

Light Commission June 25, 2024 meeting minutes

To: Light Commission: Commissioners
Light Department: J. Kowalik, General Manager,
From: Jean-Jacques Yarmoff, Secretary
Date: July 31, 2024
Re: Commission Meeting Public Session, June 25, 2024

A quorum being present, Chair Wolf brought the meeting to order at 4:00 pm. The meeting was held in person and with remote internet access, both available to public participation. A recording of the meeting is made available to the public at the following [link](#).

Participated in meeting:

Commissioners: Commissioners Frechette, Hull, Smith, Wolf and Yarmoff participated in person.
Light Department: General Manager, J. Kowalik; Distribution Manager, Greg Chane; Business Manager, Matt Barrett
Invited: Massachusetts Municipal Wholesale Electric Company (MMWEC) Sustainable Energy Policy & Program Senior Manager, Zoe Eckert.

Marblehead Land Acknowledgment declaration was read by Commissioner Frechette.

Election of officers of the Commission

Chair Wolf complimented Commissioner Frechette and Smith on their reelection. As customary after each election, the commission decided to elect its slate of officers.

Vote #2024-09 Motion to re-elect Commissioner Wolf as chair, Commissioner Frechette as Vice-Chair, and Commissioner Yarmoff as Secretary was moved by Commissioner Yarmoff, seconded by Commissioner Smith. **Four in favor, one abstention.**

Approval of minutes

Vote #2024-10 Motion to approve the combined minutes of March 26, 2024 Public session and Executive session was moved by Commissioner Frechette, seconded by Commissioner Yarmoff. **Unanimous**

Vote #2024-11 Motion to approve the April 30, 2024 public session minutes; and the April 30, executive session minutes was moved by Commissioner Yarmoff, seconded by Commissioner Frechette. **Four in favor.** Commissioner Hull, absent at the meeting, abstained.

Vote #2024-12 Motion to approve the minutes of the May 28, 2024 meeting was moved by Commissioner Frechette, seconded by Commissioner Yarmoff. **Four in favor.** Commissioner Smith, absent at the meeting, abstained.

Comments from the Public

Electric Bus. Eileen Mathieu, Longview Drive, mentioned that Marblehead had received a \$200,000 grant to purchase an electric bus. A MassCEC grant might help - study the design for and - purchase the corresponding

electric charger: this is work the school will take on. The deadline for this application is July 10. It will be useful to have the Light Department and the Light Commission sign a letter of support, as stakeholders in this process. After discussion, it was proposed that Eileen Mathieu could work with Lisa Wolf to come up with an appropriate letter for signature by the Light Department's General Manager and the Light Commission.

Solar Rate. Jeffry Foley, Cherry Street, made comments regarding the Light Department's solar rates. This is an agenda item of the meeting and M. Fowley was invited to bring his remarks at that time.

Cliff Street work. The town is facilitating access to the seaside park on Cliff Street, between Commercial Street and the entrance to the Marblehead Yacht club: some ledge has been removed and boulders will be installed to delineate pedestrian access.

Outstanding items from previous meetings

Process for battery Interconnection Application. The document highlighting the process for a resident to apply to connect a residential battery has been published on the MMLD web site, after confirmation by the Building Inspector and the Fire Chief that this process was adequate. MMLD is accepting applications. While MMLD has not reached out to residents that showed interest in a residential battery previously, it is anticipated that the local press will cover this subject and let the public know.

23 kV Feeder line. Commissioner Yarmoff introduced a document, shared with MMLD in March, assessing risk to electricity supply in Marblehead, with the goal to improve resiliency for the town. This will be discussed at the next board meeting. See p 6 for an excerpt.

Employee Survey. The General Manager and Commissioner Yarmoff participated in a meeting with Polco's representative Brandon Barnett, highlighting the next steps to set up a study. The questions need to be finalized and a timeline put in place for execution of the survey.

Solar rates review

Current Policy: The General Manager explained the economic basis for the current proposed Solar Feed-In Tariff policy, starting with the components of the wholesale electricity cost that Marblehead pays: energy, capacity and transmission charges. This gets the electrons to our substation. To get them to the customers, MMLD maintains distribution wires, poles and a team of people, which brings the wholesale rate to the current rate that residents pay, about 19 cents per kWh. When MMLD buys back energy from residents, it is only buying back energy (not capacity, transmission or distribution). In order to make this transparent, the proposed policy has been to use publicly available numbers: the ISO-NE Locational Marginal Price for the North East of Massachusetts (NEMA-LMP), averaged over the previous year to fix the Feed-in Tariff. According to the General Manager, this is the only economically valid reasoning.

