Piecing Together
A Greener Tomorrow

2022 ANNUAL REPORT

MMWEC
MASSACHUSETTS MUNICIPAL
WHOLESALE ELECTRIC COMPANY
Public Energy Partners

MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC COMPANY

"Alone we can do so little.
Together we can do so much."

– Helen Keller

MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC COMPANY

Letter From Management

As the region makes its way through a pandemic-fueled inflationary period, the consumer-owned, not-for-profit municipal utilities in the Commonwealth and their state-designated joint action agency, the Massachusetts Municipal Wholesale Electric Company (MMWEC), forge ahead to continue to provide superior service while doing their part to reduce climate impacts.

After three years of the COVID-19 pandemic, and a time period of enormous change, the municipal light plant (MLP) Members and Project Participants of MMWEC, strive to continue to do what they do best – maintain reliable electric service at a low cost.

Municipal utilities are not immune to the increasing energy costs and supply chain issues affecting the entire electric industry. Many MLPs had to raise their rates in 2022, but generally, their customers are experiencing smaller increases to their bills. With long-term planning, the MLPs are able to implement rate stabilization measures to reduce the impacts of power cost volatility. While higher costs across the board affect everyone, MLP customers tend to have a lower energy cost burden than those served by investor-owned utilities.

Despite the uncertain economy and the ongoing pandemic, MLPs are busy ensuring that the lights stay on for their customers. They're doing this with a focus on increasing the carbon-free energy sales in their power portfolios, in alignment with the MLP Greenhouse Gas Emissions Standard (GGES) that was signed into law in 2021. Even prior to the law, many MLPs were ahead of the curve when it came to incorporating renewable resources, dating back to the first wind turbines constructed by the Princeton light department in the 1980s.

Under the GGES, MLPs must have 50% carbon-free energy sales by 2030, 75% carbon-free energy sales by 2040, and "net zero" carbon emissions energy sales by 2050. MMWEC is helping its Member light departments meet or exceed these targets by developing individual "roadmaps" to help guide their future planning, based on the needs and desires of each individual light department. In 2022, MMWEC developed Pathway Reports for each of its Members to highlight all of the steps they are taking to reach each of those milestone targets.

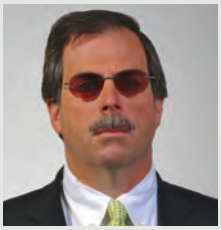
To that end, MMWEC has constructed a 6.9 megawatt (MW) solar project on its Ludlow campus – the largest single solar field in the Commonwealth. The MMWEC/Master Sergeant Alexander Cotton Memorial Solar Project is named in honor of the late Master Sergeant Cotton of the 439th Airlift Wing at neighboring Westover Air Reserve Base.

Built on 35 acres, the project will generate more than 13,800 megawatt hours (MWh) per year, enough to power over 1,500 homes. It is also expected to displace nearly 13,220,400 pounds of carbon dioxide emissions from Massachusetts power plants per year. Six MMWEC Member utilities are participating in the project, which is expected to come online in 2023. The project is ideal for MLPs looking to increase their carbon-free generation, but may not have adequate space within their own service territories to build a solar array.

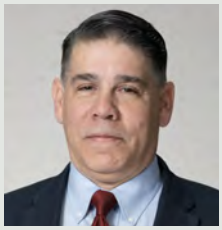
Despite all of their progress, MMWEC and the MLPs are not resting on their laurels. They continue to investigate various technologies – both established and emerging – in an effort to continue to green their power portfolios. This includes offshore wind, energy storage, green hydrogen and advanced nuclear technology.

At the same time, the MLPs are increasing opportunities and incentives for forward-thinking customers looking to decarbonize and electrify. In 2022, MMWEC launched the NextZero program, a rebranded energy efficiency program with a focus on decarbonization and electrification for residential and commercial customers. In 2023, MMWEC will continue to investigate and develop programs under the NextZero umbrella that support the MLPs' objectives of decarbonization.

The economy and the pandemic continue to present challenges to our industry, but MMWEC and the Commonwealth's municipal light departments will forge ahead in our mission today while keeping an eye on the future.



Michael J. Flynn
Chairman of the Board and Gubernatorial Appointee



Peter D. Dion
MMWEC President

Ronald C. DeCurzio
Chief Executive Officer and Secretary

MMWEC
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Cotton Solar Project Complete

One of MMWEC's biggest decarbonization accomplishments in 2022 was the construction of the MMWEC/Master Sergeant Alexander Cotton Memorial Solar Project. A ribbon cutting celebration, held in October, marked the near completion of the 6.9 MW project, constructed on a 35-acre section of MMWEC's Ludlow campus.

