulting projects for the division with projects ranging from RFP management to supplier services and renewable energy projects.

For Conservation Services, ECHOSM performed over 1,000 residential audits for more than 20 municipal systems, and several Advisory Committee forums were held for our municipal system customers. ECHOSM also provided ASHRAE Level I & II audits for numerous public power systems, as well, including 20 municipal buildings in Wallingford, CT. Additionally, more than 20 engineering studies were conducted of water and waste water facilities in Massachusetts serviced by National Grid. Nearly 50 such engineering studies have been performed by ECHOSM over the past two years on behalf of National Grid.

Promoting Conservation through Behavior Modification

ECHOSM, the sustainability enterprise of Energy New England, LLC, has recently announced a new service designed to promote energy conservation and sustainability within the educational community. Called the Sustainable Schools Program - or SSP - this initiative builds upon ECHOSM's extensive experience in the energy industry, its current municipal customer base (which includes dozens of public schools throughout the region), and the enterprises' recognized leadership in the energy and water conservation fields. A fundamental premise of SSP is to increase awareness and understanding of conservation and sustainability practices, and to modify behavior at primary and secondary campuses. Municipal utilities throughout the region can leverage ECHOSM's SSP as a way to bring a unique set of solutions to the educational communities within their towns. Several public power systems have expressed an interest in helping to bring this program to schools located within their franchise.

The United States Environmental Protection Agency (EPA) estimates that an active energy conservation program can reduce a facility's annual energy consumption by as much as 30%. Behavior is often the most critical factor in any energy management plan. Accordingly, the focus of SSP is to educate, empower and equip students and staff as a way to maximize energy conservation and to promote environmental stewardship. The program works with the school district to create a sustainable student group and further seeks to promote sound environmental practices through the adoption of an effective energy policy, including benchmarking; energy audits; conservation campaigns; and more. Moreover, the SSP recognizes the constraints, including financial, that many school systems face. The good news is that SSP is not capital intensive, and services can be unbundled, too. Indeed, ECHOSM staff has successfully implemented like-minded programs in over 1,000 schools in the U.S.

“Behavior is often the most critical factor in any energy management plan.”

In addition to the holistic services outlined, SSP can also provide schools with proprietary diagnostic tools (e.g., ECHOSM Analytics) that enable the school to monitor and manage electric and potentially natural gas usage on a real-time basis. Benchmarks and goals can be established, and separately metered buildings can be compared and the data aggregated. This dynamic array of solutions can help the educational community contribute to the efficient, equitable and productive use of our world's resources.

For more information on ECHOSM's Sustainable Schools Program, please contact Gene Medley at gmedley@echo4us.com or call 508-698-1255.

ECHOSM Bolsters Professional Team

Given the increasing sophistication of ECHOSM's demand-side management portfolio, the sustainability enterprise of Energy New England has secured several talented individuals to support its mission. Among some of our newest face...

Colby May is the newest addition to our team and comes to us as a Certified Energy Manager (CEM). For the past 10 years, Colby has been working in partnership with over 1,000 K-12 educational facilities, universities, hospitals and municipalities in the provision of various demand-side management services. These services include ASHRAE level II energy audits, utility bill analyses, behavior-based energy conservation and more. Colby will be based in Eastern Massachusetts and he will be instrumental in the marketing and delivery of ECHOSM's Sustainable School Program.

Gene Medley comes to us from Rise Engineering. A LEED AP, Gene offers many years of project management experience and she now serves as Manager ECHOSM's Enabling Technology offerings. Under her leadership, ECHOSM's proprietary load monitoring service, ECHOSM Analytics, has been deployed to more than 20 facilities in two states. Gene has also achieved a CDT designation (Construction Document Technologist) and also offers considerable experience in web development, database management and business programming. She has also received numerous awards for her work, and she is currently working with several municipal systems in the ongoing deployment of Echo Analytics and wireless energy management systems.

Josh Zaentz is dedicated to ECHOSM's Commercial and Residential Energy programs. ECHOSM continues to offer both ASHRAE level I and level II Commercial Energy audits which often utilize building energy modeling software. Through Josh's efforts, these modeling studies have led to utility approval and participation in major energy efficiency projects. Also through Josh's efforts, the Residential Energy program is scheduled to begin working in partnership with the DOE to offer the latest in home energy rating tools. Josh is BPI certified, and an accredited LEED Green Associate. He is also working towards an MS in Green Buildings.

