

Municipal Utilities Guard Public Power Business Model Amid Evolving Regulations

Shifting state and federal energy policies addressing carbon emissions, distributed generation and other technologies are drawing the attention of MMWEC and its member utilities, which are focused on maintaining the local decision-making authority inherent in the public power business model.

The Massachusetts Department of Environmental Protection's (DEP) recent draft regulations proposing a new Clean Energy Standard (CES) are meant to comply with the emissions-reducing requirements of the Global Warming Solutions Act (GWSA). The CES would require all sellers of retail electricity in Massachusetts, including municipal lighting plants (MLPs), to increase their percentage of "clean" power each year. Under the draft rules, 80 percent of the power generation in Massachusetts would be "clean" by 2050. Generation that would qualify as clean under this rule would be zero- or low-emissions generating technologies, including wind, solar, hydro, battery storage and others, but not nuclear.

Meanwhile, the state Department of Energy Resources is proposing a new solar incentive program designed to provide economic support and market conditions to maintain and

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The Sterling municipal utility is home to the region's first utility scale battery system. Above, representatives from manufacturer NEC Energy Solutions, recently visited the site.

MMWEC Receives Grant for Efficient Streetlights, Bids Under Review

Massachusetts Municipal Wholesale Electric Company (MMWEC) has received a \$2.9 million grant under the state Department of Energy Resources' LED Street Lighting Accelerator Program on behalf of 16 member municipal light departments. MMWEC received 12 bids in its Request for Proposals as part of its participation in the program.

Following the opening of the bids, MMWEC staff began a technical and price review of all proposals. It is expected that deliveries of the energy efficient LED light fixtures to the participating municipal light plants will occur in the summer of 2017.

The grant funds received under the DOER's LED Street Lighting Accelerator Program will help pay for the cost of new

LED street light fixtures, long-life photo-electric controllers, and wireless controllers for the fixtures. The participating MMWEC member municipal light departments are located in Boylston, Chicopee, Holden, Holyoke, Hull, Ipswich,



LED Street Light Fixture

Mansfield, Marblehead, Paxton, Peabody, Princeton, Shrewsbury, South Hadley, Templeton, Wakefield and West Boylston.

The grant is part of \$11.4 million in LED grant funding awarded in December by the Baker-Polito Administration to more than 30 communities. The grant funds will cover 50 percent of the costs of the light fixtures and controllers, with the remaining 50 percent paid for by the indi-

vidual light departments. In all, MMWEC plans to purchase up to 22,000 street light fixtures and up to 9,000 controllers.

While the vendor selection process is incomplete, the estimated yearly energy cost savings to all participating systems is \$816,000, based upon an estimated yearly energy savings of 631,318,000 kilowatt hours.

Under the grant specifications, cobra head style roadway light fixtures must be purchased. The fixtures must have a seven-pin receptacle, which, when paired with an advanced wireless controller, offers features such as system monitoring, two-way communications, metering from a remote location, and setting programmable operation schedules for lights. Other "smart cities" technologies can also be integrated, such as mounted cameras and weather monitoring.

The LED fixtures, which are 40-55 percent more efficient than the fixtures they're replacing, have a life expectancy of 20 years. ∞

Berkshire Wind Has Record Month in December

The Berkshire Wind Power Project, a 10-turbine, 15-megawatt wind farm on Brodie Mountain in Hancock, Massachusetts, saw a record month in December 2016 when it experienced its highest capacity factor since starting operation in May 2011.

The December 2016 capacity factor of 59.1% beats the previous high monthly capacity factor of 56.4%, seen in January 2013. December's capacity factor was 20% higher than that of November 2016. The average capacity factor since the project began operations is 36.8%. The capacity factor is the ratio of the project's actual output to its potential output if it were possible to operate at full name plate capacity over that same period of time.