Six MMWEC Members, located in Boylston, Ipswich, Mansfield, Marblehead, Peabody and Wakefield, are participating in the project, which will generate more than 13,800 MWh per year, enough to power more than 1,500 homes. The project is expected to displace nearly 13,220,400 pounds of carbon emissions from Massachusetts power plants each year, based on current ISO New England average emissions.

The project is named in honor of the late Master Sergeant Alexander Cotton of the 439th Airlift Wing at neighboring Westover Air Reserve Base, in appreciation of his dedication and service, and in recognition of the long history between MMWEC and Westover.

The Cotton family at the MMWEC/Master Sergeant Alexander Cotton Memorial Solar Project

Nuclear Plays Critical Role

Seabrook Station

With an increasing focus on decarbonizing power portfolios to reach net zero emissions by 2050, the spotlight has turned to the high value of nuclear generation. MMWEC and its Project Participants had the foresight to invest in nuclear – Seabrook Station and Millstone Unit 3 – decades ago. MMWEC owns 11.59% of Seabrook's output and 4.8% of Millstone Unit 3's output. After retiring all bonds associated with its nuclear projects, MMWEC is believed to be the only joint action agency to own nuclear generation debt-free.

In 2022, Millstone Unit 3 underwent a measurement uncertainty recapture (MUR), or uprate, resulting in an additional 20 MW of output. As a result, MMWEC's Millstone Project Participants now have access to an additional 1 MW of that uprate per the MMWEC ownership share, further cementing their commitment to carbon-free energy.

Nuclear power provides the region with, on average, more than 25 percent of its energy requirements. As we approach increasingly stringent emissions targets, MMWEC and its Project Participants continue to look for new ways to invest in this resource that has proven critical to a decarbonized grid.

NextZero Program Participation Grows

MMWEC kicked off 2022 with increasing focus on decarbonization, electrification and energy efficiency efforts, most notably with the launch of the NextZero program. Aimed at helping public power communities accelerate decarbonization in support of "net zero emissions" goals for 2050, NextZero replaced former residential, commercial and industrial energy efficiency programs in alignment with this shift towards a carbon-free future.

The renewed focus on these programs and incentives, in conjunction with reduced emissions targets, resulted in the growth of program participation by MLPs in 2022. Twenty-one MLPs participated in the NextZero program in 2022 in recognition of the program's value and effectiveness in meeting the light departments' objectives.

NEXTZERO
EXPERIENCE WHAT'S NEXT

NextZero Rebates and Incentives Expand

The first year of the NextZero program also saw several new incentives offered by participating MLPs. Rebates were offered for electric lawn equipment, such as lawnmowers and trimmers. Additionally, 14 MLPs began offering rebates for induction stoves to encourage their use over gas stoves. Two light departments even purchased induction cooktops to be offered for lending by their local libraries, to further encourage residents to try the carbon-free technology for themselves.

As the Commonwealth and the MLPs look for new approaches to electrifying the residential sector, there is growing attention on electrifying heating and cooling. Starting in 2022, geothermal heat pumps were added to the list of technologies qualifying for heat pump rebates to help reduce the up-front costs of installation. In addition, several MLPs began participating in the heat pump assessment program in 2022. This program provides residents interested in exploring heat pumps as an option for their home to receive free expert advice on selecting a system that is optimally suited for their home.

Induction cooktop

New Efforts to Raise Awareness

The launch of the NextZero program and brand included the development of a social media presence – a first for MMWEC – as well as increased marketing material creation for the participating MLPs. MMWEC began providing social media content in various formats, for a variety of platforms, in order to grow awareness of decarbonization and electrification incentives available to customers of participating MLPs.