Capacity Prices- Boom, Bust or Natural Business Cycle

ISO-NE completed the seventh Forward Capacity Auction (FCA7) to procure the resources needed to reliably provide the New England grid with energy during the June 2016 through May 2017 period. The auction started at a price of \$15.00 per kW-month but cleared at the administrative floor price of \$3.15 per kW-month for most parts of the region as there is excess supply. The one exception is the Northeastern Massachusetts and Boston (NEMA) load Zone where the auction closed at a price of \$14.99 per kW-month.

Because the 3,033 MW of existing Capacity located in NEMA was not enough to satisfy the ISO's local sourcing requirement of 3,209 MW the ISO had to procure new Capacity in the NEMA zone.

ISO market rules designed to prevent market manipulation forced the ISO to procure about 683 MWs of new Capacity. These new resources will be paid \$14.99 per kW-month while the 3,033 MWs of existing resources will be paid \$6.66 for the 2016-17 periods. The result is that Load Serving Entities (LSE) in NEMA will pay a blended cost for new and existing Capacity of about \$9.50 per kW-month for 2016-17.

However, the same market rules that caused the ISO to procure 683 MW of new Capacity when only 176 MW were actually needed should place the NEMA zone in a position of having excess for years to come, short of additional unit entitlements or load growth. Assuming the status quo from a Capacity supply perspective, having excess Capacity in the NEMA zone should result in Capacity prices dropping back to the \$4.00 - \$5.00 range for at least a few years beyond 2017. Starting with FCA8, the administrative floor price will be eliminated and it's theoretically possible for the auction to close at \$0.00. However, that seems unlikely. But as long as there is excess Capacity in the system, it wouldn't be surprising to see the next few auctions clear in the \$1 - \$2 range for all zones including NEMA.

Unfortunately for those load serving entities (LSE's) located in NEMA even auction clearing prices in the \$1 range won't bring as much relief as they might hope for. That's because ISO rules allow new Capacity resources to lock in the auction

clearing price for a term of one to five years. Thus, even if FCA8 clears at \$1 per kW-month in the NEMA zone, the blended price LSEs will pay for Capacity in 2017-18 is likely to be about \$4 per kW-month. If the auction clears at \$2, NEMA LSEs will pay about \$5 per kW-month for Capacity in 2017-18. This same scenario will play out until May 2021 when the 5-year term expires and the new resources procured in FCA7 will no longer qualify to be paid the FCA7 clearing price of \$14.99 per kW-month.

While LSEs prefer lower Capacity prices generators and demand response providers naturally prefer higher prices. Of course, LSEs need to be careful in what they wish for--auction clearing prices in the \$1 - \$2 range are likely to cause resources that are losing money or are only marginally profitable to retire. When enough of these marginal resources retire, the ISO will be forced to procure new Capacity resources at significantly higher prices—as just demonstrated in NEMA for FCA7.

Since the auction was conducted, the Massachusetts Department of Public Utilities (MA DPU) investigated whether new capacity will be required in NEMA/Boston within the next 10 years. While the findings were that generation will be needed, the MA DPU decided not to order local distribution companies to enter into long-term contracts for capacity. That is a critical development, as the 5-year period that new resources can elect to receive higher capacity payments are typically not enough to finance a capital intensive central station generation build.

New England has been working off the merchant sector build cycle from the late 1990's and early 2000's for a decade now. Energy prices have been volatile over that time, with periods of high and low prices, and transmission costs have increased substantially and continue to do so. Now, at least in NEMA/Boston, we have experienced a capacity auction where new capacity is required. 674 MW were accepted for a need of around 175 MW. Will the vertical demand curve result in NEMA capacity auction prices falling as quickly as they rose? Time will tell.

