

Light Commission August 6, 2024 meeting minutes

To: Light Commission: Commissioners
Light Department: J. Kowalik, General Manager
From: Jean-Jacques Yarmoff, Secretary
Date: August 8, 2024
Re: Light Commission Public Meeting, August 6, 2024

A quorum being present, Chair Wolf brought the meeting to order at 4:07 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, Wolf and Yarmoff participated in person. Commissioner Smith was excused.
Light Department: General Manager, J. Kowalik; Distribution Manager, G. Chane.

Marblehead Land Acknowledgment declaration was read by Commissioner Frechette.

Approval of minutes

Vote #2024-13 Motion to approve the minutes of the June 25, 2024 meeting was moved by Commissioner Frechette and seconded by Commissioner Hull. **Unanimous.**

Comments from the Public

There were no comments from in person or from remote participants.

Outstanding items from previous meetings

Polco survey. The General Manager received today a document from Polco with the standard questions that have been used for utilities such as ours. This is to be reviewed and specific questions for MMLD added, if any are needed. This will be taken off line by the General Manager, Commissioner Frechette and Commissioner Yarmoff for support if needed.

Solar rate review. Commissioner Wolf mentioned that we are still gathering data. Commissioner Yarmoff presented the slides page 4, which show a simplified version of the electric load during a day in Marblehead, with part of the energy provided by short- and long-term contracts (represented in a simplified form in the slide as “nuclear base load”) while the rest of the energy is purchased on the day-ahead or the spot markets (simplified as “spot market”). Solar energy produced in town displaces some spot market purchases but does not displace any contractually supplied energy. Using the average yearly LMP as a basis for net-metering rate does not reflect the value of the solar energy when and where it is produced and is an incorrect base for setting the solar rate policy. Solar rate will be further reviewed as we gather more data.

Time of Use Working Group. This group has not yet gathered, but should include Chris Dunbar, as well as the General Manager and Commissioners Smith and Yarmoff.

Distribution Manager Update.

Greg Chane, Distribution Manager, reported that progress on distribution upgrades had been stymied by staff vacations, sicknesses as well as addressing equipment or pole failures: “putting out fires”, in some cases literally. It is expected that significant staff time will continue to be dedicated to these emergency issues, as the distribution system has been allowed to downgrade over the last many years.

With regards to staffing, the Department is currently training three apprentices (two who are in their second year, one in his first) and has one staff member who is likely going to retire in the coming months. It takes between 3 and 5 years for an apprentice to become fully certified and proficient. Hiring more staff is difficult as the whole industry is struggling with the same lack of qualified staff. One solution is Mutual Aid: MMLD received support when lines needed to be modified at the Village 13 substation in preparation for the transformers’ delivery. Staff from three other municipalities helped. Using contractors for some specific jobs is also a possibility. Traditionally Marblehead has not used a lot of overtime. Some staff members may want the additional revenues OT will provide, others may not: it is a bimodal distribution. Equipment failures are unexpected and cannot be contracted out or be the subject of a Mutual Aid request: we have to deal with them on our own. We have four trucks, two person per crew, unless the job requires that more people be sent.

But for the work that can be planned, we can get outside help as we did for the Village 13 work. That was a big job that was on the critical path. However, at this stage, we have not made additional progress on whittling down the list that was presented to the board six months ago.

Stepwise presentation

Jane Chen and Ethan Brewer presented Stepwise and their product that is a load limiting device. It will allow to charge an EV as quickly as possible, modulating the power that goes to the EV to remain within the constraints of the service, as other house equipment draw power, and this without upgrading the electric panel to a higher level of service (keeping a 100 Amps or keeping a 200 Amps panel as previously installed). This can save a lot of costs associated with installing a new panel for the resident who wants to install an EV charger, while also helping the utility by keeping the power drawn from the lines within the current constraints, without upgrading distribution transformers or substations. Dynamic charging can also respond to grid constraints or energy price signals. This system would also be very useful for multi-unit dwellings where you are not going to have a 200 Amps panel in each unit.

The interested reader is invited to refer to the slides pp 5-9 and/or to listen to the recording of the exchanges with the founders of the company.