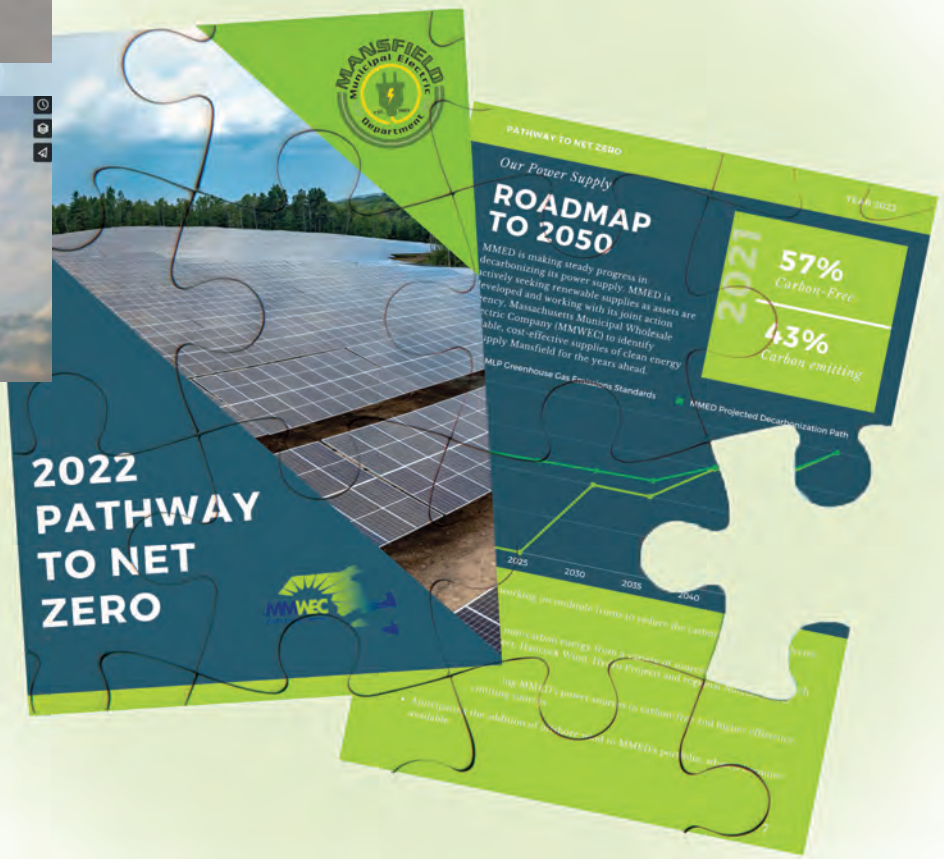
MMWEC staff hosted several webinars throughout the year to spread the word about NextZero, including both residential and commercial and industrial rebates and incentives. Webinars were held for both MLP staff and the public to answer any questions they had about NextZero. An additional webinar training was held for contractors working in the decarbonization industry to learn about the NextZero process.

To further raise awareness and improve transparency for MLP customers interested in how their utility is decarbonizing its portfolio, MMWEC developed new Pathway Reports for each MLP. These reports, customized for each light department, demonstrate the current carbon emissions of the power portfolio, plans for the future, and information on incentives and rebates available to customers.

Finally, for the first time, MMWEC engaged a marketing firm to develop short and longer-form video marketing pieces to educate customers about the benefits of living in a public power community and the efforts being made to decarbonize and electrify. The videos could be seen on cable television, streaming applications and on social media throughout the fall.

Images from public power awareness videos

NEXTZERO



Carbon Accounting Model Developed

MMWEC, together with its decarbonization and energy efficiency partner, the Center for EcoTechnology (CET), developed a model designed to help MLPs devise carbon-based incentives for MMWEC's NextZero program. With the help of a grant from the American Public Power Association (APPA) Demonstration of Energy & Efficiency Developments (DEED) program, MMWEC, CET and Shrewsbury Electric and Cable Operations (SELCO) produced a report detailing the model. The model is designed to help MMWEC's Members set energy efficiency and electrification incentives at levels that are fully aligned with the Commonwealth's decarbonization objectives. Using carbon as the metric, the model determines incentive levels and compares carbon benefits from a range of measure types, including efficiency, electrification, renewable energy, demand response and storage. It also calculates economic impacts of the installed measures for the customer and the utility. This innovative new tool will be critical for the MLPs to best determine how to use their resources most effectively to achieve maximum decarbonization.

Heat pump

Feasibility Study for Tariffed On-Bill Financing Completed

In another effort to help advance decarbonization and electrification, while keeping costs as low as possible, MMWEC worked with the Ipswich Electric Light Department (IELD) and CET as part of a feasibility study, funded in part by the Massachusetts Clean Energy Center, examining tariffed on-bill financing (TOB). Under TOB, the utility covers the cost of the residential efficiency upgrades and charges customers a monthly tariff that is less than or equal to what their energy bills currently are. The tariff, tied to the electric meter of the home, is extended until the utility recovers the investment it spent.