Leading & Lagging

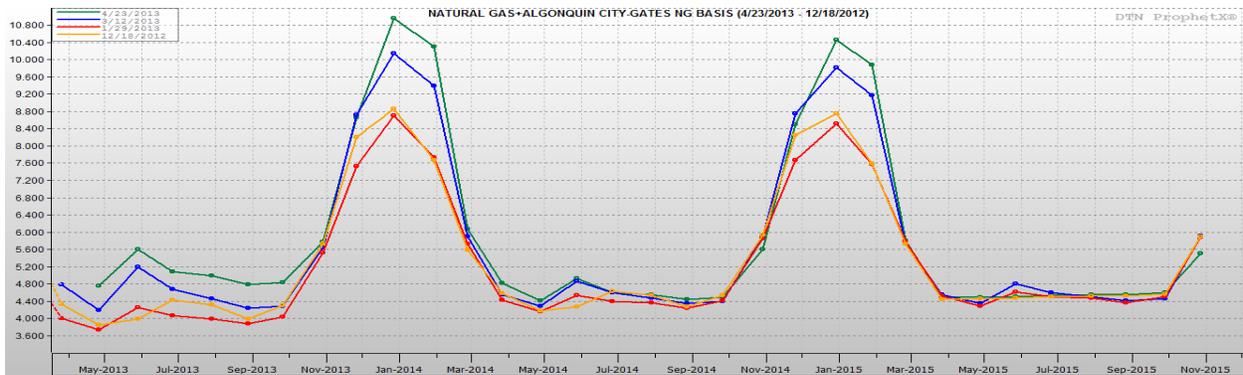
I'll Gladly Pay You Another \$0.90/MWh in 2014 for a Ton of CO₂ Today

Recent changes to the Regional Greenhouse Gas Initiative will lead to a near doubling in CO₂ prices in the Northeast. The emissions cap will drop by 45% to 2012 levels, which were modest due to a number of things including low natural gas prices that drove fuel switching to natural gas, relatively modest temperatures and energy efficiency initiatives. In fact, regional CO₂ allowances fell from 116 MM tons in 2010 to 92 million tons in 2012. The reserve price will increase power prices when generators begin to build the cost into their bids. Marginal system heat rates will result in an increase in power prices of just under \$1/MWh or 0.1 c/kWh.

The Winter of Our (Natural Gas Price) Discontent

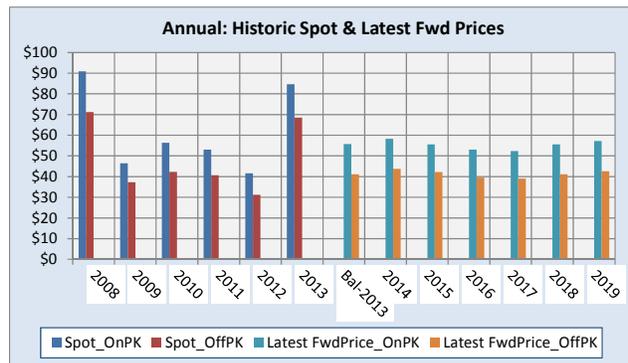
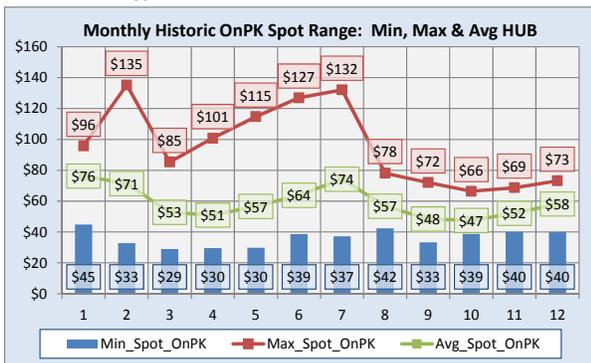
While this past winter brought regional temperatures that were a bit lower than last year's record warm winter, delivered natural gas prices showed that the relatively low commodity gas prices due to the shale production revolution is no guarantee that burner-tip pricing in the Northeast will necessarily follow suit - at least in the winter. Lower gas prices in the Northeast and throughout the US led to low discretionary liquefied natural gas (LNG) deliveries to be available to facilities like the Canaport LNG facility in New Brunswick. Coupled with modest production from the Sable Island offshore gas production facility and more delays in the new Deep Panuke offshore gas field resulted in lower volumes of gas flowing south from Northern New England compared to last year's winter. These lower flows played a part in limiting net flows available on the Algonquin gas pipeline, which serves a number of gas-fired power plants in New England. This led to tight supply/demand conditions, leading to massive price swings beginning back to late October and early November 2012.

