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Winter chill exposes natural gas vulnerabilities

MMWEC suggests 'outside the box' solutions in comments to FERC

More evidence that New England is missing out on the full benefits of cheap and abundant natural gas landed in the region along with a January chill that sent natural gas and power prices soaring while grid operators scrambled to maintain system reliability.

A January 21 - 25 cold snap brought higher demand for natural gas for both heating and electricity generation, resulting in constraints on supply due to limitations on the region's natural gas pipeline system.

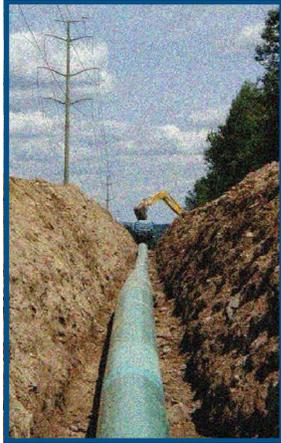
Problems requiring emergency operations then surfaced on Jan. 28, and fuel supply issues arose again early in February.

These events caused the cost of natural gas in New England - already high due to winter pipeline constraints - to nearly quadruple. The price of power rose to an hourly high of \$780/megawatt/hour - more than 10 times its normal price - as the scarcity of natural gas increased power prices and forced the electric system operator to rely on more expensive measures to ensure electric system reliability.

Such measures included a call to service for MMWEC's Stony Brook power plant,

which uses both natural gas and oil but was called to operate on oil due to natural gas constraints.

The fact that MMWEC owns approximately 750 megawatts of New England electric generation that produces revenue during such high-price periods helps to offset the financial impacts on MMWEC's Project Participant municipal utilities and their consumers.



MMWEC Member utilities also dodged the full impact of the higher prices as a result of MMWEC's power portfolio management activities, which include forward purchases of power to hedge against price spikes in the marketplace.

However, the cold snap exposed the vulnerabilities of New England's power grid to an increasing reliance on natural gas for electric generation at times when the demand for natural gas exceeds the region's supply capabilities.

Although prices spiked significantly, electric system reliability was not compromised this time.

"Pipeline constraints already are restricting the ability of New England consumers to take full advantage of abundant and

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MMWEC elections & annual conference set for May 9 & 10

MMWEC's Annual Meeting and Conference, scheduled for May 9 and 10, will include the election of MMWEC directors and officers and address a number of issues facing municipal utilities.

Three, three-year terms on the MMWEC Board of Directors and the office of president will be up for election during the annual MMWEC Membership meeting, followed by the election of MMWEC officers by the board.

Conference topics, covered in presentations and panel discussions, will include wholesale power market, regulatory and legislative issues; NERC compliance and cyber security; information technology; electric/natural gas issues; strategic power supply management; and succession planning, among others.

The lineup of speakers, panelists and industry guests is still being finalized, with a focus on providing information of value and use to attendees. Invitations with additional conference details and registration information will be mailed soon.

The conference will be held at Stonehedge Inn in Tyngsboro, MA, with registration starting at 11 a.m. on May 9 and the event concluding with a 1 p.m. lunch on May 10.

MMWEC strengthens energy efficiency programs with new staff, website plans

A new staff member and plans for a website are strengthening MMWEC's energy efficiency initiatives, including the Green Opportunity (GO) Program, which delivers customized energy efficiency solutions for commercial and industrial (C&I) customers of Massachusetts municipal utilities.

MMWEC recently hired Sandra Annis to fill the new position of Energy Efficiency Program Manager. Annis will be working with existing staff to expand the GO Program and enhance MMWEC's residential energy conservation services program, the Home Energy Loss Prevention Services (HELPS) program.

Annis joins MMWEC after nine years in distribution system design with National Grid. She holds an associates degree in electrical engineering technology and a bachelors degree in pro-

ject management from the Wentworth Institute of Technology.

In addition, a new Go Program website is under development to provide municipal utilities and their C&I customers with easy access to program information. The Go Program website address is www.mmwecgoprogram.org. An existing website for the HELPS program can be found at www.munihelps.org.