If a homeowner or renter moves, the tariff stays with the property, adding an extra incentive for owners of rental properties to complete weatherization and decarbonization measures. It is hoped that this study will be the first step in the development of another innovative program designed to reduce hurdles, such as up-front costs, to implementing decarbonization measures.

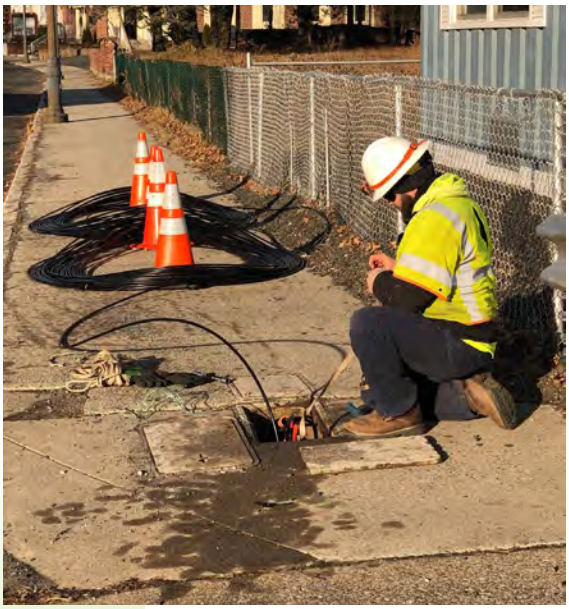
Pooled Loan Program Offers Financing Flexibility

MMWEC's Pooled Loan Program, created in 2014 through MMWEC's unique legislative authority, continues to offer MMWEC Member light departments an alternative financing option for energy facilities and equipment.

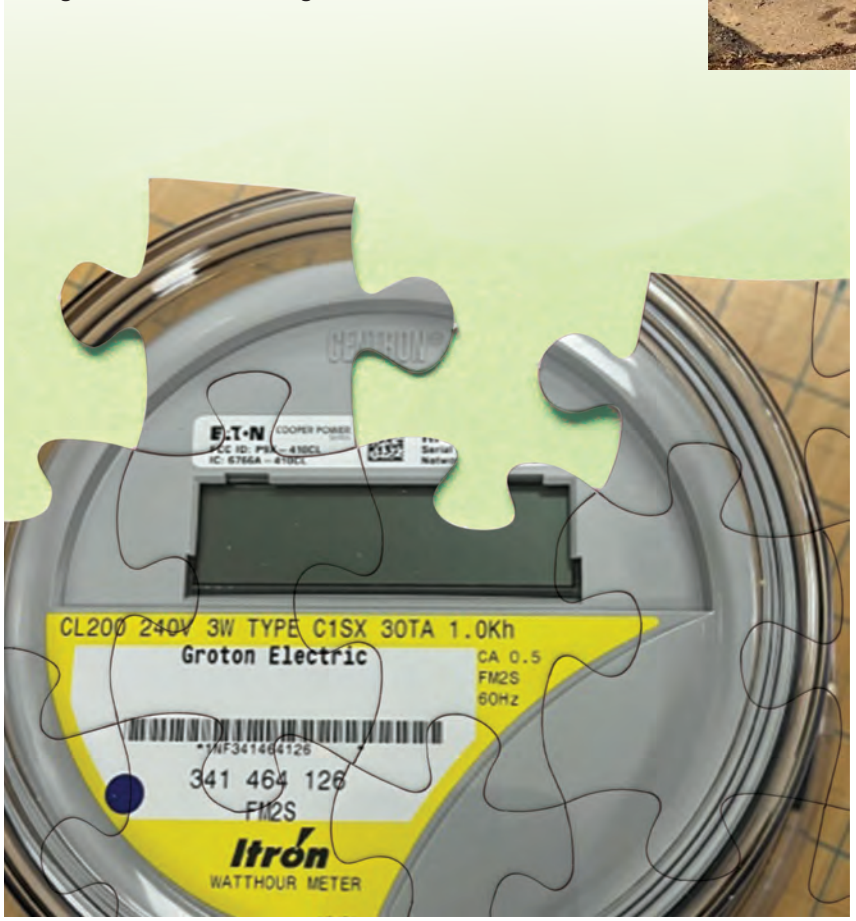
The program, designed by MMWEC with Department of Public Utilities approval, allows Member light departments the opportunity to tap into various financial tools, including bonds, leases and loans, to finance projects to reduce their overall costs. The program's structure and flexibility are unique among other financing programs offered by joint action agencies across the country. Some of the benefits of the program include the ability of MMWEC to issue tax-exempt debt, which leads to lower rates for the participants.

