MARBLEHEAD MUNICIPAL LIGHT DEPARTMENT

To the citizens of Marblehead,

The Marblehead Municipal Light Department (MMLD) is pleased to share its 129th annual report and financial statements for the calendar year ending December 31, 2023.

Top-line Results:

	2022	2023	2022-23 % Change	2017-21 5 Yr. Average	2022 vs 5 Yr. Avg. % Change
MMLD Energy Sales (MWh)	100,689	96,828	-3.8%	101,600	-4.7%
Energy Sales Revenue $	$19,786,738	$21,452,243	8.4%	$17,864,717	20.1%

	2022	2023	2022-23 % Change
MMLD Summer Peak	August 7th 5-6 PM 29.7 MW	July 28th 3-4 PM 26.6 MW	-10.4%
MMLD Winter Peak Demand	1/11/22 6-7 PM 21.1 MW	2/4/23 5-6 PM 20.8 MW	-1.4%
Highest Monthly Energy Use	August 11,807 MWh	July 11,780 MWh	-0.2%
ISO-NE System Peak Demand	August 8th 3-4 PM 24,395 MW	Sept 7th 5-6 PM 24,016 MW	-1.6%
MMLD Demand Co-incident with the ISO-NE Peak	29.5 MW	24.5 MW	-16.9%

2023 – Ongoing Changes in Our Electric Power Portfolio

In 2023 MMLD participated in two new projects initiated by our state's municipal power joint action agency, the Mass Municipal Wholesale Electric Company (MMWEC). The most significant new project is a new Power Purchase Agreement (PPA) for nuclear energy that starts in 2028 and continues through 2049. This significant new addition will deliver us over 26,000 MWh of carbon-free energy per year, a load that's equal to 25% of our 2023 power use. A second new 2023 PPA will provide us carbon-free hydropower from Connecticut beginning 2024. This PPA will begin providing us an amount of energy nearly 5% of our 2023 power use. We've also experienced delays. Most notably, offshore wind project negotiations did not result in a finalized agreement in 2023. And supply chain and interconnection issues have delayed the commercial operation date (COD) of the Cotton Memorial Solar PV array in Ludlow, Mass., from June 2022 to 2024. Below is a comparison of our power portfolio in 2023 and 2022:

Power Generator	2022 Actual Energy (MWh)	2023 Actual Energy (MWh)	Percent Change
Millstone Nuclear	13,951	12,704	-9%
Seabrook Nuclear	14,755	12,882	-13%
NY Power Authority Hydro	8,093	7,858	-3%
Hydro-Quebec	6,570	6,570	0%
Berkshire Wind 1	2,180	1,464	-33%
Berkshire Wind 2	1,328	1,272	-4%
Hancock Wind	2,341	2,076	-11%
Eagle Creek Hydro	1,789	2,542	42%
Stony Brook Intermediate	2,793	446	-84%
Hedged Power Contracts	21,769	33.988	56%
ISO Interchange Spot Market	30,838	21,012	-32%
Marblehead Wilkins Plant	109	62	-43%
Stony Brook Peaking	97	85	-12%
Total Wholesale Energy Supply	**106,613**	**102,961**	**-3.4%**

Tracking the Carbon-Free Percent of our Power Portfolio

The Massachusetts law establishing clean energy goals for municipal light plant towns was passed in 2021. The statute requires MMLD sales to customers include 50% carbon-free energy by 2030, 75% by 2040, and net-zero emissions by 2050. In May 2023, the MMLD Board voted to adopt more aggressive goals: to reach 70% carbon-free energy sales by 2028, 85% by 2033, and net zero by 2040.

