

Light Commission May 4, 2023 meeting minutes

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

From: Jean-Jacques Yarmoff, Secretary

Date: May 24, 2023

Re: Commission Meeting May 4, 2023

A quorum being present, Light Commission Chair Mike Hull opened the meeting at 4:04 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, Smith and Yarmoff participated in person;
Frechette and Wolf participated remotely.

Light Department: General Manager, J. Kowalik; Distribution Manager, Greg Chane and
Manager of Tech. Operations, C. Coleman

Approval of Minutes:

A motion to approve the minutes of the Light Commission meetings of March 7 (open session and executive session), of March 28 (open session and executive session) and of April 10 (open session and executive session) was requested by Chair Hull.

Vote #2023-21 Motion moved by Commissioner Yarmoff, seconded by Commissioner Smith. **Unanimous.**

Comments from the Public

While several members of the public participated in the meeting both remotely and in person, there were no comments from the public.

Battery storage

The Light Department has been putting in place a process for interconnection of residential batteries. Several documents are in preparation.

Policy: Colin Coleman has been drafting an interconnection application and agreement, based on Concord's model which is quite similar to what we need. This draft is being reviewed and will be circulated.

Dematerialization: Joe Kowalik has been reaching out to the town's wiring inspector to put in place a system to ensure that application requests logged into Marblehead's on-line Viewpoint system trigger an automatic e-mail sent to MMLD, when an application request for permit with key words "EV or Solar or Battery" is logged. In addition, a one-time search with these key words will give the current status of applications in Viewpoint.

One-pager process explainer: Commissioner Smith asked that, as we are automatizing the process, we also review the order of the steps of the overall process and ensure it is as streamlined as possible. Currently, in Marblehead, other departments have to weigh in first and MMLD comments come last, meaning that there is no clarity on whether or not MMLD is OK with the proposed connection. This slows down the process. In some other towns, the Light Department is the first step in the process and

the process seems smoother. Whatever the final process we chose in Marblehead, it should be documented and made available to the public for clarity. Commissioner Adam proposed to help draft this document. Eventually, we should have two documents: a policy document, and a one pager, both easily accessible by the public.

The Commission will need to re-discuss policy around - Batteries, - Connected Home program and Incentives for batteries. The incentive program administered by MMWEC should be considered for batteries participating in the Connected Homes program. This will be taken up at a next meeting.

Agenda modification

The Demand charge discussion, and the Utility scale battery chemistry discussion are tabled for a future meeting, instead participants agreed to review updates from MMWEC Annual Meeting held May 3 and 4.

MMWEC's Annual Meeting

General Manager Joe Kowalik, Commissioners Wolf and Yarmoff participated in the meeting held in Devens. The slides presented are shown below.

Future grid load: MMWEC made a presentation on the Future of the grid, looking at a 2050 time horizon, at which time electrification of transportation and of building heating will be accomplished. This will result in a much higher peak consumption in the winter months, and a 236% increase in load on the ISO-NE grid (MMWEC's projections). The projected increase in load from house electrification in the winter months is particularly notable.

Small Modular Nuclear Reactors: NuScale presented its Nuclear Small Modular Reactor technology and status, while UAMPS, Utah's public power cooperative presented the status of their development of NuScale's first commercial reactor in the Carbon Free Power Project. Two points in particular were noted as very significant:

- NuScale reactor's ability to modulate its output very quickly and to follow grid demand, which standard nuclear reactors are not able to provide. According to NuScale this makes their SMR technology a natural partner and enabler of intermittent renewable technologies (solar and wind).
- UAMPS explained the projected cost increases for electricity produced by the CFPP from \$58/MWh to \$89/MWh (taking into account the large subsidies to this first of its kind project – without this government help the project output would be higher than \$120/MWh). These large cost increases have been caused by two reasons only: building material cost increases between 25% and 100% and financial costs associated with higher interest rates. It was stressed that this is not a NuScale issue, or even a nuclear project issue, but an issue for any large scale energy project in the country (that we also see reflected in the Offshore Wind projects in Massachusetts.)

MLPs as test beds of innovation

Commissioner Yarmoff presented actions to organize Municipal Light Plants (MLPs) to serve as test beds of innovation in Massachusetts. The General Manager encouraged this approach.

In summary, MLPs:

- face the same issues as all utilities do, the world over;
- are reactive and can take decisions quickly;
- are solvent;
- need smaller scale deployment than IOUs.

All of these points should make light plant ideal first deployment of industrial solutions.