To date, 10 MMWEC Members have tapped into the Pooled Loan Program to fund 14 projects. They include projects such as energy storage systems, wind and solar facilities and substations. In 2022, Groton Electric Light Department took advantage of the program for its advanced metering infrastructure (AMI) project, which it uses for on-demand meter reading, demand response, bi-directional metering for solar integration, time-of-use rates, and dynamic pricing. In total, nearly $70 million has been financed through the Pooled Loan Program.

Through the Pooled Loan Program, MMWEC uses its history of accessing the public bond market and of negotiating and implementing cost-effective bank lending agreements to provide Members with lower all-in financing costs. The program benefits from economies of scale in the financing process, as well as MMWEC's name recognition with bank lenders and investors.



South Hadley Electric Light Department employees installing fiber for the department's Fiberspring network



Advocating for Competitive Transmission

MMWEC staff were busy on the legislative front advocating on behalf of the organization and public power, at the state, regional and national levels. As MMWEC assists the MLPs in planning their future power portfolios to incorporate additional clean energy, there will be a need for an extensive transmission buildout to accommodate this new generation, including extensive offshore wind. A planned solicitation for the independent procurement for transmission would result in savings to customers. In addition, MMWEC's tax exempt financing authority makes it an ideal transmission owner. Staff engaged state lawmakers, the administration and other stakeholders to advocate for such a competitive transmission process in 2022.

MMWEC also led a regional public power effort at the Federal Energy Regulatory Commission (FERC), pushing for a competitive transmission procurement process as a way to keep costs manageable for consumers. FERC filed a Notice of Proposed Rulemaking (NOPR) proposing substantial changes to the transmission planning protocols used by independent systems operators, including ISO New England, calling for a longer-term forward-looking transmission planning process. MMWEC, along with its counterparts in other New England states, filed comments supporting the NOPR's forward-looking planning improvements, and urging that FERC double down on its longstanding policy favoring competition in transmission development.

Environmental Justice at the Forefront

With the concept of environmental justice moving to the forefront of efforts to mitigate climate change, MMWEC has been proactive in assisting its Members with addressing environmental justice issues locally and considering it as part of the light departments' operations. Following the passage of the 2021 climate bill in Massachusetts and the establishment of environmental justice criteria, MMWEC staff got to work on guiding the light departments on ways to incorporate environmental justice considerations into the way they do business. MMWEC brought the Baker Administration's environmental justice experts to the 2022 MMWEC Annual Conference to educate Members about the issue. In addition, MMWEC developed environmental justice plan templates for each Member to both outline their current efforts and suggest new ways to address environmental justice concerns. Several MMWEC Members also incorporated environmental justice commitments into board resolutions or mission statements.

Shrewsbury Electric Light and Cable Operations promotes its electric vehicle offerings at a farmer's market

Center for EcoTechnology's Christina Bicksler discusses induction cooking at Ipswich Electric Light Department's Summer Sustainability Showcase

Financials

Overview of the Financial Statements

MMWEC is a public corporation and a political subdivision of the Commonwealth of Massachusetts formed to be a joint action agency to develop a bulk power supply for its Member Massachusetts cities and towns having municipal electric systems and other utilities. Among other things, MMWEC is authorized to construct, own or purchase ownership interests in energy facilities and to issue revenue bonds for such purposes.

The accounting records of MMWEC are maintained using the Governmental Accounting Standards Board (GASB), the Uniform System of Accounts of the Federal Energy Regulatory Commission and the Generally Accepted Accounting Principles of the United States using the economic resources measurement focus and the accrual basis of accounting. Application of the accounting methods for regulatory operations is also included in these financial statements.

MMWEC's financial statements include the Balance Sheets, Statements of Revenues, Expenses and Changes in Net Position, and Statements of Cash Flows.

A summary of MMWEC's Condensed Balance Sheets is presented in Table 1. The Balance Sheets report year-end assets and liabilities based on the original cost adjusted for any depreciation, amortization or unrealized gains/losses as appropriate. The majority of MMWEC's Balance Sheet consists of the financial activity relating to various energy generation facilities (Projects) representing ownership interests in various electric generation facilities for which MMWEC has corresponding power sales agreements with each Project Participant.