As already demonstrated in several municipal utility communities, the GO Program provides benefits for the utility, its customers and the community as a whole, as well as local control over various program components, including the budget. To



Sandra Annis

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inexpensive natural gas, a condition that will only worsen without appropriate action,” MMWEC states in its Jan. 7 comments to the Federal Energy Regulatory Commission (FERC). The FERC is conducting a series of technical conferences and taking comments from stakeholders in exploring solutions to electric/natural gas issues.

“Problems related to increased reliance on natural gas for electricity production do not reflect dysfunction in electricity markets or some degree of failure on the part of generators,” MMWEC states. “They reflect a major shift in the dynamics of energy supply in the region, which demands a look outside the box for solutions.

“For these and other reasons, including inherent incompatibilities in the structure and operation of electricity and natural gas markets, there is a need to reach beyond the traditional regulatory and financial model for building natural gas pipeline capacity,” MMWEC states.

MMWEC urges the FERC to “facilitate discussion of potential solutions that reach beyond traditional industry constructs”, including innovative ways to fund new pipeline facilities. In addition, more flexible firm contracting options are needed to

meet the natural gas needs of electric generators that only operate a fraction of the time they are available to run, consistent with the fluctuating demand for electricity.

A gas pipeline business model requiring 24/7, year-round firm transportation contracts has worked well for many years, MMWEC states, “but the shifting nature of energy production and supply in the Northeast has rendered this model unworkable going forward.”

Similar thoughts have surfaced at high-profile conferences and meetings as natural gas issues grow more urgent. At one such recent meeting, organized by the U.S. Department of Energy and the National Association of Regulatory Commissioners, electric industry officials called for more creative fuel services, more flexibility in the pipeline business model and a reliable (as opposed to firm) supply of natural gas for electric generation.

It also is generally agreed that such changes would require action by the FERC and result in higher costs for consumers, but consumers also pay a price for pipeline constraints, as evidenced by the very high January prices in New England.

“How the costs are allocated will be an

important issue for consumers, which is one reason MMWEC is involved in these discussions,” said Ronald C. DeCurzio, MMWEC’s Chief Executive Officer.

MMWEC also is participating in discussions within ISO New England (ISO-NE), which is working to implement power market changes intended to help address power system reliability issues arising from natural gas constraints. There are proposals before the FERC to settle the day-ahead market for electricity earlier in the day, which would better align the electricity and gas trading days and give generators more time to arrange gas purchases.

ISO-NE also has proposed a capacity market “incentive” program intended to enhance generator availability. The program would penalize generators unable to deliver electricity due to natural gas constraints or other events beyond their control.

“We’re concerned about the cost and reliability of electric service for municipal utility consumers, and both are at risk due to natural gas constraints,” DeCurzio said. “We’re staying involved with all of these issues in order to protect the interests of our member utilities and their consumers,” he said.

MMWEC strengthens energy efficiency programs continued from Page 1

implement the program, municipal utilities use the GO Program template, which offers a range of service options that can be tailored to meet individual utility needs. The services include:

- Program design and marketing assistance;
- Customer intake services;
- Technical assistance/inspections on customer projects;
- All levels of energy audits and reporting, including calculation and processing of rebates;
- Tracking and reporting of energy efficiency savings.

There also is a possibility that certain Go Program initiatives could be financed in part on a tax-exempt basis through MMWEC’s pooled loan program.

Some of the efficiency measures covered include improvements in heating and cooling systems; windows; boilers and furnaces; lighting; energy monitoring systems; and insulation.

In bringing the GO Program to additional municipal utilities, MMWEC emphasizes the opportunities for utilities to develop strong relationships with local businesses while reducing their energy consumption and costs, thereby improving their competitiveness.

For the utility, energy efficiency improvements are the most cost-effective means of meeting electricity demand with

minimal environmental impact. Generally, the cost of saving a kilowatt hour is significantly less than the cost of buying electricity in today’s energy market.