Second feeder line into Marblehead / Grant application

Following the 4/26/24 memo sent by Commissioner Yarmoff regarding options/risks regarding the main feeder lines into Marblehead, the General Manager discussed with the technical advisory group set up for the Village 13 project, and with National Grid (NG). NG mentioned that there is an open breaker at the railyard substation in Salem. It could be possible to originate a second feeder line into Marblehead from this grid node, taking a different route than the existing ones and thus mitigating risks. This would be a better option than a line from the Swampscott substation. Discussions with NG will continue.

This could be the focus of an application to the MassCEC/DOE 40101(d) competitive grant program for “Preventing Outages and Enhancing Resilience of the Electric Grid” that is specifically targeted at Municipal Light Plants. Applications for this program, which was announced in January 2023 and discussed in this forum, are due October 4, 2024.

General Manager Updates

Goals. The General Manager sent the board a report on 1st quarter progress on goals set for the Department.

Village 13 update.

Testing the transformers. The Department is organizing with our transformer testing contractor to have a field test of the transformers we received, which will trigger a payment to the manufacturer. They were tested prior to shipping by the manufacturer.

Bid for civil engineering work for switchgear. The bid documents are being prepared and should be ready in the next few days, for a formal bid to be published soon.

Switchgear. While delivery was supposed to start in September, MMLD has not heard from the company and will follow up to firm up the delivery date.

Shipyards Area Resiliency Grant

MMLD has submitted all its expenses for this project for the past fiscal year. The town will start work in the Parker's boat yard. As part of that work, new wave attenuating docks will be installed.

Financial / portfolio tracking

Financials. Sales through June are up 5% in volume (kWh), but revenues are down 4%, which is expected following the rate reductions implemented at the beginning of the year. The following table shows that we are tracking towards bulk power purchase in the range of 11 c/kWh, highlighting the fact that capacity and transmission charges are anticipated to represent 59% of the total for the year. See slides page 10.

Power portfolio. MMLD signed two PPAs, with NYPA and Brookfield Hydro, for medium term contracts. The target is still to hedge the power portfolio leaving only 20% for market purchases. Because the PPAs are based on hydro-generation of electricity, they are carbon-free, but they also have changing capacity over the course of the year, depending on water levels. These contracts increase the Carbon Free portion of Marblehead's power portfolio from 2023 level of 42% to 58%. See Page 11.

Hiring updates. As reported previously, MMLD made an offer to fill the IT position to Chris Dunbar, offer which was accepted. Chris has started July 1st. The Engineering position has been posted and there are on-going discussions with qualified candidates identified. MMLD has also identified a potential candidate for the Energy Services Manager position.

MMWEC Award. Lastly, the General Manager reported that MMLD received an award from MMWEC, for spearheading innovation in Marblehead, to encourage batteries and explore solar school rooftop.

Executive Session Chair Lisa Wolf proposed to vote on a motion to meet in Executive Session to discuss trade secrets or confidential, competitively-sensitive or other proprietary information when such disclosure will adversely affect our ability to conduct business in relation to other entities making, selling or distributing electric power and energy, with the intent not to return to open session.

Motion was moved by Commissioner Frechette and seconded by Commissioner Yarmoff.

Votes: Simon Frechette: Yes; Mike Hull: Yes; Lisa Wolf: Yes; Jean-Jacques Yarmoff: Yes.

The Session started at 5:49 pm and concluded at 7:18 pm at which point a motion to adjourn was proposed, seconded and adopted after a roll call of the four commissioners present voting unanimously in favor, adopted.

