

Light Commission November 29, 2022 meeting minutes

To: Light Commission: Commissioners
Light Department: J. Kowalik, General Manager, M. Barrett, Business Manager

From: Jean-Jacques Yarmoff, Secretary

Date: December 14, 2022

Re: Commission Meeting November 29, 2022

A quorum being present, Light Commission Chair Mike Hull opened the meeting at 4:03 pm, the meeting being held both in person and with remote access available to the public. A recording of the meeting is made available to the public at the following [link](#).

Participated in meeting:

Commissioners: Hull, Frechette, Smith and Yarmoff participated in person.
Commissioner Wolf is excused.

Light Department: General Manager Joe Kowalik and Business Manager Matt Barrett.

Financial Updates

The financial updates will cover both the 2022 year-end plans, the rate restructure planned to come into effect in 2023, as well as the 2023 budget of MMLD: all of these plan for a coherent whole.

Planned Year End Results

The current forecast is that we will have an **operating surplus of \$75K**. We are obligated by law to have a surplus. This result comes from the following assumptions.

The **PPA energy charge of 9c per kWh** that was set in October will remain **unchanged** for the rest of the year. There is no plan to increase the PPA charge in December, nor did we increase it in November (as we planned to do and reported at the October Commission meeting). This stabilization of the rates is achieved by using **\$450K from the Rate Stabilization fund**, half of the amount in the fund, to avoid having to raise rates further this year.

The results take into account a non-recurring \$50K payment from an APPA DEED grant related to the NREL study, only received this year. The result further assumes the **2022 charges for benefits and retirement come as per budget**: \$300K for the OPEB benefits charge, and a Pension contribution of \$816K. While actuals are usually received by November 15, we do not have the current numbers. If the actuals that the town sends change materially from these numbers, this will affect our final result.

The result also assumes a **payment of \$330K to the town** that we refer to as a Payment In Lieu Of Taxes (PILOT payment) as a short cut. We should note that as every Town Department, MMLD is exempt from paying taxes, nor are there any obligations under Chapter 164 of MGL, which governs the organization of Municipal Light Plants, to pay taxes or PILOT payments.

PILOT Payment discussion

The General Manager asked the Commission if this PILOT payment was appropriate in view of the current situation of high rates caused by fossil fuel price increases. While a formal decision is not requested at this meeting, the fact that not making this payment is under serious consideration should be mentioned as appropriate to the town: Chair Hull will talk to Select Board Chair Moses, while General Manager Kowalik will talk with the Town Administrator Kezer.

The policy for the payment of the PILOT amount was set a dozen years ago and has been adhered to ever since; it is predicated on MMLD ending the year with a surplus. The fact that MMLD generally ends each exercise with a surplus is predicated by our setting the appropriate rates and adhering to the law.

But MMLD has many other pressing needs to best serve Marblehead residents: we need to upgrade our systems, and we pay for these upgrades from the Depreciation Fund. To avoid too abrupt rate increases, we use the Rate Stabilization Fund. The \$330K PILOT could be used to replenish the Stabilization Fund, or could bolster the Depreciation Fund. Commissioner Yarmoff remarked that the investments needed to upgrade the network are one order of magnitude greater than the PILOT payments, which means that the Depreciation Fund must be funded appropriately through regular depreciation throughout the year, and not through opportunistic payments. In the same vein, it is anticipated that as the price of energy starts to fall in 2023, we can replenish partially the Rate Stabilization Fund. A line item may have to be added to the 2023 budget, maybe on the order of \$300K to replenish the RSF over the year. The Commission concurred that this would be a prudent thing to plan for.

The options for using the expected \$75K surplus, if it materializes, are to – keep it as Operating Cash; – move the money to the Stabilization Fund (usual use of end of year surplus), or – add to the Depreciation Fund. If the PILOT were not made, end of year operating surplus would be around \$400K with the current assumptions. If the end of year results were negative, we could either roll this over into 2023, or lower the PILOT payment.

2023 Budget

The 2023 budget takes MMWEC energy forecast (essentially flat) of 101 000 kWh, assumes a PILOT payment for calendar year 2023 and includes two critical hires, an Assistant General Manager and a Sustainability Manager, in addition to new items to support system capabilities for data acquisition, fiber optics network upkeep and GIS software. Planned capital expenditures include a major critical item (previously approved by the Commission) in the Village 13 substation upgrade for \$6M for the year 2023 fraction. Details are showed on the tables, page 6.