Approved carbon-free power sources generate renewable energy certificates (RECs), or emission free energy certificates (EFECs) that correspond to the carbon-free electricity they generate. These certificates must be retired (held), not sold, for the energy generated to be considered carbon-free. **In applying the 2021 Mass law to MMLD's 2023 energy sales, the carbon-free percentage is 42%, a decrease of 2% from 2022.**

MMLD Carbon-Free Wholesale Power Sources	2023			
	Energy (MWh)	RECs/ EFECs held	RECs sold	Energy purchases without RECs
Millstone 3 Nuclear	12,704	**12,704**		
Seabrook Nuclear	12,882	**12,882**		
NY Power Authority Hydro	7,858	**7,858**		
Hydro-Quebec	6,570	**6,570**		
Berkshire Wind 1	1,465		1,465	
Berkshire Wind 2	1,272		1,272	
Hancock Wind	2,077			2,077
Eagle Creek Hydro	2,542			2,542
Carbon-Free Supply Total	47,370	**40,014**	2,737	4,619
MMLD Solar rebate RECs held		124		
Go Green Now! Program Customer REC Retirements		288		
Total RECs & EFECs held/retired		**40,426**		
MMLD Total Retail Sales (MWh)		96,828		
MMLD Carbon-Free %		**42%**		

2023 Department Actions and Initiatives

January

- The Department implemented the first phase of an electric rate restructuring plan approved by the MMLD Board in 2022. The restructuring objective is not designed to raise revenue, but to increase the base rates across all metered rate classes, while lowering the kwh energy rates, to improve the coverage of MMLD fixed expenses with the base rate revenues and variable energy expenses with energy rate revenues.
- The MMLD Board approved $50,000 to assist qualifying low-income customers pay their electric bills. Administration of this assistance program is managed by the North Shore Community Action Program (NSCAP), using guidelines developed for the administration of the Federal Low Income Heating Assistance Program (LIHEAP).

February

- New computer server hardware was installed at 80 Commercial St in conjunction with a major Advanced Metering Interface (AMI) software upgrade by MMLD's AMI vendor Nexgrid LLC., of Fredericksburg, VA.

March

- *The American Public Power Association (APPA) recognized MMLD with a 2022 Certificate of Excellence in Reliability, based on national reliability data collected by APPA, and applying the reliability guidelines developed by the Institute for Electrical and Electronics Engineers (IEEE 1366). MMLD was recognized for a System Average Interruption Duration Index (SAIDI) of under 38 minutes for all outages in 2022. The MMLD 2022 SAIDI figure is a 19% reduction in outage duration (i.e., shorter outage durations) versus the average SAIDI of the 66 New England-based municipal utilities participating in the survey and a 52% shorter outage duration than the 100+ similar sized municipal utilities participating in the survey nationwide.*
- The MMLD Board voted to participate in the MMWEC-led "Behind-The-Meter" Battery Electric Storage System (BESS) Project, with 14 other municipal light departments. MMLD specified a 5 MW/20MWh BESS, with a shared savings business model that requires a smaller site development and interconnection investment by MMLD and leaves the capital costs for the BESS purchase and installation to the BESS vendor. The MMWEC financial model for the project indicates a positive 20-year Net Present Value of $9.8 million, or an average saving of $600,000/year, achieved by lowering our annual ISO-NE grid expense for wholesale power transmission and capacity expenses. The site designated for

the BESS is within the 6.5-acre parcel MMLD acquired in 2021 by Town Meeting vote. The MMWEC competitive bid process to select the winning BESS vendor was won by Delorean Power of Arlington, Virginia