Commercial customers feed-in tariff rate are set at this NEMA-LMP rate and updated every year. This explains the 3.3 cents per kWh as described on the slide p 6. A discussion ensued as to whether this number was the actual average 2023 NEPA-LMP, which - if 5.6 c/kWh as found on the ISO-NE web site - would mean Marblehead significantly underpays its commercial customers.

For Residential Solar rates, the Commission previously decided (Vote #2023-45) not to change the previous feed-in tariff of 9.9 c per kWh, as the proposed policy does not take into account the benefits of a lower capacity and transmission charge coming from local production. The General Manager agreed that it is necessary to take into account the avoided capacity and transmission charges, which complicates the calculation: a simplistic evaluation yields a result very close to the previous number, which explains why the Commission decided to not change the feed-in tariff from the previously set rate, pending in depth review. As

a result, there are two different rates (commercial and residential) right now, because initially the proposed policy was supposed to only take into account the NEMA-LMP. If it is appropriate to take into account the transmission and capacity charge, on top of the NEMA-LMP to get a rate which is close to 9.9 cent, it does not seem that the 3.3 cent Commercial rate is fair to these customers. Commissioner Yarmoff also reported that commercial customers who have a choice will set up solar arrays in buildings they own in different parts of Massachusetts rather than in Marblehead, which directly hurts Marblehead.

Portfolio considerations: the General Manager is charged with increasing MMLD carbon-free portfolio in line with the constraints of the state and the town, as economically as possible. Faced with the two choices described in the slide p 6, he recommends prioritizing the second scenario. Commissioner Yarmoff pointed out that we should also consider the portfolio of sources of energy when setting the policy for Feed-In Tariff. If solar rates in Marblehead were about the same as the LCOE (Levelized Cost of Energy) of our Berkshire windfarms, we would be ahead, as solar in town helps with lower transmission and capacity charges, as well as resiliency.

Net-Metering: Commissioner Wolf commented that presenting MMLD as implementing Net-Metering is deceptive: a real Net-Metering calculation would have the meter run forward when the residents consume electricity and backwards when electricity is exported back to MMLD. But what we do is different: we buy back the exported electricity at a low rate. Commissioner Frechette reported that residents have complained, after installing solar panels, that their bills were very different from what they expected to see.

Installation subsidies. While some other MLPs calculate the solar feed-in tariff in the same way as MMLD does, they have substantial solar installation subsidies. Marblehead residents do not turn over the RECs to the Light Department. What would be the net present value of the RECs to MMLD if they were transferred from the residents to MMLD? Could that value be used to subsidize the upfront cost of the solar panels? This would be of interest to both the residents who would be able to more easily install solar, and to MMLD as it would at the same time increase the clean energy in Marblehead.

Batteries: A further issue to consider will be tariff for electricity exported from residential batteries. We cannot differentiate from solar installations and batteries will make economic sense to residents if installed together with a solar array. The Feed-In Tariff policy will apply to both solar and batteries.

Conflict of Interest: Commissioner Wolf added that she, like Commissioner Frechette, have solar panels on their houses and will abstain from any vote on Solar Feed-In Tariff policy, if this comes up to a vote.

Resident comments: Jeffrey Foley agreed that the way Net Metering is described is causing confusion to residents interested in installing residential solar. He also stated that it seemed to him appropriate that the Feed-In Tariff of residents that can install solar should be subsidized to increase the penetration of solar.

Next Steps: The Chair requested that two points be investigated, possibly with the help of MMWEC: - an evaluation of the net present value of the RECs to consider if it would be worthwhile to take these into account into a subsidy for installation; and the impact on MMLD's revenues if MMLD implemented full net metering versus the current approach.

With this information, the Commission should be able to establish a Solar Feed-In Tariff policy.