The Commission approves the budget, with the recommendation of adding an extra line for partial replenishment of the Rate Stabilization Fund over the year, as discussed above. This budget also assumes selling class I RECs generated by the Berkshire Wind project. A review of this policy is needed in the near future.

Rate projections for 2023; Implementation of rate structure changes

Given the previous budget and the new rate structure, the projected energy rates for each class of customers is shown at the bottom of page 6. These rates need to be filed with DPU by December 15 to implement them by January 1st. The rates shown lead to a projected revenue of over \$22.6M, in line with the budget for the calendar year 2023.

The slide shows a change in rate for Photovoltaic uptake, which has not been discussed before. A review of the residential Solar Policy of the Department is needed before we implement any rate change on this class of customer. Keeping the rate steady for now is not material to the revenue of MMLD for 2023.

Vote #2022-36 Motion to approve the restructure of the rates as shown on the table at bottom of page 6 (except for Photovoltaic rate which shall remain unchanged) for implementation by January 1, 2023 is moved by Commissioner Smith, seconded by Commissioner Yarmoff.
Unanimous.

Communications

A communication insert has been included with bills for four waves of the paper bills, as well as with the electronic bills. So far, there has been no customer question. MMLD is organizing to have similar communications regularly.

A public information session is planned, potentially on Thursday December 15 rather than December 6, to allow preparation of the load shedding scenarios.

Winter reliability issue

The slides presented from page 7 to 9 have been shared with Marblehead's Departments heads last week. An MMWEC explanatory document is attached at the end of these minutes.

In summary, in the low-probability situation where a long cold snap affects New England this winter, ISO-NE, the grid regulator, may order load shedding. In Marblehead, where we have no other adjustment possibilities, this would mean rolling black-outs. Marblehead needs to be prepared for this low probability event.

The Department has to organize to have operators able to both operate the Wilkins plant (MMLD ordered an extra 5,000 gallons of fuel to run for prolonged periods) and to physically action switches to cut off some of the 22 circuits, in turn, to organize the load shedding in an orderly manner. Essential facilities need to check back-up power plans. The only exception to the load shedding will be for schools, which will not experience a black-out while in session.

Customers are encouraged to know what circuit they are part of, and most importantly to register for CODE RED, and to sign up for both Text, email and voicemail. While there may be some warning that an event is possible, when a load-shedding event is ordered, it is likely that there will be only a few minutes forewarning. MMLD will communicate using CODE RED messages.

Support for residents with low incomes

DPU answered the query of the General Manager regarding "rates for low-income residents" with the example of another Muni which has implemented such rates: it is clearly allowed under DPU's interpretation of MGL Chap 164. MMLD has been working with the North Shore Community Action Program (NSCAP, www.nscap.org) to administer the plan put in place during COVID. The General Manager proposes to expand this program: low-income residents who qualify will get a fixed amount of their energy bill paid for by the program.

Recognition of MMLD staff, APPA Reliability Award

Marblehead submitted information on the reliability of our system to the American Public Power Association: duration, frequency and extent of outages. The APPA keeps a database of these events. This is important as in the case of a FEMA-qualifying storm, only the entities able to track the reliability of their system can qualify for assistance. The award from APPA for reliability (see page 10) is a recognition by this national third party of the work of the whole Marblehead Municipal Light Department and the work of the whole team.

MMLD staff, Paul Camarda and Adam Bernard, were also recognized and thanked for their work contributing to the recovery following hurricane Ian by Florida Public Power (page 10).

Strategy Working Group update

The long term load forecasts will be used for two major uses: an understanding of the long term energy needs (and therefore the contracts that we need to enter into to serve the expected load), and – if granular enough – guidance on grid upgrades. The types of data sets that we will need are described in the enclosed slides (page XX). We met with the Town Administrator, Thatcher Kezer, to explain the exercise that MMLD is entering into. As we discuss the actual data sets at the next meeting, it will be useful to have additional staff from MMLD (Colin X).