The Condensed Statements of Revenues, Expenses and Changes in Net Position are summarized in Table 2. The Statements of Revenues, Expenses and Changes in Net Position present MMWEC's operating revenues and expenses incurred as a result of MMWEC's business activity. The majority of MMWEC's Statements of Revenues, Expenses and Changes in Net Position consist of the financial activity relating to revenues and expenses from MMWEC's Projects and bulk power supply program. Project revenues are derived primarily from Power Sales Agreements with MMWEC's Members and other utilities that are Participants in a Project. MMWEC's bulk power supply program consists of power purchase arrangements, power brokering services, related planning and other financial services.

The Condensed Statements of Cash Flows are summarized in Table 3. The Statements of Cash Flows report the cash provided by and used in operating activities, as well as investing activities and capital and noncapital related financing activities. The majority of MMWEC's Statements of Cash Flows consist of the financial activity related to the purchases, sales and maturities of investments, and financing activities for MMWEC Projects.

GASB Statement No. 91 "Conduit Debt Obligations" (GASB 91) addresses accounting and reporting for certain conduit debt obligations. GASB 91 is effective in fiscal year 2022 for MMWEC and has been applied retroactively to December 31, 2021. As a result, certain prior year data has been revised to conform to the current year's presentation with no impact on Net Position.

Table One: Condensed Balance Sheets

	2022	Restated 2021	2020
		(in thousands)	
Current assets, less current portions of designated and restricted special funds including interest	$ 114,376	$ 100,317	$ 90,377
Restricted special funds, including interest receivable and current portion of restricted special funds	69,730	88,961	33,225
Other assets	316,415	375,795	375,843
Capital assets	587,177	548,733	536,884
Deferred outflows of resources	94,527	83,589	80,708
Total assets and deferred outflows of resources	**$ 1,182,225**	**$ 1,197,395**	**$ 1,117,037**
Current liabilities, less current maturities of long-term debt and accrued interest	$ 174,418	$ 173,686	$ 158,729
Long-term debt, net of premiums, including current maturities and accrued interest	73,775	73,648	40,178
Noncurrent liabilities	298,921	267,195	252,452
Deferred inflows of resources	635,111	682,866	665,678
Total liabilities and deferred inflows of resources	**$ 1,182,225**	**$ 1,197,395**	**$ 1,117,037**

Table Two: Condensed Statements of Revenues, Expenses and Changes in Net Position

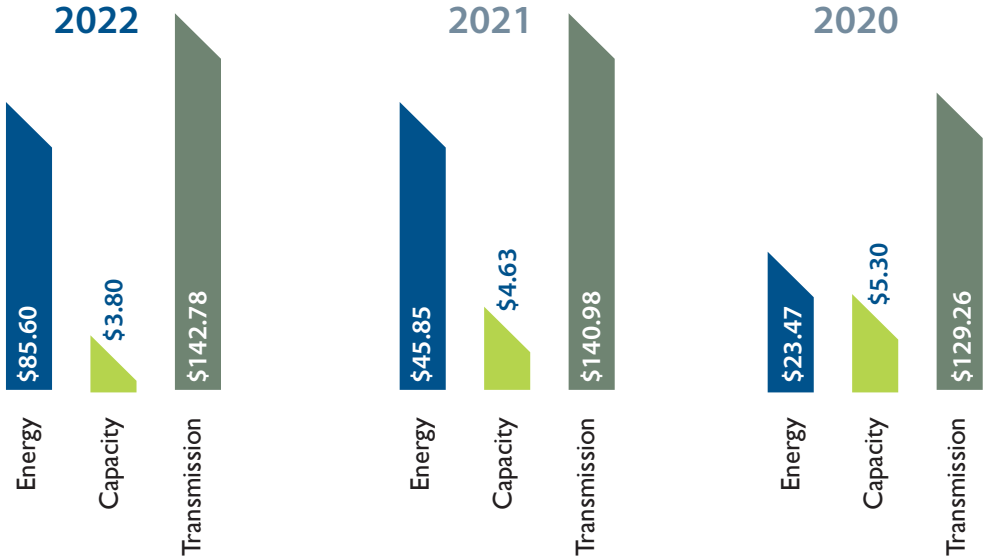
	2022	Restated 2021	2020
		(in thousands)	
Operating revenues	$ 305,235	$ 240,662	$ 227,889
Depreciation expense	21,838	21,164	21,708
Other operating expenses	287,958	223,983	216,637
Total operating expenses	309,796	245,147	238,345
Operating income (loss)	(4,561)	(4,485)	(10,456)
Investment income (loss)	(35,091)	19,272	19,271
Loss on sale of property	(4)	-	-
Interest and amortization expense	(1,910)	(384)	(1,576)
Other nonoperating expenses	-	(695)	-
(Increase) Decrease in amounts payable under terms of the power sales agreements	41,566	(13,708)	(7,239)
Total non-operating income	**4,561**	**4,485**	**10,456**
Change in net position	$ -	$ -	$ -