Lower temperatures and disruptive storm events that led to some system outages contributed to the volatility, leaving daily delivered natural gas prices to range from \$5-\$6/MMBTU to as much as \$40/MMBTU. New England hadn't seen this degree of volatility since January 2004. The result - high spot market power prices throughout New England and those gas supply/demand conditions rippled through the forward gas basis and power markets.

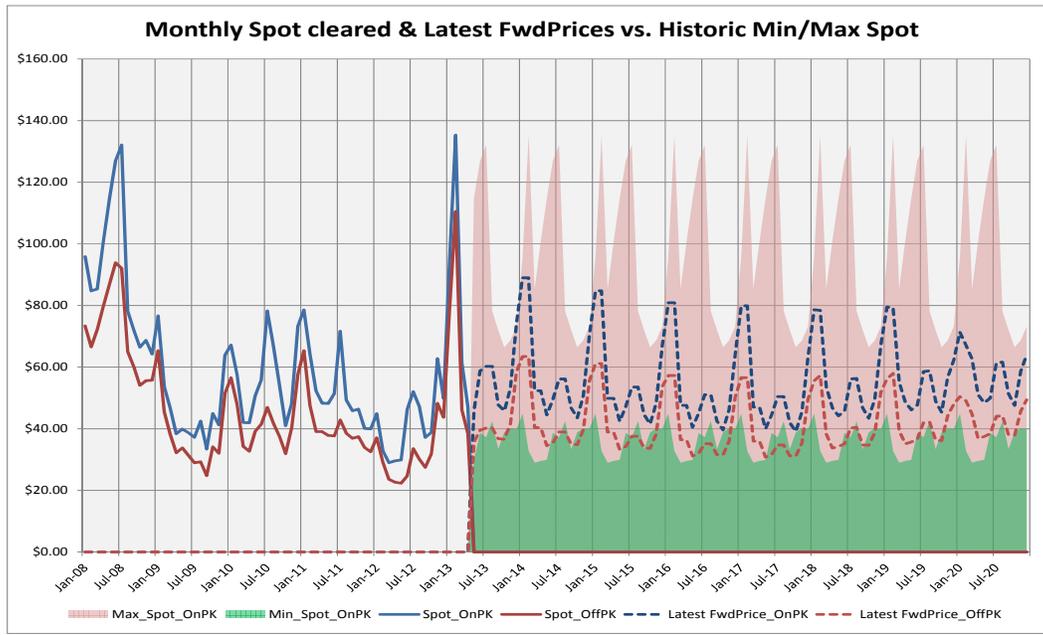


Winter storm NEMO, in early February, led to transmission and generation outages, which caused re-dispatching of generation throughout the system, resulting in substantial congestion costs - price differences among various points throughout New England, as well as local second contingency protection resource dispatching. These costs were as high as or higher than the higher commodity prices during this time. The results fell far and wide - worst in Rhode Island, but with impacts throughout much of the New England system throughout Massachusetts and north into Vermont.

All of these events highlight the importance of a balanced hedging plan, which should be driven by an organization's financial goals and operational needs. For a municipal utility, this might be rate stability, balancing forward commitments with rate stabilization fund balances, or accommodating load growth or the lack thereof. For a commercial or industrial end user, it may entail either or both fuel and power procurement - how much to buy, for what term, from what supplier, etc. More than three years of low spot prices made greater short-term purchasing attractive, but once gas prices jumped there was nowhere to hide. In the past, dual-fuel units provided price capping at oil prices, but that ship sailed a few years back - falling back on \$25-30/MMBTU oil prices still leads to \$200+/MWh energy.



Going forward, while gas transportation and power prices have jumped for winter months (November-March for gas, and particularly December-February for power), overall term prices are now backward dated, meaning prices are lower in the longer-dated years. And, these prices are still relatively attractive based upon historical measures even over the past 5 years, where we have seen very high and very low prices.



Questions, comments, or you just need to talk to Hedger's Anonymous? Feel free to contact us to discuss alternatives or to vent about the market at any of the following:

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