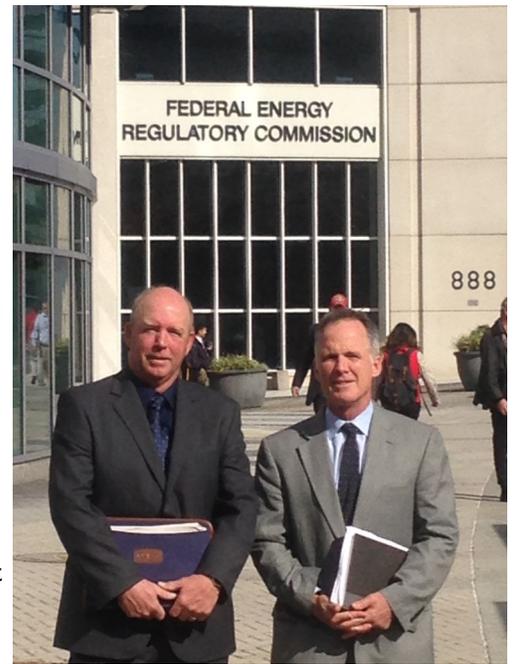
MMWEC, which handles bidding for the project, has implemented several risk mitigation strategies in operating the project. Since 2011, ISO New England has



created new rules governing wind and solar projects to try to integrate them into the market, while maintaining reliability in light of the intermittent nature of such resources. MMWEC has modified its bidding strategy to avoid losses and increase the likelihood of being successful in the marketplace.

Berkshire Wind typically experiences the highest capacity factors of the year during the winter months. Wind speeds average about 18.9 mph on Brodie Mountain, making it one of the best inland wind sites in Massachusetts.

Berkshire Wind is owned by the Berkshire Wind Power Cooperative, a non-profit entity that consists of MMWEC and 14 of its member utilities. It is the second largest operating wind farm in the Commonwealth, and is capable of producing enough electricity to power 6,000 homes. ∞



Sterling Municipal Light Department General Manager Sean Hamilton, left, and retired MMWEC Director of Market Management & Planning Mike Lynch, right, at the Federal Energy Regulatory Commission in Washington, D.C. in November.

Software Improvements Streamline HELPS, GO Billing, Meter Reading Procedures

MMWEC is debuting a new billing process in early 2017 that will streamline billing procedures and eliminate manual backup for the Home Energy Loss Prevention Services (HELPS) and Green Opportunity (GO) energy efficiency programs.



The new procedure involves a separate HELPS & GO billing, with all the pertinent information easily accessible on the face of the bill. This should save MMWEC Member staff time, as they will no longer need to disassemble a bill to pull out the HELPS and GO information.

In addition, all of the data points of the new HELPS & GO bills will go directly into a database, allowing MMWEC to better track energy efficiency data. Members will be able to request custom reports using this data, for regulatory reporting and other purposes.

"These programs require a lot of tracking on behalf of the municipalities," said MMWEC Accounting and Financial Reporting Director Carol Martucci said. "The new database eliminates manual reporting and limits the risk of inaccurate data."

Additional software improvements also have been made recently. Productivity enhancements recently implemented include

automation of bank reconciliations, process redesign for expense reporting and refinement of joint owner billing process. The automations are estimated to save, on a recurring basis, over 20 hours annually. There also have been improvements to the Project Revenue & Expense Reports, which consolidate project revenues and expenses and enable participants to quantify the value of their participation in the projects. These efforts improve timeliness of information, include capacity factor information, and automate manual calculations.

On a daily basis, MMWEC staff members collect power generation and load data from Member utilities by electronically polling and reading over 150 physical meters. MMWEC collects the information, reformats it and submits it to the ISO New England eMarket wholesale market system. Before submission to ISO, MMWEC staff analyze the collected data for completeness and accuracy and when necessary provide estimated information when data is missing. MMWEC staff also reconcile the data using the ISO settlement process and provide corrections to the ISO settlement process based on a monthly and annual reconciliation procedure to ensure proper billing and to meet ISO deadlines for submission.

MMWEC is working currently to enhance its meter reading capabilities to improve and streamline the process, and increase efficiency and quality. ∞

Millstone, Seabrook Have Major Economic Impact on Region

Millstone Power Station, of which MMWEC is a minority owner, generates average annual economic benefits of approximately \$2.6 billion to the New England region, according to a new study by the Nuclear Energy Institute.