MLPs can offer the knowledge of the issues. Commissioner Yarmoff discussed with MassCEC which is interested in exchanging with MLPs to better understand the industry problems that need to be solved. Incubators like GreentownLabs (hosting over 150 companies) or North Shore InnoVenture, or non-profits organizations like LeadingCities.org are also very interested in partnering with MLPs to get that real world understanding.

If MLPs are to test innovative industrial solutions, the MLPs will need financial support, as the first commercial units from innovative companies will be expensive. We need to interact with both the legislative and the executive branch for Massachusetts to put in place support for these demonstrations. Having several MLPs work together, such as MMLD with Reading Light Dept, we can increase “deal flow”, innovative solutions will seek us out. And we can do a better due diligence of these solutions by pooling our collective resources.

General Manager's Updates

Village 13 update: Commissioner Hull explained that to bring equipment from Bessom street to the Village 13 substation, a small piece of property owned by the Rockets will have to be crossed. This property needs to be upgraded to allow the turn of a heavy truck. The simplest way may be for MMLD to purchase this small parcel of land (75 ft x 3 ft) and take on the work. Commissioner Hull will be meeting with Rockets tomorrow, to discuss the idea to purchase the parcel.

Introduction of new Distribution Manager: Greg Chane, the newly appointed distribution manager for MMLD introduced himself. An employee of MMLD for the past 18 years, he has worked in the industry for 33 years, previously with Mass Electric and National Grid. From his work with MMLD, Greg knows Marblehead distribution system intimately, every idiosyncrasy, every street. MMLD wants to proactively get ahead of infrastructure updates to accommodate increased load, such as EV chargers, and avoid disruption of service that can occur now.

In Greg's words: "We have a daunting task ahead of us. The long and short of it is: infrastructure maintenance has been deferred far too long, with anywhere from 25 to 35 years of non-maintenance. That needs to be addressed. And this is just for our everyday, daily needs. This is just to keep our lights on. This infrastructure is, I use the word crumbling. It is and does. We're on it. We know our weak points. We're going to devote the resources, we know what to do. We're going to make it happen. ... We can walk down any street in town and there's a pole that is well past its prime. The poles fall over by themselves on a calm day: we know we have a capacity problem. The people who were there at the time had reasons to do what they did and the can has got kicked down the road far enough, but it has to stop somewhere."

To Commissioner Smith question: "Is your team fully staffed"? Greg answered: "I hope to have the full staff within the next month." Two new staff are expected to be hired, to anticipate one staff member retirement and benefit from knowledge and experience transfer.

Brown School Solar PV project update

We received a quote from vendor. The production numbers were shared with MMWEC as MMLD would like to have a comparison to other projects proposals and be able to understand the solidity or softness of the vendor's proposal. Benefits depend on assumptions for energy costs, transmission cost and capacity costs avoidance, over a 25 year production period forecast. We need to make sure the

assumptions are explicit to understand this proposal. It is possible that the NPV may not be positive, but that we accept a project which has a slightly negative NPV.

Once we have a clear understanding of the project financials, MMLD should have another meeting with the School Superintendent and the appropriate School committee members. A review of the Wakefield school solar project might be helpful to prepare for this conversation, as a reference point.

On a separate note, the Sloan school project with regards to solar in Marblehead is coming to an end, with the students presenting their final papers to MIT in a couple of weeks. We may be able to have them participate after that time for them to give us an overview of their work and conclusions.

Next meeting of the Light Board

Next meeting is scheduled for May 30, the day after Memorial Day.

The Light Commission meeting ended at 5:16 pm after a motion to adjourn was proposed, seconded and unanimously adopted.

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Documents presented during May 4 Light Commission Meeting



Agenda

- Approve minutes of March 28th and April 10th
- Public Comments
- Battery storage policy discussion
- Demand charge discussion
- Utility scale battery chemistry discussion
- GM quick updates

Pathways to the Future Grid



Future Grid – Supply Following

Supply

- Replace existing emitting resources with non-emitting.
- Expand non-emitting capacity for anticipated electrification impacts.
- Expand supply intermittency mitigation technologies.

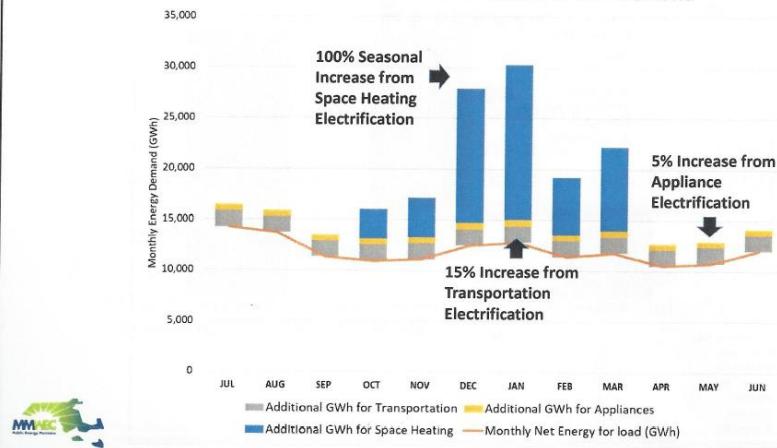
Demand

- Electrify Energy Consumption.
 - Appliances
 - Transportation
 - Space Heating
- Implement Demand Flexibility.