- A contract for the purchase of two new transformers at the Village 13 substation was signed with Virginia Transformer, of Roanoke, Virginia, for $2.63 million, to replace the existing Village 13 transformers, installed in 1969. The new transformers will increase the capacity of electricity transmitted into Marblehead by 50%, with new switchgear options designed to increase the effective capacity even more. The Village 13 substation is an essential asset in the distribution of electricity in Marblehead…it is the substation through which all grid-transmitted electric power flows into Marblehead.
- The MMLD Board ratified participation in MMWEC Project 2023A, to acquire 3 MW of Around-The-Clock (ATC) power, with the associated environmental credits, from the Seabrook Power Plant majority owner NextEra. The term of the power purchase agreement (PPA) is from 2028 to 2049. The 3 MW ATC agreement translates to over 26,000 MWh of carbon-free wholesale energy per year supplied, which equates to 25.5% of MMLD's 2023 wholesale power use.
- MMLD began discussions with Solect Energy, LLC of Hopkinton, MA, and Power Options, of Boston, MA to install solar PV arrays on Marblehead public schools, beginning with the Brown Elementary School and Marblehead High School (MHS). The first-year carbon-free energy generated by the Brown School solar PV array is estimated at 279 MWh/year, and the MHS solar PV array is estimated to generate 838 MWh/yr. The combined first year output equates to 1.1% of MMLD's 2023 wholesale power use.
- The MMLD Board broadened the Go Green Now! Program to include commercial customers. The first commercial customer is QBE Insurance, located on Pleasant Street. The Go Green Now! Program now provides ALL MMLD customers with a simple way to apply the 2021 Mass carbon policy law to ensure their monthly electric consumption is 100% carbon-free.
- The Mass Environmental Policy Act Office (MEPA) approved the Single Environmental Impact Report (SEIR) submitted by the Marblehead Shipyard Resiliency Improvements Project Team, to construct new, higher seawalls in the Marblehead shipyard area, including the seawalls at Hammond Park/ 80 Commercial St., Parker's Boatyard, the Commercial St dock, the Marblehead Yacht Club, and the Cliff St Boatyard (Marblehead Trading Company), in response to the forecasted rise in sea level. The study area includes contiguous parcels of land all owned by the Town of Marblehead. This study has been funded with a two-year grant (2023-24) from the Mass Office of Coastal Zone Management. The 75% design capital cost estimate for the total project is $13.8 million, of which $4.4 million is for a new seawall and boardwalk at Hammond Park/80 Commercial Street.

April

- Working Foreman Greg Chane is promoted to the Distribution Manager position.

May

- IUE-CWA Local 81214 (International Union of Electrical Workers-Communications Workers of America), representing more than two thirds of MMLD employees, and GM Joe Kowalik completed negotiations for a new three-year collective bargaining agreement from July 1, 2023, to June 30, 2026.
- Only one bid was received to install a new fence and automated gates at 80 Commercial Street. Given the lack of competitive, complete bids the decision was made to re-bid the project.

June

- The monthly power cost adjustment on MMLD customers' monthly bills was dropped from $0.025/kwh to $0.005/kwh. i.e., from 2.5 cents/kwh to 0.5 cent/kwh
- The MMLD Board ratified the contract expense of $25,500 to hire Bayside Engineering of Woburn, MA. to design a precast concrete land bridge to protect the force main sewer pipe that runs adjacent to the Village 13 substation. The South Essex Sewer District, the Marblehead Water & Sewer Dept., and MMLD jointly agreed that the land bridge was needed to prevent damage to the sewer pipes from the heavy truck loads traveling over the pipe, including two 100-ton trailers that will carry new transformers into the Village 13 substation in 2024.
- The detailed designed drawings for both the Village 13 transformers and switchgear are approved by MMLD's electric power engineering design firm, PLM, of Middleborough, MA.
- MMLD GM Joe Kowalik signed the MMWEC member participation agreement for the 2028-2049 purchase of 3 MW of Around-the-Clock power supplied primarily from the Seabrook Power Plant, Seabrook. N.H, by majority owner NextEra Energy Services, Juno Beach, FL.
- A new bid is re-issued for 80 Commercial St fence and automated gates, that includes new child-safe seawall railings in Hammond Park.

July

- The lowest price qualified bidder to install fence and gates at 80 Commercial St., including child-safe seawall railings at Hammond Park, was Premiere Fence of Canton, MA. The winning low bid came in at $348,995, that includes $43,772 for child-safe seawall railings. The child-safe railing expense will be reimbursed by Mass CZM grant funds, as part of the Marblehead Shipyard area Resiliency Project.

- The Board voted to approve $235,000 for capital improvements to the exterior of 80 Commercial Street that we not included in the 2016-18 renovation.
- The Board ratified the decision to spend $50,00 to replace substation circuit meters at the Commercial substation.