The agenda for the meeting having been exhausted, a motion was made to adjourn and adopted unanimously at 6:17 pm.

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Documents and slides shown during Light Commission Meeting 11/29



Financial Situation - Nov 2022

- With our current \$0.090 PPA, our year-end expenses will exceed revenue by \$75K.
- NO NEED to adjust PPA adjustment
- Still waiting on final 2022 OPEB (\$300K in budget) and Pension contribution (\$816 in budget) charges...typically provided in Nov
- Includes \$330 Pilot Payment...better used to replenish our Rate Stabilization Fund or added Depreciation (open Village 13 transformer bids on 12/15)
- Our operating cash position remains solid - \$5.4 million



Financial Situation YTD 2022

	(\$000's)
Total Projected kwh Sales Revenue	\$19,845
Street Lighting	\$98
Misc Revenue	\$22
Total Revenue	\$19,965
Total Projected Expense & Pilot	\$20,389
Net Income	-\$425
Adjustments:	
Rate Stabilization Fund Transfer	\$450
APPA DEED Grant proceeds	\$50
Total Adjustments:	\$500
Adj Net Income	\$75




2023 MMLD proposed budget

Marblehead Municipal Light Department Revenue & Rate Requirement Projection 2023 Using 3% Depreciation (000's)				
Items	Budget 2021	Budget 2022	Projected Actual 2022	Proposed Budget 2023
Total Operating & Maintenance Expense Budget	16,760.0	18,677.0	20,077.0	22,048.5
Surplus Revenues returned to Town of Marblehead	330.0	330.0	330.0	330.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
Revenue Requirement	17,090.0	19,007.0	20,407.0	22,378.5
Projected Sales (Kwh)	101,000.0	101,000.0	101,000.0	101,000.0
Average Rate Required per Kwh Sold	0.16921	0.18819	0.20205	0.22157
Increase / (Decrease) in Mills		0.01898	0.01386	0.01952
% Increase / Decrease Projected Actual to Budget			7.37%	9.66%
% Increase / Decrease Budget to Budget		11.22%		17.74%

New Elements for 2023 budget

19		
20	GIS mapping installation & upgrade consulting	\$20,000 op ex
21	Nexgrid OS Server onsite installation	\$2,000 op ex
22	Nexgrid annual software license upgrade to enable residential TOU & demand	\$10,000
23	UFS rate restructuring analysis	\$20,000 op ex
24	Nortern Data Systems - custom development	\$20,000 op ex
25	Sustainability Manager	\$100,000 op ex
26	Asst GM/IT/GIS Manager	\$130,000 op ex
27	Professional Training,Meetings & Travel	\$25,000 op ex
28	MMLD newsletter	\$10,000 op ex
29	Sertex fiber optic backbone as-built survey and map layer creation	\$25,000
30	Sertex fiber optic backbone monthly monitoring & maintenance	\$10,000
31	Subtotal	\$372,000
32		

	A	B	C
1	MMLD 2023 Budget- New items		
2			
3	Nexgrid Data Server h/w	\$5,500	
4	Nexgrid Archive Server h/w	\$7,000	
5	Nexgrid ecoSync Server License s/w	\$9,000	
6	Nexgrid Archive Server license s/w	\$9,000	
7	ESRI GIS software license	\$30,000	capital
8	ESRI hardware	\$20,000	capital
9	new Nexgrid OS Server	\$10,000	capital
10	new truck	\$270,000	
11	Village 13 upgrade multiple items -2023	\$6,000,000	
12	Sertex - fiber optic backbone install new managed edge switches (18)	\$85,000	
13	80 Commercial St. roof & widow repairs		
14	80 Commercial St fence and gates		
15	80 Commercial St new/relocated gutters & downspouts		