Financials

Table Three: Condensed Statements of Cash Flows

	2022	Restated 2021	2020
		(in thousands)	
Net cash provided by operating activities	$ 32,714	$ 47,943	$ 27,688
Net cash provided by (used in) investing activities	25,199	(8,870)	(15,090)
Net cash provided by (used in) capital and related financing activities	(56,712)	56,040	(28,625)
Net cash used in noncapital financing activities	(30)	(40,421)	(945)
Net change in cash and cash equivalents	1,171	54,692	(16,972)
Cash and cash equivalents — beginning of year	**$ 91,395**	**$ 36,703**	**$ 53,675**
Cash and cash equivalents — end of year	**$ 92,566**	**$ 91,395**	**$ 36,703**

Snapshot of Market Drivers



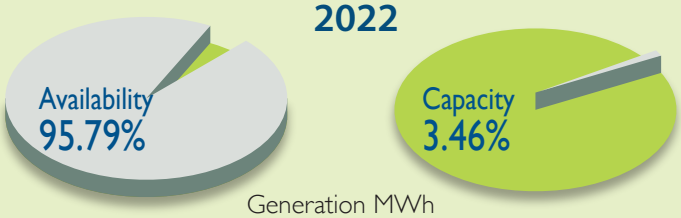
Note: Energy is based on average monthly locational marginal prices per megawatt hour for all-hours day-ahead and real-time markets for all Massachusetts zones. Capacity is based on forward capacity market clearing price per kilowatt month effective June 1 of each year. Transmission is based on regional network rate per kilowatt year effective January 1 of each year.

MMWEC Project Operations

The following tables provide operating information for the MMWEC Projects for the years ended December 31. Availability refers to the percentage of time the Projects were available or ready for operation over the year. Capacity, or capacity factor, is the percentage of time the Projects were dispatched, or operating, over the year.