September
- MMLD agreed to purchase 2 MW of ATC hydropower from First Light Power of Burlington, MA. generated by hydropower plants on the Connecticut River in CT. The agreement is for six years, 2024 to 2029, and includes qualifying clean energy RECs with all power purchased (Maine class 2 RECs). The estimated annual energy to be delivered is 5,076 MWh/year, which equates to 4.9% of MMLD's 2023 wholesale power use.
- An MMLD line crew and supervisor traveled to Calais, Maine, in response to a mutual aid request from the Eastern Maine Electric Co-op. The outages were caused by storm-driven high winds knocking down utility poles and lines.
- The MMLD Board voted to promote the connection of customer-installed UL Certified battery electric storage systems (BESS) that comply with the requirements of Massachusetts building and fire codes and any Marblehead-specific requirements. Customers who enroll a battery in the MMLD Connected Homes Program will be eligible for any applicable MMLD battery rebates, in addition to any MA state or Federal rebates.
- The MMLD Board voted to reduce the Go Green Now rate from $0.022/kwh to $0.020/kwh. The Go Green Now! rate is applied in addition to the customer's applicable residential, commercial, or industrial rate.

October
- Myers Controlled Power LLC., of North Canton, Ohio, the manufacturer of the new Village 13 switchgear, informed us there would be a three-month delay in the delivery of MMLD's new Village 13 switchgear, to September 2024.
- GM Joe Kowalik participated in the Town-wide committee to update the Town of Marblehead's Hazard Mitigation Plan to be submitted to FEMA. A FEMA-approved plan enables the Town to apply for pre-disaster mitigation grants funding.

November
- The MMLD Board ratified implementation of the second phase of electric rate restructuring, to again increase monthly base rates for all metered rate classes while reducing the electric (kwh) rates. The new residential monthly base rate is to be increased to $18.50 from $11.25 and the residential energy (kwh) rate is to

be reduced from $0.1969 to $0.1895 per kwh. These new rates are scheduled to go into effect with the January 2024 bills.

- MMLD Finance Manager Matt Barrett presented a 2024 operating budget of $21,687,000 to the Board (adjusted to $21,695,000 in December), vs YTD 2023 actual of $21,415,000.
- In anticipation of future rate changes that will require the use of digital electric meters, the MMLD Board voted to end the use of the 30 analog residential meters still in use in Marblehead.
- In a comprehensive review of MMLD insurance coverages with our captive insurance carrier, the Public Utility Risk Management Association (PURMA) and our Town insurance Administrator Jennifer Smith, two gaps were noted in MMLD insurance coverage to address: Inadequate Cybercrime Coverage (an insurance wide problem due to insurance carriers placing limits on coverage) and environmental impairment liability coverage (to be addressed by MMLD).
- The $348,995 contract for the installation of fence and gates at 80 Commercial St with Premiere Fence of Canton, MA was finalized and signed.

December

- MMLD contracted with executive search firm Stanton-Chase, Boston, MA to assist in the filling of two new manager-level positions in MMLD: an Information Systems & Technology Manager position and a Capital Projects Manager.
- For the second time in four months an MMLD line crew and supervisor traveled to Calais, Maine to respond to a mutual aid request from the Eastern Maine Electric Co-op. The outages were caused by the December 18th storm with high winds that knocked down utility poles and lines.
- The MMLD Board voted to approve a contract with Upnine LLC of Norwell. MA to provide MMLD with proactive monitoring and remediation of MMLD's town-wide fiber optic data communications network that transmits customer meter data.

Year-long Key Activity Summaries

- Preventive maintenance of our distribution system by MMLD line crews is a year-round responsibility. In 2023 55 new electric utility or light poles were replaced or added town wide. 53 pole installations were pole replacements, including preventive maintenance, poles damaged in auto accidents, storm damage and old pole replacements. Two poles were installed in new locations, in support of new electric service upgrades.
- In 2023 nine residential customers added solar PV arrays to their homes, bringing the total number of residential and commercial customers with solar PV arrays to 83. The total solar PV array nameplate capacity of the 83 installations is 721 kW, an increase of 13% from 638 kW in 2022. The 2023 renewable energy MMLD purchased from these customers was 439 MWh, a 53% increase from 286 MWh in 2022.
- In 2023 MMLD continued to operate and maintain 10 public Level 2 EV charging ports in three locations: two charging ports at the MMLD main office at 80 Commercial St, four ports at the Mary Alley Building front parking lot on Widger Road, and four ports at the Anderson Street-end of the Round House Road public parking lot. 2023 was the second full year of 10-port operations.