Heat Emergency and Peak Alert

Late in the week of June 10, 2024 forecasts were published for the week of June 17 that indicated that a heat wave would reach New England and utilities could expect very high electricity consumption. Hourly

consumption in Marblehead for the days of Tuesday June 18 through Friday June 21 is shown on slide page 7. The General Manager sent a CodeRed message to Marblehead residents on Wednesday June 19 at 4:30 pm to voluntarily curtail electric consumption if possible from 4:30 pm to 8 pm, and again the following day. This communication raised several questions from the Commission:

- On Tuesday, ISO-NE issued a warning that the system was in Capacity Scarcity Condition OP-4. OP-4 means the grid is under serious stress that could possibly escalate to load shedding orders. Yet, the CodeRed message was sent nearly 24 hours later, when stress conditions on the grid had normalized.
- The concomitant heat wave and the failure of a large electricity generator meant that electricity prices reached an LMP of 758 \$/MWh for hour 18, 25 times higher than normal (and 25 times higher than the day before or the day after the scarcity event). While the failure of a generator could not have been anticipated, the high energy consumption could have been, in view of the heatwave that was forecast.
- While the heat wave had been forecast and started on Tuesday, the message from the Light Department was sent on Wednesday, requesting immediate action and focusing on a generator issue. Other Munis communicated the week prior to the heat wave, warning residents and enlisting their help ahead of the critical period. In Marblehead, no message was sent ahead of the heat wave, and no repeat happened on Thursday, when the heat conditions were forecast to be the worst of the week.
- The message focused on abnormal operating conditions outside of Marblehead and not on lowering consumption and the capacity charges (unlike the messages sent by the Department in July).

The General Manager pointed out that he limits himself to one CodeRed message a week to avoid overloading residents with information. The situation that week was different from that of other heat waves in that there was an operational issue.

The Commission pointed out that the Light Department has other communication methods and relays available to get the message to the community. The Department's Facebook page, town sent e-mail messages, local media, local associations can all be used to communicate ahead of a heat wave that reducing electric consumption is saving money for everybody. We do not prepare residents by explaining the context of the CodeRed messages, and yet this is something that we need to do to be effective. Clearly when there is an emergency, CodeRed is important; CodeRed communications should not be abused. But other methods of communication should be mobilized ahead of heat waves. The Connected Homes program sends daily communications to participants.

The Chair summarized the debate: the Light Department would appreciate the Commission to set a clear policy of what is expected in terms of communications ahead of heat waves and for peak alerts and requested Commissioners to submit proposals to the chair regarding this Peak alert policy for MMLD.

Duracell program update

During the previous Commission meeting, MMWEC's Zoe Eckert introduced several possible pilot schemes and highlighted one that could be possible in the Crowninshield area, where service interruption due to weather-related events have been frequent. As there is a possibility to organize different types of pilots, Commissioner Yarmoff proposed several other options that MMLD could consider, see pp 8. These pilot programs, if they were implemented, would have a positive NPV to MMLD, but raise questions that MMWEC is currently discussing with MMLD and other municipal light plants. More information may be shared by MMWEC at the next Commission meeting on possible pilots.

Distribution Department Update

This update will be rescheduled for the next Commission meeting.

General Manager Updates

Village 13 update: MMLD is expecting to receive shipment on the transformers this week. A lot of planning is going on to ensure smooth delivery. First a crane is coming into position. Half of the substation is going to be de-energized to ensure safety. So MMLD is carefully looking at the weather to ensure that only one line/transformer can carry the load of the town during that period. If necessary, MMLD will run the Wilkins plant to guarantee appropriate supply. The Police Department will help by escorting the trucks, and organizing parking along the delivery path. The Commission voiced appreciation for all the planning work that is going on in ensuring smooth delivery of these exceptional loads.

Shipyard Area resiliency grant. Work is progressing and will be completed before the end of the month as per plan. A monopole has been installed to facilitate gangway operation of the commercial dock. The sidewalk is being reconstructed. The fence installation is nearly complete. During this work, a contractor pierced a pipe of the geothermal loop that serves MMLD headquarter building and whose location had not been appropriately documented. This incident was quickly resolved, with no environmental consequences.

Tioga Way update. The structural engineering firm is going to give us a preliminary estimate of the cost of leveling the potential sites identified in the parcel, so that the Department can make a determination as to where to focus its efforts.