2023 Rate Restructuring

Rate Study Analysis												
	Total Customers	KWH Sales	Base Charge	Base Revenue	Energy Rate	Energy Revenue	PPA	PPA Revenue	PASNY Credit	Large Comm Demand	Estimated Revenue	% of Revenue
Residential	8915	74,000,000	11.25	1,203,525	0.1885	13,949,000	0.025	1,850,000	(240,000)	0.00	16,762,525	74.06%
Small Commercial	1268	10,500,000	18.5	281,496	0.1890	1,984,500	0.025	262,500	0.00	0.00	2,528,496	11.17%
Large Commercial	56	15,200,000	61.75	41,496	0.1640	2,492,800	0.025	380,000	0.00	288,000	3,202,296	14.15%
Off Peak Water	87	245,000	8.25	8,613	0.1400	34,300	0.025	6,125	0	0	49,038	0.22%
Storage Heating	10	83,000	11.00	1,320	0.1510	12,533	0.025	2,075	0	0	15,928	0.07%
Private Area Lighting	202	147,000	0	0	0.0000	33,500	0.025	3,675	0	0	35,000	0.15%
Street Lighting	2011	313,813	0	0	0.0000	62,000	0	0	0	0	62,000	0.27%
Photovoltaic	65	(240,000)	0	0	0.0887	(21,288)	0	0	0	0	(21,288)	-0.09%
		100,248,813		1,536,450		18,547,345		2,504,375	(240,000)	288,000	22,633,995	100.00%
				6.79%		81.94%		11.06%	-1.06%	1.27%		



Winter 2022-23 Electric Service Reliability November 29, 2022

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Why Are We Here?

- "ISO New England has advised the region that New England faces a precarious fuel supply risk that could necessitate emergency actions if a severe prolonged cold snap hits the region this winter."
- "ISO-NE statements and presentations acknowledge **that under the low probability of a prolonged cold snap this winter, load shedding may occur.**"
- This situation is caused by an inadequate supply of natural gas to N.E. to meet the increased needs for home heating and electric power generation.
 - MMWEC Bulletin to member MLPs, including MMLD



MMLD's objective...to be prepared

We want everyone to understand a rolling blackout:

- is a low probability event
- WILL be an annoyance and an inconvenience, but NOT a reason for panic.
- may become a lower concern than the extreme weather events experienced in recent Octobers.



What is (compulsory) Load Shedding?

- MMLD relies on the ISO-NE grid for our electric power. Under extreme conditions, ISO may direct us to reduce our customers' demand for electricity, by disconnecting customers.
- Load shed simulations are conducted monthly. The amount to shed is communicated as % of the current load, e.g. shed 10% of 15 MW.
- In monthly simulations, the amount of time we have execute the load shed is short...10 minutes.



How much warning would we get?

Considering accurate weather forecasts and ISO's escalating steps – it's reasonable to assume we'll get one or more days of advanced warning

- Most likely to happen during a sustained, multi-day cold spell.
- ISO will communicate escalating abnormal operating conditions
 - **M/LCC2** – Master Local Control Procedure #2 (MLCC2)- early, low level warning. Stop non-essential work on generators, prepare to run
 - **OP-4** (Operating Procedure 4) - ISO-NE to begin multiple early steps: widespread public alerts, start-up reserve plants as Wilkins, prepare emergency energy transactions, and ask for voluntary load shed
 - **OP-7** – ISO-NE **emergency actions** including communicating compulsory load shedding



So what can we do?

- Review set(s) of likely conditions that leads up a situation where ISO-NE/National Grid directs us to shed load
- Document the actions MMLD proposes to take
- Identify and review the complementary actions taken by other town departments to mitigate the negative consequences
- Identify any gaps in the plan and the depts to address them
- Develop an appropriate communications plan to the public
- Follow-through on the pre-event communications



An example Load Shed plan

- 14.2 MWh Load at HE 15 on day 3 of frigid cold temps
- ISO- dispatched our Wilkins plant to run, starting on day 2. (So not available for MMLD self-dispatch.) Two substation employees are assigned to run Wilkins
- ISO-NE/National Grid contacts MMLD to shed 10% of load
- MMLD sets target to shed $14.2 \text{ MW} \times 10\% = 1.42 \text{ MW}$.
- Begin rolling blackouts, on 2-3 hour intervals throughout Town. 2 to 3 Circuits are shut off during each interval.
- Each Circuit should be out for 2 hours over an 18-hour period
- ISO gives NO indication how long the load shed will be needed.