Energy efficiency is becoming more of a mainstream resource for consumers in New England, as reflected in ISO New England’s recent 10-year forecast for electricity use in the region. While the forecast projects a baseline annual growth rate of 1.1% in the region’s energy consumption, energy efficiency initiatives are expected to reduce the annual growth rate to

0.2% between 2016 and 2022. That represents an annual reduction in energy use of about 1.4 billion kilowatt hours, or about 5.9 billion kilowatt hours from 2016-2022, according to the forecast.

MMWEC’s energy efficiency programs give municipal utilities and their customers access to the full range of energy efficiency measures available in the marketplace while preserving local control over program activities and costs.

Westfield Gas & Electric General Manager Daniel Howard says the GO Program has paid exceptional benefits for the utility and its customers.

“Our businesses now have a real partner in their municipal utility,” Howard said.



FERC denies MMWEC request for capacity market self-supply exemption

The Federal Energy Regulatory Commission (FERC) on Feb. 12 denied requests by MMWEC and other public power entities for an exemption from a New England capacity market rule that restricts the ability of consumer-owned utilities to receive credit for resources they build or buy to meet their customers' electricity needs.

In an order approving the capacity market changes submitted by ISO New England (ISO-NE), the FERC denied the exemption requests of MMWEC, the New Hampshire Electric Cooperative, the American Public Power Association, the Northeast Public Power Association and the National Rural Electric Cooperative Association.

The national and regional public power organizations joined the case in January, stating that the ISO-NE capacity market changes raise "a matter of substantial national policy significance" and represent "a disturbing trend" in the nation's organized electric power markets.

That trend is toward capacity market rules that undermine the public power business model by limiting the right of consumer-owned utilities to make their own resource choices and receive full credit for those resources in wholesale power markets.

At issue is the design of ISO-NE's For-

ward Capacity Market (FCM), through which electric generating capacity is procured three years in advance of the time it is needed to meet the demand for electricity in New England.

Each utility is required to have sufficient electric generating capacity to meet its

The ISO-NE capacity market changes raise "a matter of national policy significance" and represent "a disturbing trend" in the nation's organized electric power markets ...

share of the regional demand for electricity, a requirement that consumer-owned utilities have been able to satisfy by "self-supplying" the capacity they own or contract to buy. The right to engage in self-supply has been a key component of the FCM market design since it was approved by FERC in 2006.

The FCM changes approved by FERC jeopardize the ability of consumer-owned utilities to use new self-supplied resources to meet their capacity obligations. If the FERC order stands, such self-supplied resources could be excluded from the FCM and denied capacity payments, diminishing the proven value and benefits of resource ownership for consumer-owned utilities.

In a companion order, the FERC denied a complaint filed by the New England States Committee on Electricity (NESCOE) seeking an exemption from the FCM rules for state-sponsored "public policy resources", including renewable energy projects. Such resources, like self-supplied resources, could be excluded from the FCM and denied capacity payments, thereby undermining project economics and the ability of states to meet their renewable portfolio standards.

In a concurring opinion on the NESCOE order, FERC Commissioner Cheryl LaFleur raised the possibility of

a generic examination of capacity market designs. She suggested that the FERC "consider on a generic basis, such as in a technical conference, the overall effectiveness of different capacity market designs in attracting capital, meeting challenges such as gas-electric interdependence, and accommodating different power supply choices."

Meanwhile, MMWEC, NHEC and others have appealed the 2010 FERC order requiring changes in the FCM design, including the changes that limit self-supply. In its appeal to the U.S. Court of Appeals for the D.C. Circuit, MMWEC argues that the FERC lacks jurisdiction to dictate what resources are built by consumer-owned utilities to meet their capacity obligations.

MMWEC solar aggregate passes generation mark; changes in state program coming

Projects in the MMWEC Solar Aggregate have surpassed the 3,000 megawatt hour (MWh) mark in solar energy generation, a reflection of the growing size of the Aggregate, both in number of projects and generating capacity.

The Aggregate has grown to include 71 solar projects with a total generating capacity of more than 2 megawatts in 11 municipal utility communities.