Public EV Charging @ 10 stations Annual Summary	2022 Actual	2023 Actual	Year-on-Year Percent Change
Unique Drivers	240	384	60%
Charging Sessions	1,415	2,041	44%
Charging Energy Used (MWh)	18.8	32.2	71%
Tons of Greenhouse Gases Reduced	14.7	25.4	73%
Electricity Sales Revenue	$5,520	$9,924	80%

- MMLD's Residential Scheduled EV Charging Program, gives Marblehead EV owners a ChargePoint Flex Residential EV absolutely free when they agree to enroll in our scheduled charging program. Its goal is simple: provide EV owners with an incentive not to charge their EV during the peak hours, 5-9 pm, on weekdays. Customers can still plug their EV into the charger when they arrive at home in the early evenings. The Scheduled Charging program software will automatically curtail EV charging at 5 pm and automatically resumes recharging your EV after 9 pm. The program simply delays the start of your nightly charging until after the peak hours of the day, while still giving your ChargePoint EV charger plenty of night-time hours to recharge your EV battery for the next day.

Here's how Program's participation has grown in the past year.

Residential Scheduled EV Charging Program Enrollments by Year	Annual Enrollments	Cumulative Enrollments
2017	3	3
2018	5	8
2019	5	13
2020	14	27
2021	15	42
2022	34	76
2023	**25**	**101**

MMLD is keenly aware that perhaps only 1 in 4 EV owners in Marblehead are participating in this program. If you now own or are considering an EV purchase, we urge you to call our office at 781-631-5600 to join this important townwide initiative. Details on our website at www.marbleheadelectric.com

- MMLD participates in the MMWEC-sponsored NextZero Program, an expansion of the earlier Home Energy Loss Prevention Services (HELPS) Program. In 2023, 93 homeowners received free home energy efficiency audits, an increase from 60 in 2022.
- In 2023 the MMLD NextZero Program offered Marblehead residents a variety of cash rebates of up to $500.

Next Zero Program Customer Rebates	Participants	Rebate Dollars
Energy Star Appliances	130	$14,400
Cool Homes Program (Heat Pumps)	34	$16,000
Home Efficiency Incentives (HEI)	9	$4,500
WiFi Thermostats	12	$981
Battery Operated Lawn & Yard Equipment	52	$3,150
Program Totals	237	$39,031

For details of available rebates, visit www.marbleheadelectric.com
or www.nextzero.org/marblehead/

- In 2022 MMLD added an Air Source Heat Pump consultation service, which provides customers with relevant, practical information about heat pumps and their applicability in Marblehead homes. Participating customers receive heat pump sizing and contractor design review services. In 2023, 38 MMLD customers took advantage of this program, an increase of 65% from 23 in 2022.

MMLD Employee Recognition

MMLD's most important asset remains our highly skilled workforce. The focus and dedication of our employees is essential to our mission: to deliver reliable, cost competitive and environmentally responsible electric power to Marblehead customers, while ensuring a safe and healthy work environment for employees and customers alike.

We're pleased to recognize the following employee work anniversaries in 2023:

- Lead Meter Specialist Didi Rubano celebrated her 15th year anniversary.
- General Manager Joe Kowalik celebrated his 5th year anniversary.

New hires in 2023 include:

- First Class Lineman Scott Kent
- Second Class Lineman Joe Snow

Respectfully submitted,

Joseph T. Kowalik, General Manager
Lisa Wolf, Commission Chair
Simon Frechette, Commission Vice Chair
Jean-Jacques Yarmoff, Secretary
Michael A. Hull, Commissioner
Adam Smith, Commissioner