Communications Plan

PRE-EVENT Plan:

- There are 22 circuits in Marblehead
- Customers will learn which electric circuit they're on e.g. Atlantic, Harbor, or Lafayette ...MMLD will communicate that on monthly bills, and by dedicated email and/or US mail.
- All residents to Register for CodeRED NOW: sign-up for text, email and voicemail
- For personal and public utility security reasons we are NOT planning to publish a town-wide directory of addresses with circuit names or circuit maps



Communications Plan

DAY-OF-EVENT:

- We will use CodeRED to communicate to customers:
 - Which Circuits will be shut off
 - How long they will be shut off e.g. 2 or 3 hours
- We will continue CodeRED messages until the Load Shed is lifted
- Call MMLD at 781-631-5600 if you don't know your circuit
- Getting through to MMLD might take time, best to know beforehand
- For public and personal security reasons we will not be publishing a town-wide directory of circuits or circuit map



CERTIFICATE OF EXCELLENCE IN RELIABILITY

This is to acknowledge that

Marblehead Municipal Light Department

has significantly exceeded the average for all U.S. electric utilities for reliable electric service. The utility participates in the American Public Power Association's e-Reliability Tracker service to track its power outages and restoration against national benchmarks.

As reported by the Energy Information Administration.

MARCH 31, 2022

ada
Vice President, Technical and Operations Services



MMLD/NEPPA Response to Hurricane Ian

- Paul Camarda – Working Foreman
- Adam Bernard- 2nd Class Lineman





MMLD Strategy Working Group

11/29/22 Light Commission Meeting: update
Load demand Forecast

Forecast Uses
Information needed for Forecast



Long-term load forecast uses

- Long-term load forecasts will be used to
 - Understand the long-term energy needs of Marblehead
 - Need aggregated data at the town level
 - Guide planning for future infrastructure needs
 - Granular data needed, at the distribution circuit level



Trends affecting electric energy changes

- Transportation electrification
- Building electrification
- Energy efficiency changes
- Local energy production / storage



Essential data for overall load forecast

- ISO-NE forecasts
- MMWEC forecasts
- Marblehead population past evolution / forecasts
- # of cars registered in Marblehead
- # of new cars per year
- EV penetration over time in other states / countries
- US / New England charging information, load trends (Charge Point data)
- Charge pattern during day in New England / other states
- # of new house constructions
- # of large renovations
- # of houses with solar over time
- Others



Essential data for local load forecast

- # of meters, # meters per circuit
- Service level per meter
- # of changes in service over time (increase from 100 Amps to higher)
- Change in power use over time in meters that change service level
- Peak load per transformer
- Peak load per substation
- # of level 2/3 chargers (of which: known Connected Homes chargers)
- Others



Massachusetts Municipal Wholesale Electric Company
Winter Reliability Update

- **A Reliability Concern** - ISO New England has advised the region that New England faces a precarious fuel supply risk that could necessitate emergency actions if a severe prolonged cold snap hits the region this winter. During the November 2, 2022, Participants Committee meeting, a slide presentation given by ISO New England Executive Vice President and Chief Operating Officer Vamsi Chadalavada noted that during a winter similar to 2013-2014, “significant usage of all available capacity deficiency actions under OP-4 (including public appeal actions) may be necessary across several weeks, including the use of OP-7 across several days.”
- **What Does This Mean?** Simply put, ISO New England’s statement and presentations acknowledge that under the low probability of a prolonged cold snap this winter, load shedding may occur. This risk is fundamentally derived by the reliance on gas-fired generation to meet demand needs during times of high demand caused by extremely cold winter weather. During these periods, natural gas availability is often reduced for electric generators as it is needed to meet heating demand needs from gas utilities. This lack of fuel for electric generation can reduce electric generation supply at the time when it’s needed the most. This is the inherent driver behind ISO New England’s reliability concerns for this winter.
- **How Would Load Shedding Happen?** ISO New England has established policies and operating procedures for events they have expressed reliability concerns about. The first indication that the power grid may be heading into stress is the issuance of **Master Local Control Center Procedure #2- Abnormal Conditions Alert (MLCC2)**. Most MMWEC Members are not required to perform any actions under MLCC2. MLCC2 primarily impacts generators and transmission owners and not distribution systems. For those generators and transmission owners, when MLCC2 is issued, curtailment of work on equipment is required. **MLCC2 does indicate abnormal conditions exist on the power grid.** These conditions range from actual to forecasted reserve deficiencies, low transmission voltages, inability to provide 1st contingency protections, geomagnetic disturbance, credible storm forecasts or threats to the system through sabotage and operational staffing shortages throughout the region. ISO New England issuing a MLCC2 – Abnormal Conditions notification would be the first indication that there may be trouble coming.
- **Next Action Implementation of Operating Procedure 4** – Operating Procedures outline certain steps ISO New England takes to control and manage the power grid in New England. Under MLCC2-Abnormal Conditions, and/or when the system is running out of generation capacity, and/or when load plus reserve requirements exceed available resources actions under Operating Procedure 4, actions will be taken by ISO New England. Operating Procedure 4 identifies 11 actions that ISO New England can take to address the system deficiencies. Many of these actions can be taken by the ISO New England control room directly, which include notifications to market participants and the general public, generation reserve dispatch and scheduling of emergency energy transactions. **The most common action MMWEC Members may take is to voluntarily load shed, identifying large industrial and commercial customers and turn on behind the meter generation if available.**