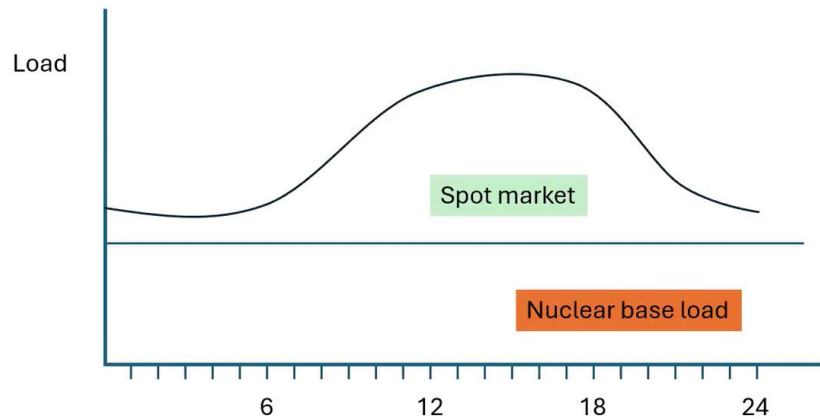
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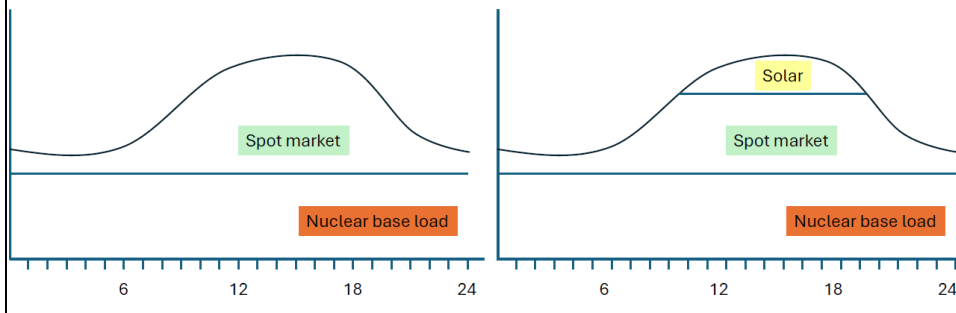
Agenda

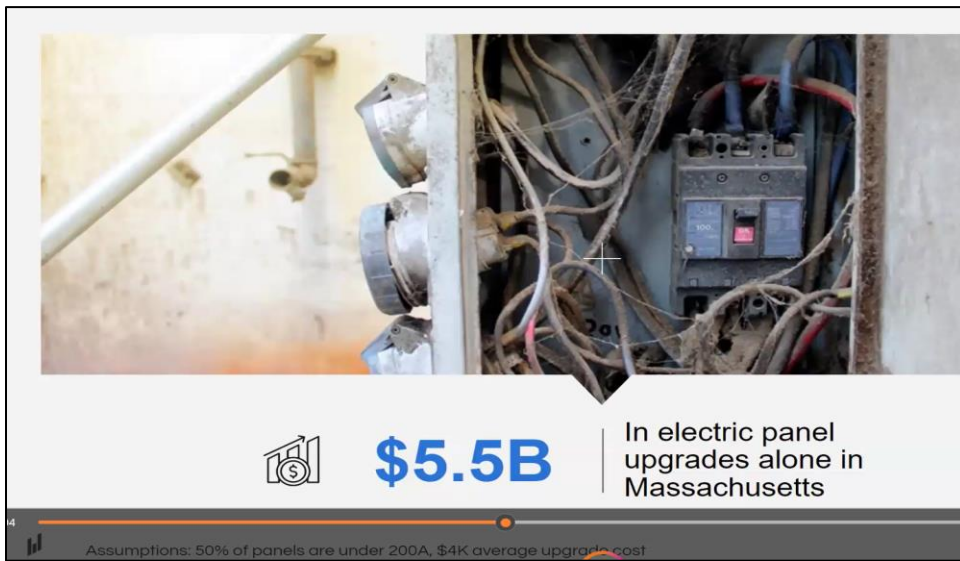
- 4:00 Call to Order, Land Acknowledgement, Minutes, and Public Comments
 - 4:15 Outstanding items and requests from last meeting
 - Polco employee survey
 - Solar rate review data request
 - Time of Use strategic working group
 - 4:20 Distribution Dept. Update – Greg Chane
 - 4:30 Stepwise EV Tap™ presentation
 - 4:50 Improving Capacity & Resiliency e.g. Adding 23 kV line
 - 5:00 General Manager updates
 - 5:15 Executive Session. Not to return to Open Session
- Adjourn

Marblehead Load (simplified)



What should the price of solar be?









Challenge

Electric panel upgrades generate burden for consumers, electricians & utilities

Adding EV chargers, heat pumps, and/or water heaters often requires increasing the capacity of the wires between the home electrical panel & the utility pole.

-  Expensive **\$2,000-20,000+** for consumers
-  Requires over **20-man hours** to implement
-  Utilities can take **3-18 months** to study the upgrade



Solution: Stepwise load limiting system for EV charging

Using dynamic load controls, Stepwise enables same day inexpensive electrification...