MMWEC created its Solar Aggregate in 2010 to enable municipal utilities and their customers to capture the benefits of the state's solar development incentive, which is based upon the production and sale of Solar Renewable Energy Certificates, or SRECs. One SREC is created each time a solar project, or an aggregation of solar projects, generates 1,000 kilowatt hours of electricity.

SRECs produced by projects in the Solar Aggregate are sold by MMWEC to entities with solar renewable portfolio requirements and the revenue is shared with project owners or sponsors to offset development costs.

Any project located in a municipal utility community is eligible to join the MMWEC solar aggregate, including residential, commercial, industrial and municipal installations.

With the amount of statewide solar generation currently exceeding targeted amounts, a surplus of SRECs has resulted in a de-

cline in SREC prices. Reported solar energy production from January through October 2012 was 92,315 MWhs, while the target amount, or compliance obligation, for the entire year was 81,559 MWhs.

As a result, the state Department of Energy Resources is making changes to its SREC program that will increase the targeted amount of solar generation for 2013, which could have a positive effect on SREC prices.



Among the growing number of new solar developments in Massachusetts is this recently completed one-megawatt project that provides energy to the Sterling Municipal Light Department.

Berkshire Wind achieves record 56.4% capacity factor during windy January

The Berkshire Wind Power Project in January achieved its highest capacity factor since starting commercial operation in May 2011.

The project's January capacity factor was 56.4%, exceeding the previous mark of 52.9%, which was achieved in January 2012.

A project's capacity factor represents the amount of electricity a project actually produces as compared to its potential production. Because wind projects rely on intermittent wind to produce electricity, inland wind projects generally achieve annual capacity factors in the 30-35% range.

The Berkshire Wind Project includes 10, 1.5-megawatt wind turbines with the capacity to produce 15 megawatts of electricity. The project's capacity factor since commercial operation is 36%, a number that does not reflect statistics from the remaining winter months of 2013, which are usually among the windiest.

Studies of wind resources identify the project's Brodie Mountain site as one of the best inland wind sites in Massachusetts, capable of producing wind energy at an annual capacity factor of approximately 40%. After 21 months of operation, Berkshire Wind is approaching that level of production.

Berkshire Wind is owned and operated by the Berkshire Wind Power Cooperative Corporation (BWPPCC), which is comprised of MMWEC and 14 MMWEC Member municipal utilities serving the communities of Ashburnham, Boylston, Groton, Holden, Hull, Ipswich, Marblehead, Paxton, Peabody, Shrewsbury, Sterling, Templeton, Wakefield and West Boylston.

Both MMWEC and turbine manufacturer General Electric



Pictured are five of Berkshire Wind's 10 turbines, located on Brodie Mountain in Hancock, Mass.

have operations and maintenance responsibilities for the project under contracts with BWPPCC.

MMWEC staff performs remote monitoring of project operations from its Stony Brook Energy Center and responds to events at the site as needed in order to maximize the project's output and minimize maintenance costs.

MMWEC to visit D.C. for APPA Legislative Rally, Congressional meetings

MMWEC is planning meetings with members of Congress and the Federal Energy Regulatory Commission in Washington, D.C., during the American Public Power Association's annual Legislative Rally, March 11-13.

In the meetings, MMWEC staff and members of the MMWEC Board of Directors will address a number of issues important to MMWEC and public power, including the need to preserve the tax exemption for municipal bond interest, which is at risk in proposals to address the federal budget deficit.

Other topics for discussion with legislators and FERC commissioners include the cost and reliability impacts of New England's

growing reliance on natural gas for electric generation at a time when natural gas transportation capacity is constrained.

In addition, MMWEC will assert the need for greater oversight and accountability in New England's wholesale power markets, given the escalating budget of ISO New England and the implementation of market rules that harm the interests of consumer-owned utilities.

MMWEC also will be supporting a change in language implementing the Dodd-Frank Wall Street Reform and Consumer Protection Act that limits the ability of municipal utilities to hedge against market price volatility through transactions with counterparties.



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