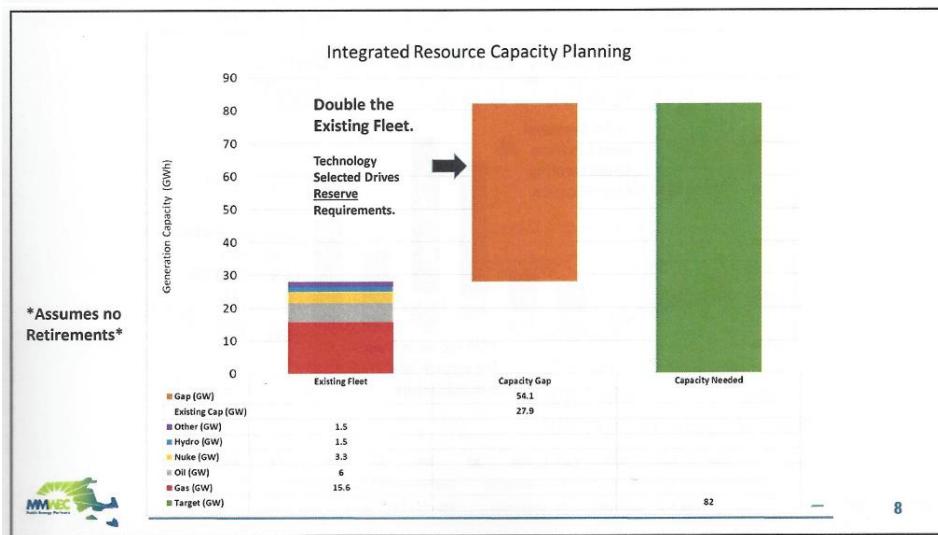
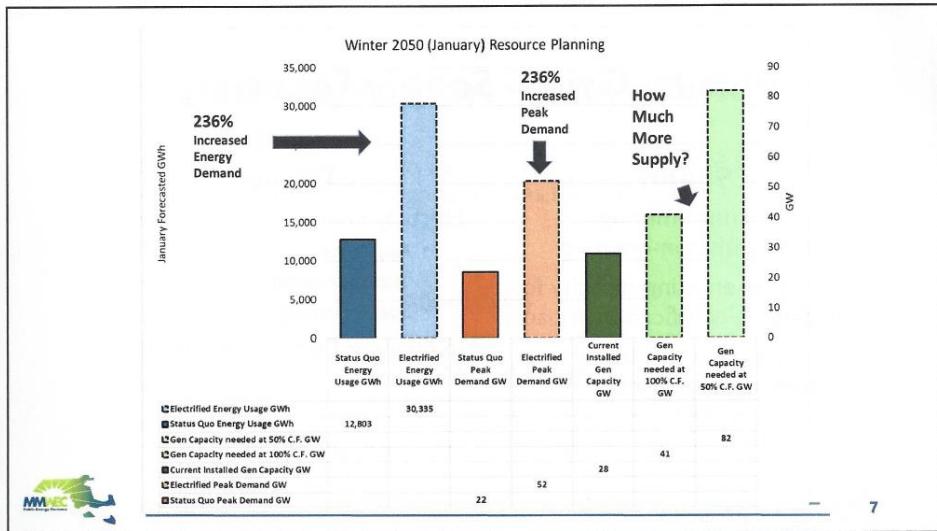


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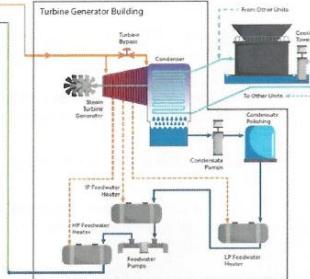
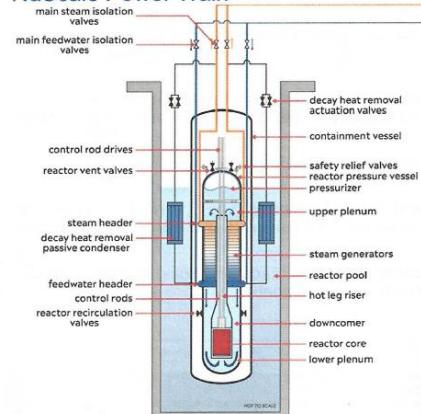
Current Demand vs. 2050 Electrification Demand



