The New England winter of 2013-14 was a harsh one, with the typical cold-weather challenges compounded by record high natural gas and electricity prices, driven once again by constraints in the supply of natural gas to the region. There were and continue to be electric system reliability issues, which are bringing major changes to the already complex rules governing wholesale power markets and power plant operations.

Fortunately, MMWEC’s ownership in several power plants and its forward purchases of electricity provided a hedge against the higher prices for municipal utility consumers, who saved many millions of dollars due to their affiliations with MMWEC. In addition, as the region’s power grid operators and regulators work to address reliability issues, MMWEC is at the table ensuring that municipal utility interests are recognized and addressed.
There are many local benefits to municipal utility ownership, including the ability of customers to walk into a Main Street office to speak with the utility manager or attend a meeting of utility officials.

In order to retain these and other benefits of local ownership and control, it is essential for municipal utilities to be heard in the regional and national forums where utility industry rules are created and enforced. This is next to impossible for a single municipal utility, but joint action with other municipal utilities gives public power a larger voice that is heard far beyond Main Street.

MMWEC is the Joint Action Agency for Massachusetts municipal utilities, possessing unique statutory authority to plan, finance, construct and operate energy facilities on behalf of its member and project participant utilities. We manage our members’ interactions with grid operator ISO New England (ISO-NE) and oversee our members’ interests in state, regional and national energy issues.

In the past year, MMWEC’s commitment to public power joint action has led to:

• Completion of a 5-year project to extend the rotor life and value of the 527-megawatt Stony Brook power plant to at least 2030. Such investment in MMWEC generating assets also extends the benefits of generation ownership for participating municipal utilities and their customers.

• More than $14 million in power cost savings for member utilities, resulting from forward power purchases to hedge against price volatility in wholesale power markets.

• New contracts for wind and hydroelectric resources that bring diversity and price stability to members’ power portfolios.

• Creation of a Pooled Loan Program to assist member utilities with financing big-ticket, local facilities such as substations and operations centers.

• Increased participation in regional and national activities to protect municipal utility interests.

• Affirmation of MMWEC’s A-level credit ratings by the three major credit rating agencies, reflecting sound financial planning and asset management.

• A higher level of involvement in North American Electric Reliability Corporation (NERC) activities to ensure electric system reliability and cyber security.

• Completion of a Financial Systems Redesign (FSR) Project and continuation of MMWEC’s Strategic Information Technology Plan, which is replacing outdated information systems throughout the enterprise to improve the reliability and efficiency of MMWEC operations.

In managing these activities, MMWEC brings subject-matter expertise and economies of scale to the work required for municipal utilities to survive and thrive in an environment where change and challenges to the status quo are constant. This gives Massachusetts municipal utilities the collective strength to influence regional and national affairs without compromising the local, hometown benefits of public power.
The ongoing value of Stony Brook is evident in its selection by ISO New England to participate in the region’s 2013-14 Winter Reliability Program, which involved incentive payments for generators to maintain oil inventories required to ensure electric system reliability if supplies of natural gas to New England fell short during the winter months.

STONY BROOK
LIFE EXTENSION/GENERATION OWNERSHIP

A Stony Brook Intermediate Unit rotor replacement program that started in 2008 was completed during the unit’s fall 2013 scheduled outage, extending the life of rotor assemblies in the three Intermediate Unit combustion turbines until at least 2030.

The Intermediate Unit began operating in November 1981, and by 2008 the turbine rotors were beginning to reach the manufacturer’s limit on number of starts. Manufacturers have established life limits on turbine rotors that require their replacement at a prescribed number of operating hours or starts, whichever comes first.

MMWEC also completed the installation of new control systems for the Intermediate Unit’s heat recovery steam generators in 2013. The new control systems replace the original controls, which were no longer supported by the manufacturer.

The ongoing value of Stony Brook is evident in its selection by ISO New England to participate in the region’s 2013-14 Winter Reliability Program, which involved incentive payments for generators to maintain oil inventories required to ensure electric system reliability if supplies of natural gas to New England fell short during the winter months. As it turned out, Stony Brook operated frequently on oil due to the harsh winter and constraints on the supply of natural gas to the region.

Stony Brook received approximately $3.6 million for participating in the program, which roughly offset the program costs for customers of Stony Brook participant utilities, reflecting the benefits of generation ownership.