To eliminate the burden of infrastructure upgrades



Our controls algorithm balances energy usage in the home, one device at a time, starting with EV charging

Patent pending solution



We make installations cheaper & easier

\$600

\$1K

\$2K-10K



EVSE



EVSE Installation


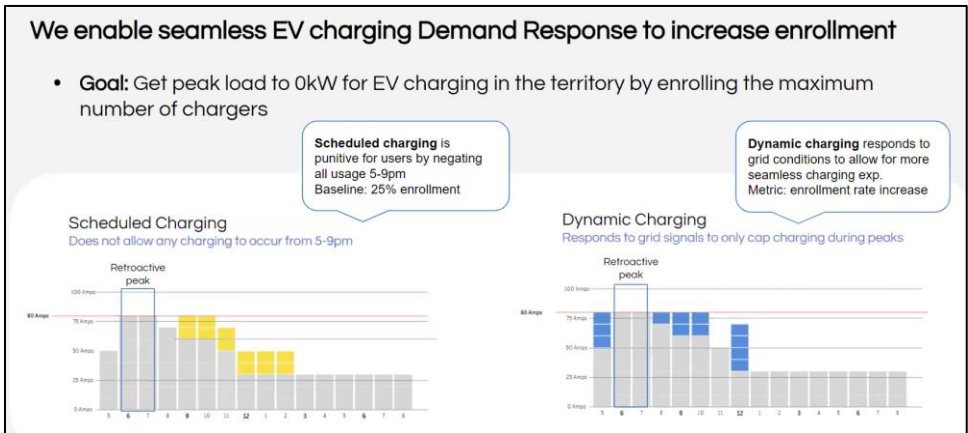


Electric Panel Upgrade



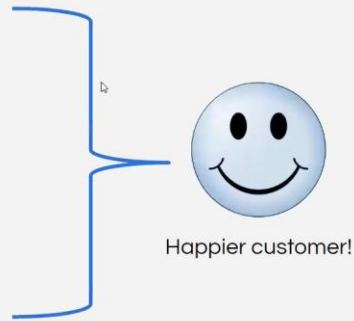
Introducing EV Tap

- Certified to UL 916 Standard (March 2024) and compliant with NEC
- Easy and fast for electrician to install (~ 1 hour)
- **Compatible with all EV chargers on the market**
- Software backend compatible with DERM and VPP solutions
- \$800.00 MSRP

Dynamic charging is better than scheduled charging

- **Dynamic response** – Reduce charging restrictions for EV owners while maintaining the same load reduction for the utility
- **Interoperability** – Can work with any charger on the market, increasing options for residents
- **Modulation** – Option to reduce charging speed instead of turning the charger off to improve user experience



Value: Can integrate with existing software partner

We partner with software solutions

Software Solutions

Energy demand management for grid operators

STEPWISE

- Demand response programs have been around for a long time
- Software solutions effectively manage the grid but do not manage the home
- We complement these solutions by bridging grid and home

Jane Chen

Solution: Stepwise load limiting system for EV charging

Using dynamic load controls, Stepwise enables same day inexpensive electrification...

To eliminate the burden of infrastructure upgrades



Case Study: Boston Single-Family Home



Single family home in Boston looking to install a Wallbox charger. A 200A service upgrade would have cost ~\$15K, so the homeowner opted for an EV Tap at \$4.1K all in

“
It just makes sense!
- Jack F. (Homeowner, Boston)



Adding Capacity & Resiliency

Results of technical review of JJ Yarmoff 4/26/24 memo:

- Engage in conversation with National Grid to:
 - Negotiate the use of the remaining open (unused) 23KV breaker position at the Railyard substation (adding capacity)
 - Connect that breaker to an existing 23 KV line leaving Railyard, other than the two 23 KV lines that go to Marblehead now (adding capacity)
 - Negotiate deal terms consistent with the current MMLD-National Grid Railyard agreement (fixed cost structure for MMLD)



General Manager updates

- MMLD goals – 1st quarter progress report – *see pdf*
- Village 13 update
- Shipyard Area Resiliency (CZM) Grant
- May monthly financials
- Tioga Way update
- New employee recruiting update
- MMWEC Innovation Recognition