As Millstone revenues have fallen due to lower energy prices, several Connecticut state legislators are citing the plant's economic, clean air and electric reliability benefits in supporting legislation to ensure the plant continues operating.



Millstone Power Station

MMWEC is a 4.8% owner of Millstone Unit 3, which is principally owned and operated by Dominion Resources. Together, Millstone's two units generate 2,111 megawatts of around-the-clock, carbon-free power - approximately 59 percent of Connecticut's total electricity demand.

According to the study, "Economic Impacts of the Millstone Nuclear Power Plant," the plant, located in Waterford, Connecticut, will generate more than \$12 billion in economic benefits to the local economy between 2016 and 2030. By 2030, Millstone will have provided more than \$6 billion in benefits from avoided emissions, according to NEI.

On the job front, Millstone supports more than 12,000 direct and secondary jobs in Connecticut and the rest of New England. Those workers in turn strengthen the communities in which they live.

The report finds Millstone is one of the largest taxpayers in Connecticut, contributing an estimated \$40 million in local and state taxes. These funds in turn support local infrastructure and services to the public.

Millstone's economic strength has a major impact on the state's bottom line, according to the study. NEI reports Millstone generates \$873 million of annual economic output in Connecticut, and an additional \$81 million elsewhere in New England. The report says for every dollar of output from Millstone, the state economy produces \$1.20. Connecticut's gross state product includes \$637 million from Millstone's operations.

NEI also says Millstone's carbon-free power prevents the

release of 8.3 metric tons of carbon dioxide every year. At this level, Millstone will have provided more than \$6 billion in benefits from avoided carbon emissions by the year 2030, according to the report.



Seabrook Station

Connecticut lawmakers recognize Millstone's value, and are planning to renew an effort launched last year to ensure that Millstone stays open. Several state legislators are supporting legislation that would allow Dominion to compete for state power procurement contracts. Having the ability to compete for state contracts would provide Dominion with an additional revenue stream during a time when declining natural gas prices have put pressure on the nuclear industry. While Millstone has announced no plans to close, other nuclear plants, such as the Pilgrim Nuclear Power Plant in Massachusetts and Indian Point in New York, are planning to shut down, citing economic concerns.

MMWEC's other nuclear power asset, Seabrook Station, has a similar positive impact on the region's economy. In 2013, NEI produced a study of the economic impacts of Seabrook Station, a 1,244 megawatt nuclear plant located in Seabrook, New Hampshire. Principally owned and operated by NextEra Energy Resources, MMWEC owns 11.59% of Seabrook Station.

According to that report, Seabrook stimulates \$535 million of economic growth locally, and \$1.4

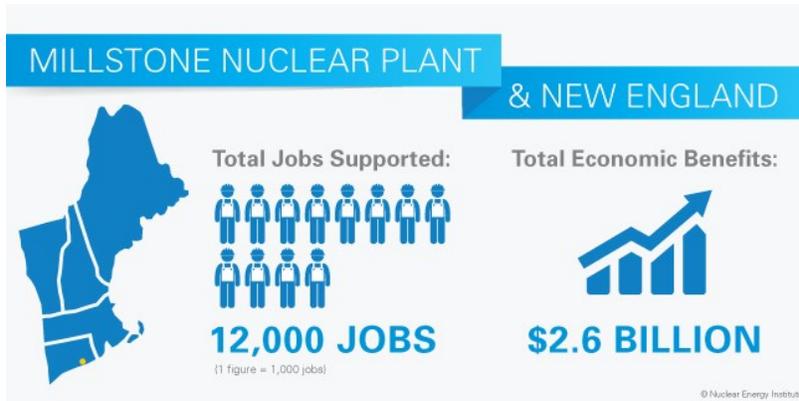
billion across the United States economy. For every \$1 of output from Seabrook, the local economy produced \$1.34.

On the job front, Seabrook employs some 550 full-time workers, at wages more than double the average salaries for the region, plus an additional 6,800 secondary workers.

Seabrook contributed \$23 million in direct state and local property taxes.