Similarly, Stony Brook’s participation in ISO-NE’s locational forward reserve markets is generating additional revenue for Stony Brook participants, offsetting the higher regional costs of providing forward reserve capacity.

All told, MMWEC owns approximately 735 megawatts of electric generating capacity in New England. The MMWEC-owned resources are a valuable hedge against market volatility and earn revenue in the energy, reserve and capacity markets, bringing greater balance and price stability to municipal utility participation in wholesale power markets.
Standing, left to right, are Alan R. Menard, Director of Business Support and Administrative Services and Assistant Treasurer; Michael J. Lynch, Director of Market Management and Planning; Edward Kaczenski, Director of Engineering and Generation Assets; and Matthew J. Ide, Director of Treasury and Commodities. Seated are David Tuohy, Director of Communications and External Affairs; and Carol Martucci, Director of Accounting and Financial Reporting.

MMWEC staff and contractors align the turbine rotor in Intermediate Unit IA as part of a life extension program for the Stony Brook power plant.
POWER SUPPLY HEDGING/PRICE STABILITY

In addition to generation ownership, hedging members’ power supplies involves entering into contracts for future power at regular intervals over time, using a variety of market intelligence and analytical tools to manage risks and help achieve stable prices over the long term.

Typically, hedged power prices are above or below projected market prices at any given time but always within a band of reasonableness. The value of MMWEC’s hedge purchases is most obvious during times of market volatility, such as during the 2013-14 winter, when MMWEC’s hedged prices were as much as 70% lower than market power prices.

There are many ways to measure market volatility. For example, during January 2014, New England’s wholesale electricity market costs totaled $2.2 billion, up from $1.2 billion the previous month. That means electricity costs nearly doubled from one month to the next due to extremely cold weather, higher demand for electricity, constraints in the region’s natural gas supply and other factors, all of which created inefficiencies in operating the electric system, resulting in higher prices.

By another measure, the price of natural gas, which usually dictates the price of electricity in New England, was 137% higher in January 2014 than it was in January 2013. In addition to large price spikes, this created operating challenges when oil units became more economical to run than gas units, because oil units experienced operating limits due to limited fuel supply and environmental limitations on their emissions.

Such periods of stress and high prices in operating New England’s electric system have become too common in recent years, and there are numerous initiatives in place and proposed to address underlying issues. However, it is during these periods, and during more typical peak demand periods, that a measured and steady approach to power supply hedging pays off for consumers.

During February 2013, when fuel supply and other issues caused New England’s peak power prices to spike as high as $135 per megawatt hour, MMWEC’s average power hedge price was less than $59 per megawatt hour. That difference translates into retention of significant disposable income for consumers of municipal utilities participating in MMWEC’s power supply portfolio management program.

This program is designed to address each utility’s risk tolerance and unique portfolio goals using a comprehensive package of power supply planning, market analysis, resource development, contracting and risk management services. And while the benefits are most evident in volatile markets, the program is key in providing long-term competitiveness and price stability for municipal utilities.
During February 2013, when fuel supply and other issues caused New England’s peak power prices to spike as high as $135 per megawatt hour, MMWEC’s average power hedge price was less than $59 per megawatt hour. That difference translates into retention of significant disposable income for consumers of municipal utilities participating in MMWEC’s power supply portfolio management program.
In addition to ownership of the 15-megawatt Berkshire Wind Power Project, above, MMWEC and its members have entered into a 25-year contract for an additional 38 megawatts from a Maine wind farm.

MMWEC officers not pictured elsewhere in the report are, from left, Stephen J. Smith, Assistant Treasurer; Nicholas J. Scobbo, Jr., General Counsel; and Nancy A. Brown, Assistant Secretary.
A BALANCED APPROACH

Late in 2013, MMWEC entered into a fixed-price, 25-year contract with First Wind to purchase approximately 38 megawatts from a wind project in Maine for resale to 17 MMWEC member municipal utilities. Execution of the MMWEC contract with First Wind and the corresponding contracts with the municipal utilities was completed in record time to accommodate a deadline for the project to receive a federal production tax credit that expired at the end of 2013.

MMWEC also entered into a 20-year contract to purchase the output of four hydro projects in Vermont with a capacity of 9.1 megawatts on behalf of 13 member utilities. Deliveries from the projects started in 2014.