BALANCE SHEET

For the year ending December 31, 2023

Assets

Plant Investments		$	19,368,449
Current Assets:			
Cash - Operating	7,639,096		
Petty Cash	500		
Construction	0		
Accounts Receivable	3,550,859		
Materials & Supplies	247,491		
Total Current Assets			11,437,947
Depreciation Fund			7,107,473
Insurance Escrow Account			1,032,894
Hydro Savings Reserve			0
MMWEC - NEPEX Reserve Trust			534,459
Rate Stabilization Reserve			957,920
Consumer Deposits			230,281
Prepayments			1,704,100
Pooled Financing Reserve-MMWEC			462,194
MMWEC 2015A Peabody Project			379,435
Deferred Outflows-Pensions			1,653,650
Deferred Outflows-OPEB			922,396
Total Assets		$	45,791,196

Liabilities And Surplus

Accounts Payable:			
Depreciation	$ 48,693		
Operating	1,690,635		
Consumer Deposits	3,200		
Total Accounts Payable		$	1,742,528
Consumer Deposits			227,081
Bonds Payable			3,701,507
Accumulated Provision For Rate Stabilization			2,457,920
Reserve-MMWEC Reserve Trust			534,459
Net Pension Liability			5,177,809
Deferred Inflows-Pensions			2,461,568
Deferred Inflows-Opeb			4,569,006
Reserve for Uncollectible Accounts			438,309
Reserve for Future Compensated Absences			110,344
Opeb Liability			4,006,188
Contribution In Aid For Construction			214,733
Unappropriated Earned Surplus			20,149,745
Total Liabilities And Surplus		$	45,791,196

NOTE: Financials are calendar year based and subject to MMLD independent audit

STATEMENT OF INCOME

For the year ending December 31, 2023

Operating Revenue		$	21,432,136
Less Expenses:			
Operating	16,864,728		
Maintenance	1,728,824		
Depreciation	2,096,446		
Total Expenses			20,689,998
Operating Income			742,138
Investment & Interest Income			446,943
Less Interest on Long Term Debt			125,152
Net Income Transferred to Surplus		$	1,063,928

STATEMENT OF SURPLUS

For the year ending December 31, 2023

Balance December 31, 2022	$	17,293,676
Add: Credit balance transferred from income		1,063,928
Subtotal		18,357,605
Deduct: Amount transferred to Town Treasurer		
Strategic electrification fund		-
Payment in Lieu of Taxes (PILOT)		(330,000)
Yearend 2022 Auditor Adjustment		2,122,140
Balance December 31, 2023	$	20,149,745

NOTE: Financials are calendar year based and subject to MMLD independent audit

OPERATING EXPENSES

For the year ending December 31, 2023

Power Generation Expenses:		
Fuel	$ 32,766	
Misc. Other Power Generating Expense	3,904	
Maint. of Other Power Generation	120,242	
Total Power Generation Expense		$ 156,913
Power Supply Expenses:		
Electric Energy Purchased	10,486,706	
Misc. Purchased Power Expense	2,616,016	
Total Power Supply Expenses		13,102,722
Distribution Expenses:		
Station Expense - Labor & Other	29,631	
Station Expense - Heat & Electricity	64,562	
Street Lighting	13,407	
Meter Expense - Inspection, Testing, Resetting	103,230	
Customer Installation Expense	48,012	
Misc. Distribution Expense	159,074	
Maintenance of Station Equipment	83,673	
Maint. of Overhead & Underground Lines	1,348,602	
Maintenance of Line Transformers	4,303	
Maintenance of Meters	40,759	
Total Distribution Expenses		1,895,254
Customer Account Expenses:		
Supervision of Customer Accounting	138,655	
Meter Reading - Labor & Expenses	48,012	
Customer Records & Collections	124,041	
Uncollectible Accounts	124,885	
Interest Paid on Consumer Deposits	5,927	
Total Customer Account Expenses		441,520
Advertising, Conservation, Energy Audits		248,766
Administrative & General Expenses:		
Administrative Salaries	216,695	
Office Supplies & Expenses	312,173	
Outside Services Employed	206,100	
Property Insurance	40,169	
Injuries & Damages	490	
Rents	3,521	
Employee's Pensions & Benefits	1,733,745	
Maintenance of General Plant	63,229	
Transportation	77,525	
Miscellaneous General Expense	44,729	
Total Administrative & Gen. Expenses		2,698,377
Total Operating & Maintenance Expenses		$ 18,543,552

NOTE: Financials are calendar year based and subject to MMLD independent audit