Seabrook generates approximately 40 percent of New Hampshire's total electricity. Its carbon-free power prevents the emission of nearly four million tons of carbon dioxide annually.

The study also reports Seabrook has made significant financial contributions to community and environmental groups. ∞



Courtesy Nuclear Energy Institute

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expand the solar photovoltaic market in the Commonwealth, also to comply with GWSA.

The state also is planning to set target amounts for energy storage systems. Last fall, it released a report detailing the benefits of energy storage in Massachusetts, as well as pairing energy storage with renewables such as solar and wind. The report made several recommendations to increase storage in the Commonwealth, and plans to set targets for energy storage systems later this year.

On the federal level, the Federal Energy Regulatory Commission is considering new rules to integrate storage into the ISO-New England markets.

On behalf of its member utilities, MMWEC is participating in the various forums where proposed regulations or laws could undermine the public power business model, which has enabled MLPs to set the standard for quality, economic and reliable electric service for more than a century.

Municipal utilities in Massachusetts have demonstrated their commitment to supporting these clean energy goals. The power supply of the 20 MMWEC members is already approximately 46 percent carbon free. As compared to the region as a whole, the MMWEC/municipal power supply is about 40 percent cleaner than generating resources serving New England.

MMWEC members own nearly a quarter of all wind generation in Massachusetts, at 25 megawatts. MMWEC and 14 Massachusetts municipal utilities own and operate the 15-megawatt Berkshire Wind Project, the second largest wind farm in the state. While not mandated to contract for renewable resources, 17 municipal utilities have signed 25-year contracts with MMWEC to pur-

chase 37.5 megawatts from the new Hancock Wind Project in Maine. This project effectively doubled the amount of wind power owned or under contract by MMWEC and its member utilities.

The amount of solar in MMWEC member communities also continues to grow. Solar projects with a capacity of approximately 25 megawatts are located in MMWEC member service territories, with an additional 18 megawatts projected to

come online this year.

Municipal utilities are also at the fore-

front of cutting-edge technologies.

The Sterling Municipal Light Department is now home to a 2-megawatt battery storage system, designed to provide resiliency and economic benefits to the town. It is the first system of its kind in the state. A number of factors, including comprehensive and expedited local processes for permitting and contracting, have made MLPs preferred locations for such innovative projects.

Municipal utilities have launched these

initiatives without regulatory mandate. State law does not provide the DEP or DOER with the authority to regulate MLPs, because municipal utilities are non-profit entities, controlled by locally elected public officials who are answerable to the customers they serve. For more than 100 years, this has been a direct and effective method of regulation.

In addition, municipal utilities can own and enter into long-term contracts for generating resources. With long-term power supply commitments, MLPs have limited ability to adjust their power supplies to accommodate regulatory mandates. A one-size-fits-all policy approach could jeopardize these contracts and/or result in undue additional costs that could affect the ability of MLPs to provide the low-cost, reliable service their customers expect.

As the industry evolves, and as customers demand, municipal utilities are adapting to broad changes relating to the integration of carbon-free resources, without being mandated to do so. Municipal utilities will continue to do their part to support state and federal policy changes, while maintaining the high level of reliable and cost-competitive service for which they are known. ∞

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Holyoke to double solar capacity in 2017

Holyoke Gas & Electric Department is rapidly increasing the amount of solar in its power portfolio. Through 2015, HG&E had commissioned four utility scale solar projects in Holyoke, totaling 6.3 megawatts of installed capacity. Two additional projects began commercial operations in December 2016, totaling 1.3 megawatts.

This year, HG&E's solar will more than double, with the addition of four projects totaling 8.3 megawatts. One of the newest projects is a 5.76 megawatt solar farm under construction on the property of the former coal-fired Mt. Tom Power Station.

Together with HG&E's hydro projects and other initiatives, the utility's high percentage of renewable energy is ensuring that electricity rates remain low, while also reducing Holyoke's carbon footprint.

Massachusetts Municipal Wholesale Electric Company

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Joint Action and economies of scale for Massachusetts municipal utilities

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