New employee recruitment update. See page 7. The information systems technology manager, Chris Dunbar starts at the beginning of July, next week. The General Manager is interviewing several candidates for the engineering project manager position. For the Energy Services Manager position, discussions are on-going with one person in the industry but there is currently no active search on-going with the recruiter.

The meeting concluded at 5:58 pm at which point a motion to adjourn was proposed, seconded and adopted.

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Documents presented during the June 25, 2024 Light Commission Meeting

Trying to analyze risk separately for each of the subcomponents gives the following table:

	Location of possible failure	What kind of failure? What Hazards?	Probability of failure	Who is responsible?
1	Upstream of Salem Railway substation	Transmission failure to substation	Low	National Grid
2	Railway substation	Equipment failure at substation	Low	National Grid
3	Overhead line Salem RoW	Pole failure; Line failure High wind Malevolence; Accident; Public Work	Low Low	MMLD? NG?
4	Underground Salem RoW	Line failure Flooding Uninformed digging / public works	Low Low	MMLD?
5	Under bridges / underground berm	Line failure Bridge failure Berm failure	Low Medium	? ?
6	Overhead line Mbhd RoW	Pole failure; Line failure High wind: Tree falling on line Brush fire	High Low	MMLD
7	Village 13 substation	Equipment failure at substation End-of-life of equipment	Low Addressed	MMLD



Current MMLD Solar rates

- Residential – 9.9 cents per kwh
 - based on a prior year average, publicly available NEMA LMP price (Northeast Mass ISO-NE zone, localized marginal price)
 - Set multiple years ago.
 - Board discussion in 2023 but no vote to change

- Commercial – 3.3 cents per kwh
 - Based on the prior year (2023) average NEMA LMP



Adding New Carbon-Free Resources to Power Portfolio – Prioritizing Options

Power Attributes	Option A	Option B
Carbon Intensity	100% clean	100% clean
Supply Predictability	Intermittent; 1 in 7 hours at best	Firm Power, By month & hour of the day
RECS to MMLD	No*	Yes
MMLD cost - \$/kwh	9.9 cents	7.5 cents
Energy Delivered to MMLD	342 MWH (2023 actual)	19,627 MWH (2024-26 average)



Heat Wave and CodeRED response

Hour	Tuesday			Wednesday			Thursday			Friday		
	6/18	Hrly Delta	Delta %	6/19	Hrly Delta	Delta %	6/20	Hrly Delta	Delta %	6/21	Hrly Delta	Delta %
10	15.4			18.4			21.2			19.2		
11	16.9			20.4			22.9			20.3		
12	18.6	1.6	8.9%	22.2	1.8	8.0%	24.6	1.6	6.6%	20.6	0.3	1.4%
13	20.0	1.4	7.0%	24.1	1.9	7.9%	26.6	2.0	7.5%	20.4	-0.2	-1.1%
14	20.5	0.5	2.5%	25.6	1.5	5.7%	27.8	1.3	4.6%	20.2	-0.2	-0.9%
15	21.2	0.6	3.0%	26.7	1.1	4.1%	29.0	1.1	3.9%	20.1	-0.1	-0.4%
16	22.3	1.1	5.1%	26.6	0.0	-0.1%	29.6	0.6	2.0%	20.1	-0.1	-0.4%
17	23.1	0.8	3.6%	27.1	0.5	1.7%	29.9	0.3	0.9%	19.7	-0.4	-2.0%
18	23.7	0.6	2.6%	26.4	-0.7	-2.6%	29.7	-0.2	-0.6%	18.8	-0.9	-4.7%
19	24.4	0.7	2.7%	25.6	-0.9	-3.4%	29.5	-0.2	-0.7%	17.1	-1.7	-9.9%
20	25.9	1.5	5.9%	24.3	-1.2	-5.0%	28.9	-0.6	-2.0%	16.3	-0.8	-4.8%
21	20.1	-5.8	-28.9%	23.5	-0.8	-3.6%	27.1	-1.8	-6.5%	15.8	-0.5	-3.5%
22	21.1	1.0	4.7%	22.4	-1.0	-4.7%	23.6	-3.5	-15.0%	14.9	-0.8	-5.4%
23	19.3			20.4			21.2			13.5		
24	17.0			18.3			18.3			12.1		
Total	401.8			471.0			525.0			398.9		