These contracts add to the green energy portfolio of MMWEC and its members, which includes the 15-megawatt Berkshire Wind Power Project, MMWEC’s energy efficiency programs and numerous smaller wind and solar projects located in the service territories of member utilities. MMWEC also created and manages the MMWEC Solar Aggregate, which aggregates and sells Solar Renewable Energy Certificates (SRECs) for projects located in municipal utility communities to offset development costs.

The contracts bring competitively priced energy to the MMWEC portfolio and to the customers of member utilities. They also bring a valuable measure of diversity and price stability to the MMWEC resource mix at a time when New England’s high and growing reliance on natural gas for electricity production is creating concern.

Energy efficiency is another important component of the MMWEC portfolio, including the Home Energy Loss Prevention Services (HELPs) Program for residential customers of municipal utilities and the Green Opportunity (GO) Program for commercial, industrial and institutional customers. GO Program growth is targeting opportunities for additional state funding to improve and expand program offerings. In addition, a new staff member, improved website presence and increased marketing initiatives are working to improve exposure and participation for both programs.

Resource diversity and portfolio balance are key objectives of MMWEC’s power supply planning and development activities. This focus is a result of decisions by municipal utilities and their customers, without mandate, to invest in renewable energy and energy efficiency resources.

POOLED LOAN PROGRAM

MMWEC has requested approval from the Massachusetts Department of Public Utilities (DPU) to issue up to $400 million in bonds or other forms of indebtedness to finance a Pooled Loan Program for its member utilities. Under this program, member utilities can reduce their financing costs by using MMWEC to finance a variety of local facilities, such as operations centers, substations, bucket trucks and other facilities to benefit their operations.

The program, authorized by MMWEC’s enabling legislation, expands the benefits and economies of scale that are the foundation of MMWEC’s joint action initiatives. In conducting a single financing to fund multiple member projects, MMWEC will save its participating members the costs of multiple individual financings, such as the bond counsel, rating agency, financial advisor, trustee and other fees typically associated with bond issues.

In an example provided to the DPU, MMWEC estimated a savings in up-front costs of more than $1 million for eight municipal utility projects financed through the Pooled Loan Program versus individual municipal utility financings. As such, the program will enable MMWEC member utilities to finance necessary projects more economically and expeditiously, thereby reducing costs for their consumers.

MMWEC has been discussing a number of potential member projects to finance through the program and expects to activate the program by mid-2014.
These and other activities are made possible by joint action, which adds value and strength to MMWEC’s advocacy role. It also enables individual municipal utilities to focus on providing economic and reliable electric service and delivering the local benefits of public power.
REPRESENTING PUBLIC POWER

A growing number of difficult marketplace and regulatory issues have added importance and value to MMWEC’s role as an advocate for public power interests.

Threats to reliability of the region’s electric system spurred ISO-NE to propose and implement more than a dozen major market changes over the past year. Early in 2014, proposing additional market reforms, ISO-NE said the region’s reliability situation over the next few years is “precarious”.

MMWEC participates in the various ISO-NE stakeholder processes, providing the expertise and other resources required to identify and address public power issues as the marketplace evolves. Addressing threats to reliability usually results in higher costs for consumers. In addition, the increasing scope and complexity of marketplace issues increases the requirements and cost of participating in the rulemaking process. In this environment, MMWEC is working to ensure an appropriate balance between cost and reliability.

After the stakeholder process, most of these market reforms require approval in separate cases before the Federal Energy Regulatory Commission (FERC), where arguments for and against what is being proposed can be presented. The FERC also has established three separate technical conference proceedings to address issues affecting New England’s power markets, including natural gas pipeline constraints, capacity markets and cold weather operations.

In addition to participating in the technical conferences, MMWEC is a party to most of the FERC proceedings involving the New England marketplace and meets with the FERC Commissioners and staff as required to address public power issues. An initial decision in one of these cases, which would reduce from 11.14% to 9.7% the amount of profit transmission owners are allowed to earn on their investments, would save consumers upwards of $100 million a year over the life of existing and planned transmission projects.

Constraints on the supply of natural gas to New England during peak demand periods are an underlying cause of the region’s cost and reliability issues, especially since natural gas is used to generate about half of the region’s electricity. The FERC launched an investigation into electricity and natural gas market coordination more than two years ago, recognizing the related issues are particularly acute in New England. With growing market implications and impacts on operation of its Stony Brook power plant, MMWEC is addressing these issues with the FERC and members of Congress.