MARBLEHEAD MUNICIPAL LIGHT DEPARTMENT SYSTEM SALES STATISTICS						
	MONTH/YEAR June-2023	MONTH/YEAR June-2024	PERCENT CHANGE	YEAR-TO-DATE June-2023	YEAR-TO-DATE June-2024	PERCENT CHANGE
METERED SALES BY RATE CLASS						
RESIDENTIAL	4,970,572	5,806,254	16.813%	32,590,550	34,287,656	5.207%
COMMERCIAL	846,143	902,344	6.642%	5,526,422	5,719,821	3.500%
INDUSTRIAL	1,211,517	1,374,643	13.465%	7,138,992	7,561,646	5.920%
OFF PEAK WATER	0	0	#DIV/0!	524	0	-100.000%
OFF PEAK RATE G	16,462	15,357	-6.712%	108,564	102,522	-5.565%
PRVT AREA LIGHT	12,036	12,036	0.000%	74,921	75,302	0.509%
STORAGE HEAT	1,284	1,528	19.003%	38,021	43,200	13.621%
PHOTOVOLTAICS	(49,710)	(51,570)	3.742%	(160,105)	(184,570)	15.281%
CPP	0	0	0.000%	0	0	0.000%
NON CPP	32,805	33,884	3.289%	225,153	215,309	-4.372%
STREET LIGHTS	20,137	20,137	0.000%	152,315	152,315	0.000%
CHARGEPOINT	1,775	4,503	153.693%	10,944	24,925	127.749%
TOTAL	7,063,021	8,119,116	14.952%	45,706,301	47,998,126	5.014%
REVENUE BY RATE CLASS						
RESIDENTIAL	\$ 1,084,261.63	\$ 1,241,368.08	14.490%	\$ 7,617,274.28	\$ 7,362,770.55	-3.341%
COMMERCIAL	\$ 194,484.99	\$ 203,688.79	4.732%	\$ 1,349,930.44	\$ 1,275,251.82	-5.532%
INDUSTRIAL	\$ 238,419.13	\$ 269,208.26	12.914%	\$ 1,531,055.77	\$ 1,482,113.38	-3.197%
OFF PEAK WATER	\$ -	\$ -	#DIV/0!	\$ 172.54	\$ -	-100.000%
OFF PEAK RATE G	\$ 3,236.57	\$ 3,022.77	-6.606%	\$ 22,654.60	\$ 19,646.78	-13.277%
PRVT AREA LIGHT	\$ 2,325.32	\$ 2,264.50	-2.616%	\$ 15,488.43	\$ 13,847.24	-10.596%
STORAGE HEAT	\$ 320.99	\$ 415.86	29.555%	\$ 8,040.73	\$ 8,181.54	1.751%
PHOTOVOLTAICS	\$ (5,974.22)	\$ (5,020.33)	-15.967%	\$ (19,163.45)	\$ (15,833.87)	-17.375%
CPP	\$ -	\$ -	0.000%	\$ -	\$ -	0.000%
NON CPP	\$ 7,264.74	\$ 7,420.02	2.137%	\$ 52,907.40	\$ 46,771.46	-11.598%
STREET LIGHTS	\$ 3,275.28	\$ 3,449.47	5.318%	\$ 24,774.03	\$ 26,091.56	5.318%
CHARGEPOINT	\$ 354.99	\$ 900.88	153.720%	\$ 2,188.84	\$ 4,985.06	127.749%
TOTAL	\$ 1,527,969.42	\$ 1,726,718.10	13.007%	\$ 10,605,323.61	\$ 10,223,825.52	-3.597%
KWH & DOLLAR VARIANCES						
		KWH			\$	
YTD		2,291,825		YTD	(381,498.09)	
THIS MONTH		1,056,095		THIS MONTH	198,748.68	