General Manager updates

- Village 13 update
- Shipyard Area Resiliency (CZM) Grant
- May monthly financials available late this week
- Tioga Way update
- New employee recruiting update



New MMLD employee hiring

- Information Systems & Tech Manager - starts next week
- Engineering Project Manager (EPM) - leading candidate took a job with another Mass MLD closer to home. Continuing to interview candidates
- Energy Services Manager – in discussion with one candidate

To: Light Commission: Commissioners
Light Department: J. Kowalik, General Manager
MMWEC: Z. Eckert, Sustainable Energy Policy & Program Senior Manager
From: Jean-Jacques Yarmoff
Date: June 21, 2024
Re: Residential battery pilot program

Pilot programs for Duracell residential batteries

MMWEC's Sustainable Energy Policy and Program Senior Manager, Zoe Eckert, presented the elements of possible pilot programs with residential batteries to be discussed and implemented with Duracell. This document is proposed to stimulate conversation about pilot program(s) in Marblehead.

Several use cases have been proposed, to combine batteries with solar production, for resiliency and in other situations. The analysis below show that a reasonable pilot program could result in potentially around 50 batteries installed in town, resulting in 150 kW of installed capacity, with a positive contribution to MMLD' finance of about \$175K with the current MMWEC's assumptions.

While the number of batteries is an estimate and other reasonable assumptions could be made resulting in different numbers, it remains that a **pilot introducing residential batteries will have a positive impact on MMLD's finances.**

Crowninshield resiliency

Why, and who The Crowninshield area distribution system is via underground service, which has suffered some repeated disruption in recent storms. 23 Residences might benefit from back-up power.

How many? A handful at most (taken as 5 in this analysis). Some of the large residences in this exclusive neighborhood might need two battery systems to cover load in case of failure. Some probably already have a back-up system.

In conjunction with Solar

Why, and who The economic case for extending solar electricity production for the residents and for MMLD is clear: this is best use case for batteries and will incentivize local solar production as well.

How many? Around 20 - 30? There are 83 solar roofs in Marblehead, all of which might benefit from battery installations. Some residents have been waiting for years: a fraction of these 83 solar installations have already expressed interest. In addition, we accrue solar installations at the rhythm of about 10 a year. With the financial incentive of a faster pay-back with battery, it is likely that this number will both increase and that a large portion of new installs will be in conjunction with batteries.

Water and Sewer Department resiliency

Why, and who Water and Sewer operates 30 pumping stations (two drinking water, 28 sewer pumping stations), most of which are not equipped with back-up power generation. The sewer department has some portable generators, but not enough to cover all pumping stations. All stations which are not at risk of flooding could be equipped. Other town departments might be interested as well.

How many? Five to 10?

Life saving medical equipment / resiliency

Why, and who Residents who depend on life saving medical equipment are a particular concern of the Light Department, as was discussed during the public meeting of December 15, 2022. Residents might depend on oxygen pumps, monitoring devices, or medication that must be kept frozen or refrigerated at all times. Backup power in case of supply disruption is critical.

How many? Possibly 10 - 20?

We can work with the Disability Commission, the Health Department, the COA and other organizations to get the word out, in addition to the residents already identified by the Light Department in the December 2022 work preparing for possible load shedding events.

Low income residents / resiliency

Why, and who MMLD has been working with the North Shore Community Action Program to provide help to low-income residents who have difficulty in paying their electricity bills. Unlike the Crowninshield residents, these residents are unlikely to be able to afford installation of a residential battery, even if they wanted to. MMLD proposing a pilot program for these residents, where MMLD carries the whole cost of the batteries, would help them, would help the whole town and still have a positive financial impact for MMLD even though the ROI is longer than in other use cases.

How many? Tbd, taken as 5 in this analysis.

Program projections: a positive financial contribution

These projects together could possibly lead to the installation of 45 – 70 batteries representing 135 – 210 kW and 345 – 540 kWh of installed capacity in town.

Using MMWEC's numbers presented during the May commission meeting, the program might cost the Light Department between \$214K to \$335K to implement and result in avoided costs of \$367K – \$571K: a net financial positive contribution of \$153 - \$236K while adding to the resiliency of the town.