MMWEC filed comments and met with FERC Commissioners on numerous occasions to discuss natural gas issues and is participating in the New England Gas/Electric Focus Group, a regional initiative that grew out of an August 2012 FERC conference in Boston. MMWEC’s involvement with these issues has resulted in several national speaking engagements for MMWEC staff to discuss the implications for public power.

These and other activities are made possible by joint action, which adds value and strength to MMWEC’s advocacy role. It also enables individual municipal utilities to focus on providing economic and reliable electric service and delivering the local benefits of public power.
Several of MMWEC’s tax-exempt bond issues have run full cycle, with bonds issued to finance MMWEC’s ownership in the Stony Brook power plant and Wyman Unit No. 4 retired in recent years. The balance of MMWEC’s outstanding debt, about $225 million, will be retired by 2019.

Since issuing its first bonds in 1976, MMWEC has issued more than $4.7 billion in bonds to finance and refinance its 735-megawatt ownership interest in several generating facilities, using the unique financing authority contained in MMWEC’s enabling legislation. During this time, the MMWEC system of financing has become a known and respected quantity within the financial community. The backbone of that system – the take-or-pay Power Sales Agreements with project participant utilities – has been court-tested and upheld by the Massachusetts Supreme Judicial Court.

Few public power systems have the track record, strength and proven success of the MMWEC financing system, which in large part is responsible for reaffirmation of MMWEC’s A-level credit ratings by three major credit rating agencies in 2013. As they have many times in the past, the rating agencies again cited the financial and competitive strength of MMWEC and its municipal utility project participants in affirming their ratings.

Other achievements cited by the rating agencies include the elevation of MMWEC’s energy portfolio and risk management services. According to Moody’s Investors Service, “The effectiveness of MMWEC’s enterprise risk management program with regards to energy price hedging, contract negotiation, and the ongoing monitoring of member power supply needs remains a key rating consideration.”

Significantly, MMWEC’s remaining debt is related to its ownership in two nuclear units, both of which are expected to operate until at least 2045, long after the debt is retired in 2019.

All of this means that MMWEC and its municipal utilities are well-positioned financially and structurally to develop and finance the next generation of public power energy resources. While marketplace uncertainties present a number of challenges to building new power plants, there was a first-time shortfall of capacity in the recent auction to procure capacity needed to meet New England’s power needs in 2017. This signals a need for new capacity in the region, and MMWEC is continuing to pursue ownership opportunities and the benefits they bring for its member utilities.
NERC ACTIVITIES

Regulatory and political concern about the physical and cyber security of bulk power facilities reached new heights following widespread publicity about the 2013 attack that crippled a major California substation. While debate about the best methods to secure bulk power facilities is continuing at the highest national levels, MMWEC is working to protect the interests of its members and project participants as the process unfolds.

Part of that effort includes working with the North American Electric Reliability Corporation (NERC) and others in the electric industry to develop practical and effective reliability standards that do not place an undue burden on MMWEC and its municipal utilities. For example, MMWEC has argued successfully that small municipal utilities with assets not critical to bulk power system operations should be exempt from many standards.

It also involves ensuring that MMWEC is in compliance with existing NERC operations standards and cyber security standards for bulk power facilities. As the operator and principal owner of the Stony Brook power plant, MMWEC works to ensure compliance with both sets of standards, a discipline that is growing rapidly in importance and prominence among electric utilities.

MMWEC participated in the NERC-sponsored GridEx II grid security exercise in November 2013, a national exercise that included simulated physical and cyber attacks on the bulk power system. The exercise provided an opportunity for MMWEC to test its procedures for responding to such attacks as well as its communications with law enforcement and other organizations.

In addition, officials from the Northeast Power Coordinating Council, the regional enforcement arm of NERC, completed a near-week-long, on-site audit of MMWEC’s compliance with NERC’s Critical Infrastructure Protection (CIP) standards. The success of the audit validates MMWEC’s cyber security program for the protection of critical infrastructure facilities.

MMWEC also serves as a resource for its member utilities with respect to NERC compliance activities, including the physical and cyber security of their utility assets. The value of this resource is increasing with heightened national activity to ensure electric system reliability.

Importantly, with the requirements for utilities to comply with NERC and other standards growing, MMWEC’s knowledge and experience in this area are ahead of the curve.