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NuScale Power Train



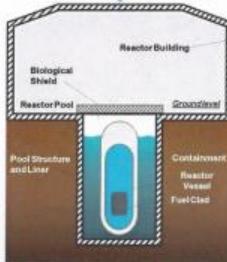
- Each module feeds one turbine generator train, eliminating single-shaft risk.
- 100% turbine bypass capability.
- Small, simple commercial grade. Components support short straightforward refueling outages.



Reducing Plant Risk



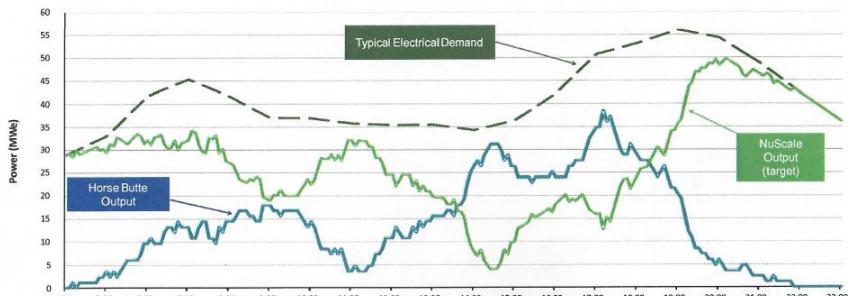
(consequences)



Four additional barriers to release of radioactivity from a NuScale VOYGR™ plant.



Flexible Operations Enable Further Growth in Renewables

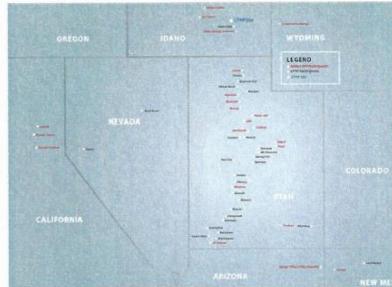


NuScale design meets or exceeds EPRI Utility Requirements Document (URD), Rev. 13, load following and other ancillary service requirements.





- Project-based organization formed in 1980
- 50 public power utilities in seven Western states
- Develop, finance and operate projects for generation and transmission
- Experience facilitating transaction to meet the needs of members
- New generation resources focused on zero carbon resources



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Timeline



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Why Increased Costs?

- The current Class 3 PCE is primarily influenced by external impacts, not by the project's development or by a change in cost competitiveness
- There have been price increases due to inflationary pressures on the energy supply chain that have not been seen for more than 40 years. In the past two years:
 - Producer Price Index for Fabricated Steel Plate increased 54%
 - Producer Price Index for Carbon Steel Piping increased 106%
 - Producer Price Index for Electrical Equipment increased 25%
 - Producer Price Index for Fabricated Structural Steel increased 70%
 - Producer Price Index for Copper Wire and Cable increased 32%
 - Producer Price Index for All Commodities increased 45%
- In addition, the referenced interest rate used for the project's cost modeling has increased approximately 200 basis points since July 2022

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MLPs as test beds for innovation 1/2

- As load serving entities, we know the problems that utilities face.
- We are reactive, we do not have many layers of decision making internally.
- Our comparatively small scale makes the deployment of a solution easier for a company with an innovative solution: our units of measurement will be in MW rather than GW or TW, and hundreds or thousands of customers rather than millions.
- We are solvent, close to our customers and are looking for solutions that will facilitate our work of delivering clean energy reliably and as cheaply as possible.

MLPs as test beds for innovation 2/2

- **Highlight the opportunities** State entities like MassCEC are interested in knowing the real world problems of utilities, as are incubators such as GreenTown Labs and NSIV or organizations like Leading Cities.
- **Allow visibility and action on Beacon Hill** Both the Legislature and the Administration are interested in positioning the Commonwealth to be at the forefront of the energy transition: we can help develop programs locally that allow early adoption, similar to some of California's programs such as SGIP.
- **Increase "Deal Flow"** By being a known organized group, we will get the interest of innovative companies (by possibly building scale or finding the best pilot site) and we will get to know the best opportunities; Each of our systems has different possibilities and interests at any given time for introduction of specific technologies.
- **Evaluate the appropriate opportunities** By combining reviews of innovative technologies, we can do more in depth due diligence.



Quick updates

- Greg Chane, New MMLD Distribution Manager
- Village 13 update
- Brown School solar PV project status