- **Operating Procedure 7 – Action In An Emergency** – This is the operating procedure that ISO New England will use to **implement load shedding**. The actions and communications ISO New England will take under Operating Procedure 7 – Action In An Emergency will be familiar to MMWEC Members as they are those taken under the monthly load shed tests. *MMWEC will be providing more information regarding load shedding actions under Operating Procedure 7 as a general refresher.*
- **MMWEC & Public Power’s Actions Taken To Address Current Winter Reliability Risks** - As we are on the cusp of the winter season, more awareness of the power grid’s winter vulnerability is becoming known to the general public. However, for MMWEC and our colleagues in the public power sector, this is not news. As early as May of this spring, MMWEC and other Public Sector market participants raised concerns to ISO New England that stored fuel inventories (oil, natural gas & LNG) were at historical low levels in the region and that market conditions were not favorable for aggressive replacement of those inventories. MMWEC suggested that the reinstatement of the Winter Reliability Program should be considered given the circumstances. This message continued to be conveyed not only to ISO New England and its Board of Directors but to other New England States’ regulators. ISO New England responded to our and other market participants concerns in July by releasing a study determining the impact of instituting the Winter Reliability Program for this winter would be too costly (approx. \$160M to \$170M) and not provide significant benefits to system reliability. While MMWEC does not agree with ISO New England’s conclusion, the likelihood of successfully advancing the program through the NEPOOL stakeholder process and ultimately obtaining an order from FERC to implement the program was deemed to have a very low probability of success.
- **MMWEC Continues To Lead A Coalition of Public Power To Find Long Term Solutions** – MMWEC continues lead a coalition of regional public power entities (CMEEC, NH Electric Coop, VEPSA and VELCO) to advocate for solutions to the regions winter reliability vulnerabilities. In September, MMWEC attended FERC’s New England Winter Gas-Electric Forum and on November 7th submitted the public power coalition’s comments to FERC addressing solutions to the winter reliability problem. **The comments focused on the error of market rules that developed an over reliance on gas fired generation without securing adequate fuel supplies, the need for competitively sourced transmission buildouts to diversify fuel sources used to generate electricity, prioritization of capacity market reforms to accurately value capacity during the times it is really needed (winter) including incentives to procure firm fuel, and the establishment of a regional fuel reserve.** While these solutions cannot be enacted to address risks for this winter, they do provide solutions to the region’s winter vulnerabilities going forward. MMWEC will be strongly advocating for these measures in the weeks and months to come in the NEPOOL stakeholder process and at FERC.
- **Summary** - **MMWEC shares ISO New England’s concern that the region has a reliability vulnerability in the winter.** For this winter, not much more can be done, as MMWEC called attention to this risk in the spring. MMWEC will still maintain its role in the load shedding process and refresh Members on their roles and responsibilities under Operating Procedures 4 and 7 to be ready in the low probability that load shedding is needed. MMWEC believes the long-term solutions to the winter reliability risk are contained in our plan that we submitted to FERC and ISO New England, but as with any long-term solution, it will take time to achieve support and implement. This is the focus of MMWEC’s ongoing actions to address the region’s winter reliability risk.