Top row, from left, are Michael J. Flynn, MMWEC Board of Directors, Gubernatorial Appointee and Town of Wilbraham Representative; Cornelius Flynn, MMWEC Board of Directors, Town of Hampden Representative. Bottom row, are Luis Vitorino, MMWEC Board of Directors, Town of Ludlow Representative; Daniel L. Suppin, MMWEC Director of Information Technology.
INFORMATION TECHNOLOGY

MMWEC’s Strategic Information Technology Plan is a comprehensive strategy to transform its information systems and business processes into a sustainable, competitive advantage for municipal utilities. It encompasses all of the organization’s business functions, from a broad range of power supply, energy management and engineering functions to a full spectrum of financing, accounting and treasury services.

These core business functions of MMWEC rely heavily on information technology. Over time, one of the key goals is to replace dated technology and processes with a flexible and efficient information systems platform that accommodates new technology and integrates data and activity across all business units.

The first phase of this plan was completed early in 2013 with implementation of a Financial Systems Redesign (FSR) Project, which has replaced outdated general ledger, accounting, purchasing and financial reporting systems. The FSR Project represents a fundamental change in MMWEC’s financial services technology that opens up new opportunities for data sharing and efficiencies that bring greater value to MMWEC’s financial services.

Rollout of the Strategic Information Technology Plan is continuing in 2014 with physical improvements in MMWEC’s data center that are upgrading the organization’s computing and network infrastructure. The planned 2014 update of MMWEC’s Business Continuity Plan goes hand-in-hand with these upgrades to help ensure the security, availability and reliability of business operations.

Power supply analysis and electric metering applications that are central to MMWEC’s Market Management and Planning activities also are in line for an upgrade in 2014. As these and other upcoming upgrades are integrated with other components of the technology infrastructure, there will be enhanced opportunities for strategic sharing and business use of information resources, ultimately improving the quality and value of MMWEC services for municipal utilities.
MEMBERS & PROJECT PARTICIPANTS

Ashburnham Municipal Light Department*  
Boylston Municipal Light Department*  
Braintree Electric Light Department  
Chicopee Electric Light Department*  
Danvers Electric Division  
Georgetown Municipal Light Department  
Groton Electric Light Department*  
Hingham Municipal Lighting Plant  
Holden Municipal Light Department*  
Holyoke Gas & Electric Department*  
Hudson Light & Power Department  
Hull Municipal Lighting Plant*  
Ipswich Municipal Light Department*  
Littleton Electric Light & Water  
Mansfield Municipal Electric Department*  
Marblehead Municipal Light Department*  
Middleborough Gas & Electric Department  
Middleton Municipal Electric Department  
North Attleborough Electric Department  
Paxton Municipal Light Department*  
Peabody Municipal Light Plant*  
Princeton Municipal Light Department*  
Reading Municipal Light Department  
Russell Municipal Light Department*  
Shrewsbury Electric & Cable Operations*  
South Hadley Electric Light Department*  
Sterling Municipal Light Department*  
Templeton Municipal Light & Water Plant*  
Wakefield Municipal Gas & Light Department*  
West Boylston Municipal Lighting Plant*  
Westfield Gas & Electric*  
Pascoag (RI) Utility District  
Green Mountain Power Corporation (VT)  
Hardwick (VT) Electric Department  
Ludlow (VT) Electric Light Department  
Morrisville (VT) Water and Light Department  
Stowe (VT) Electric Department  
Swanton (VT) Electric Department  
* MMWEC Members

2013 FINANCIAL STATEMENTS

MMWEC’s Financial Statements for the years ended December 31, 2013 and 2012 are contained on the CD included in this year’s annual report. Copies of this report and supplemental financial information can be obtained, free of charge, by contacting:

Communications and External Affairs  
Massachusetts Municipal Wholesale Electric Company  
327 Moody Street  
PO Box 426  
Ludlow, MA 01056

E-mail: mmwec@mmwec.org | Internet: www.mmwec.org

The Massachusetts Municipal Wholesale Electric Company (MMWEC) is a not-for-profit, public corporation and political subdivision of the Commonwealth of Massachusetts, created in 1976 through an Act of the Massachusetts General Court. MMWEC provides a broad range of power supply, financial, risk management and other services to enhance the competitiveness of Massachusetts municipal utilities. MMWEC also is the operator and principal owner of the Stony Brook power plant, a 527-megawatt, combined-cycle generating station located at MMWEC’s Stony Brook Energy Center in Ludlow, Massachusetts.