	24-Jan	24-Feb	24-Mar	24-Apr	24-May	24-Jun	24-Jul	24-Aug	24-Sep	24-Oct	24-Nov	24-Dec	Total
kWh Sales	8.9	8.9	7.6	7.6	6.7	8.1	9.6	11.1	9.2	7.1	7.4	8.3	100.5
Operating Revenue:	\$1,884,386	\$1,872,704	\$1,638,441	\$1,650,286	\$1,481,444	\$1,727,305	\$1,913,900	\$2,235,500	\$1,862,800	\$1,494,100	\$1,553,100	\$1,741,400	\$21,055,366
Power Expenses:													
Energy	\$528,215	\$346,869	\$273,090	\$232,546	\$218,101	\$307,197	\$502,841	\$441,759	\$247,530	\$267,939	\$267,126	\$462,667	\$4,095,880
Capacity	\$302,049	\$310,978	\$304,831	\$305,499	\$307,325	\$362,554	\$262,572	\$270,007	\$263,232	\$225,897	\$260,094	\$257,320	\$3,432,358
Transmission	\$230,851	\$261,869	\$231,062	\$205,817	\$209,605	\$217,183	\$364,666	\$372,936	\$279,489	\$240,497	\$307,985	\$322,486	\$3,244,445
Other Misc Power Expense	\$49,611	\$63,152	\$76,411	\$82,993	\$39,133	\$47,539	\$37,527	\$35,681	\$37,149	\$30,902	\$26,522	\$28,316	\$554,936
Total Power Expense:	\$1,110,726	\$982,868	\$885,394	\$826,954	\$774,163	\$934,473	\$1,167,606	\$1,120,383	\$827,400	\$765,235	\$861,727	\$1,070,789	\$11,327,619
\$/kwh	\$0.125	\$0.110	\$0.116	\$0.109	\$0.116	\$0.115	\$0.122	\$0.101	\$0.090	\$0.108	\$0.116	\$0.129	\$0.113
Net Income before Operat	773,660	889,836	753,046	823,432	707,281	792,832	746,294	1,115,117	1,035,400	728,865	691,373	670,611	9,727,747
Operating Expenses:													
Payroll & Benefits	290,598	331,253	352,413	312,285	269,496	346,091	338,000	389,000	337,000	389,000	337,000	337,000	4,029,136
Depreciation	178,319	178,319	178,319	178,319	178,319	178,319	178,319	178,319	178,319	178,319	178,319	178,319	2,139,828
Maintenance	57,042	45,797	10,428	45,305	104,928	40,475	71,083	71,083	71,084	71,084	71,084	71,084	736,477
Admin & General	33,974	51,660	38,022	63,460	52,489	52,616	59,666	59,666	59,666	59,666	59,666	59,666	656,217
Outside Services	9,275	8,374	50,255	22,452	55,821	41,846	35,250	35,250	35,250	35,250	35,250	35,250	399,523
Bond & Interest	35,646	35,647	35,647	35,646	35,647	35,647	35,667	35,667	35,667	35,667	35,667	35,667	427,882
Total Operating Expenses	604,854	651,050	665,084	657,467	696,699	694,994	717,985	768,985	716,986	768,986	716,986	716,986	8,377,062
Net Operating Income	168,806	238,786	87,962	165,965	10,581	97,838	28,309	346,132	318,414	-40,121	-25,613	-46,375	1,350,685
Non operating Income	61,680	62,869	73,338	75,158	78,718	74,515	45,000	45,000	45,000	45,000	45,000	45,000	696,278
Net Income Before Town	230,486	301,655	161,300	241,123	89,299	172,353	73,309	391,132	363,414	4,879	19,387	-1,375	2,046,963
Town Payment	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	330,000



2024 Carbon Free Power increase- mid-yr est.

Applying GGES Reporting Standard

Asset	RECs	%
NYP&A	8,344	13.6%
<i>Brookfield Hydro</i>	7,123	11.6%
Berkshire Wind	0	0.0%
Berkshire Wind 2	0	0.0%
Seabrook	14,302	23.3%
Millstone	16,996	27.7%
Hydro Quebec	6,570	10.7%
<i>FirstLight Hydro</i>	7,567	12.3%
Go Green Program	288	0.5%
MLP Solar Rebate	123	0.2%
Total	61,313	100.0%
Sales - MWh	106,454	
Carbon Free %	58%	



New MMLD employee hiring

- Information Systems & Tech Manager – on board
- Engineering Project Manager (EPM) – following up with qualified candidate
- Energy Services Manager – job posting with potential candidates known



MMWEC NextZero Innovation Award



- *The department is spearheading the analysis of how to best encourage residential battery adoption for the use of Virtual Power Plant demand response.*
- *... (MMLD) has also delved into a school rooftop solar project, to bring green, local energy to town*
- *... the light department has been diligent in pursuing innovative methods to reach its goals.*

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