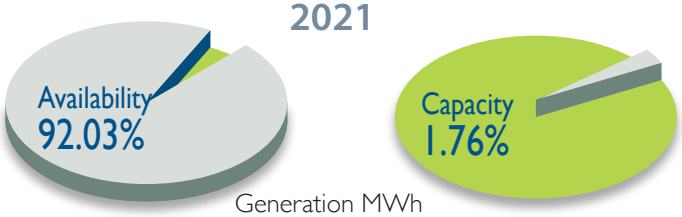
Stony Brook Intermediate

2022



Generation MWh
94,440

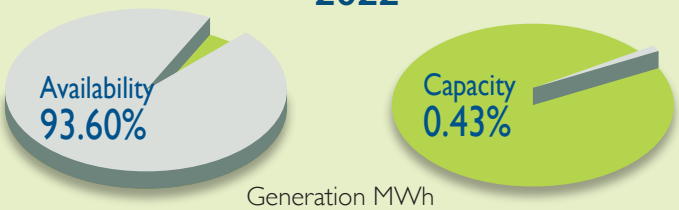
2021



Generation MWh
47,947

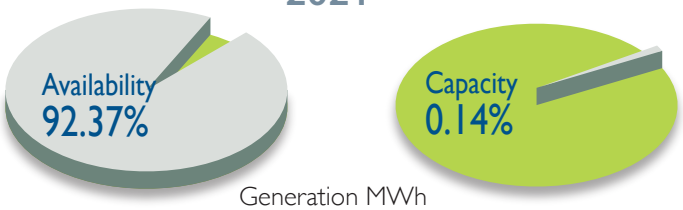
Stony Brook Peaking

2022



Generation MWh
6,046

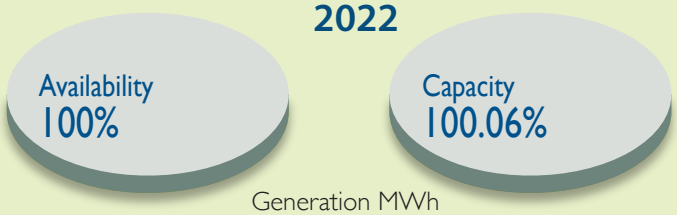
2021



Generation MWh
1,904

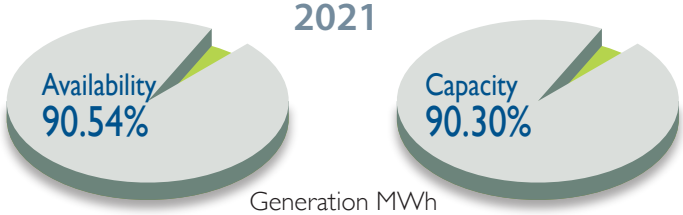
Seabrook

2022



Generation MWh
1,266,128

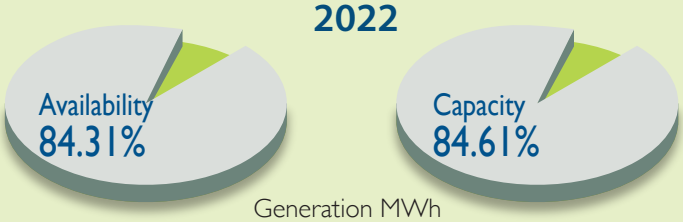
2021



Generation MWh
1,142,599

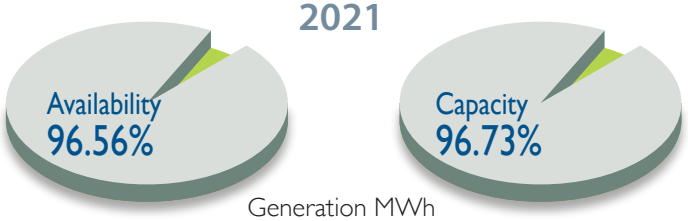
Millstone 3

2022



Generation MWh
433,594

2021



Generation MWh
494,135

Directors

Michael J. Flynn
Chairman, Gubernatorial Appointee and Wilbraham Representative

Charmaine White
Gubernatorial Appointee

Luis Vitorino
Town of Ludlow Representative

Jonathan Blair
Ipswich Electric Light Department Manager

John Driscoll
Templeton Municipal Light & Water Plant General Manager

Kevin P. Kelly
Groton Electric Light Department Manager

James M. Lavelle
Holyoke Gas & Electric General Manager

Tara Rondeau
Paxton Municipal Light Department General Manager

Christopher Roy
Shrewsbury Electric & Cable Operations General Manager

Joseph M. Sollecito
Mansfield Municipal Electric Department General Manager

Officers and Senior Management

Peter D. Dion
President, Wakefield Municipal Gas and Light Department General Manager

Ronald C. DeCurzio
Chief Executive Officer and Secretary

Ryan Barry
General Counsel

Matthew J. Ide
Executive Director of Special Projects and Treasurer

Maria McCarthy
Assistant Treasurer

Kate Roy
Director of Communications & External Affairs and Assistant Secretary

Justin Connell
Director of Energy Markets

Carol A. Martucci
Director of Financial Reporting & Corporate Technology

Brian Quinn
Director of Engineering & Generation Assets

Eric Womack
Director of Business Support & Administrative Services

Members, Project Participants & Program Participants

Ashburnham Municipal Light Plant*

Belmont Light ***

Boylston Municipal Light Department*

Braintree Electric Light Department#

Chicopee Electric Light*

Danvers Electric Division#

Georgetown Municipal Light Department#

Groton Electric Light Department*

Hingham Municipal Lighting Plant#

Holden Municipal Light Department*

Holyoke Gas & Electric*

Hudson Light & Power Department#

Hull Municipal Light Plant*

Ipswich Electric Light Department*

Littleton Electric Light & Water#

Mansfield Municipal Electric Department*

Marblehead Municipal Light Department*

Middleborough Gas & Electric Department#

Middleton Electric Light 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 Light Plant*

Westfield Gas & Electric#

Pascoag (RI) Utility District#

Green Mountain Power (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 Member, Project Participant & Program Participant*

** *MMWEC Member*

*** *MMWEC Program Participant*

\# *MMWEC Project Participant*

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 is also the operator and principal owner of the Stony Brook Energy Center, a 527-megawatt combined-cycle generating station located on its Ludlow, Massachusetts campus.

MMWEC
MASSACHUSETTS MUNICIPAL
WHOLESALE ELECTRIC COMPANY
Public Energy Partners

Copies of the 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
Ludlow, MA 01056
Email: mmwec@mmwec.org
Web: www.mmwec.org

MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC COMPANY

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