



Town of Reading Meeting Posting with Agenda

Board - Committee - Commission - Council:

RMLD Citizens Advisory Board

Date: 2022-04-04

Time: 6:00 PM

Building:

Location:

Address:

Agenda:

Purpose: General Business

Meeting Called By: Jason Small, Chair

Notices and agendas are to be posted 48 hours in advance of the meetings excluding Saturdays, Sundays and Legal Holidays. Please keep in mind the Town Clerk's hours of operation and make necessary arrangements to be sure your posting is made in an adequate amount of time. A listing of topics that the chair reasonably anticipates will be discussed at the meeting must be on the agenda.

All Meeting Postings must be submitted in typed format; handwritten notices will not be accepted.

Topics of Discussion:

PER GOVERNOR BAKER'S MARCH 10, 2020, ORDER SUSPENDING CERTAIN PROVISIONS OF THE OPEN MEETING LAW, G.L. c. 30A, §20 AND THE JUNE 16, 2021, ACT EXTENDING CERTAIN COVID-19 MEASURES, THIS MEETING WILL BE HELD REMOTELY VIA ZOOM.

For public participation, please email: krybak@rmlid.com. Include your full name, address and telephone number.

1. Call Meeting to Order – J. Small, Chair
2. General Manager's Update – C. O'Brien, General Manager
 - Community Update
 - Green Communities
 - Board Elections
 - Annual Report
 - Economic Development Meeting
3. Integrated Resources Report – G. Phipps, Director of Integrated Resources

Suggested Motion: Move that the Citizens' Advisory Board recommend that the Board of Commissioners vote to accept the General Manager's recommendation to contract with Kearsarge Energy under an energy storage PPA with shared savings, associated with a new 5 MW, 10 MWH battery system to be installed at a Fordham Road, Wilmington, Massachusetts, site, pending final interconnect study and appropriate permitting. *Note: Roll call vote required.*



Town of Reading Meeting Posting with Agenda

4. Engineering & Operations Report: Supply Chain Update –
H. Jaffari, Director of Engineering & Operations

Suggested Motion: Move that the Citizens' Advisory Board recommend that the RMLD Board of Commissioners vote to accept the General Manager's recommendation due to unprecedented and emergency situations, to award BID IFP 2022-10 and IFP 2022-09 for pad mounted and pole mounted transformers from various vendors and distributors at approximately \$2 million in accordance with Massachusetts General Law Chapter 164.

Note: Roll call vote required.

5. Scheduling – J. Small, Chair
 - April CAB Meeting – April 21, 2022
 - Coverage for April Commissioners Meeting

6. Executive Session – J. Small, Chair

Suggested Motion: Move that the Citizens' Advisory Board go into Executive Session pursuant to Massachusetts G.L. c.164 section 47D, exemption from public records and open meeting requirements in certain instances, to consider purchase, exchange, lease or value of real property if the chair declares that an open meeting may have a detrimental effect on the negotiating position of the public body. *Note: Roll call vote required.*

7. Adjournment – J. Small, Chair

Suggested Motion: Move that the Citizens' Advisory Board adjourn. *Note: Roll call vote required.*

Attachment 1

Agenda Item 3: Integrated Resources Report



Integrated Resources Report

Battery Storage and Energy Cost Snapshot

Presented to the

Citizens' Advisory Board

4 April 2022

Outline

Battery Storage at Fordham Road (*motion*)

Wholesale Energy Cost Snapshot

Add battery storage at existing Fordham Road solar site



base case model

	<i>annual average</i>	<i>project life (20 years)</i>
Initial RMLD Investment	\$0	\$0
Total RMLD Avoided Costs <i>(capacity & transmission savings)</i>	\$928,945	\$18,578,905
Base Cost and Shared Savings <i>(storage services w/ performance warranty)</i>	(\$714,473)	(\$14,289,452)

Net RMLD Cost Savings	\$214,473	\$4,289,452
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key model assumptions – base case

- a) Commission 2Q 2023
- b) 3.4 MW (trans) and 4.7 MW (capacity) reduction during peak hours
- c) 85% peak hit rate
- d) Transmission costs - 5% annual increase
- e) Capacity costs - 2% annual increase
- f) No discount rate included

Existing 2.16 MW DC solar array, Fordham Road, Wilmington;
PV array owned and operated by Kearsarge Energy

Kearsarge invests; adds new 5 MW / 10 MWH storage system; then operates

Base case - charge from grid; exploring solar charging economics / logistics

Site access, safety, permitting, ... completed prior to construction

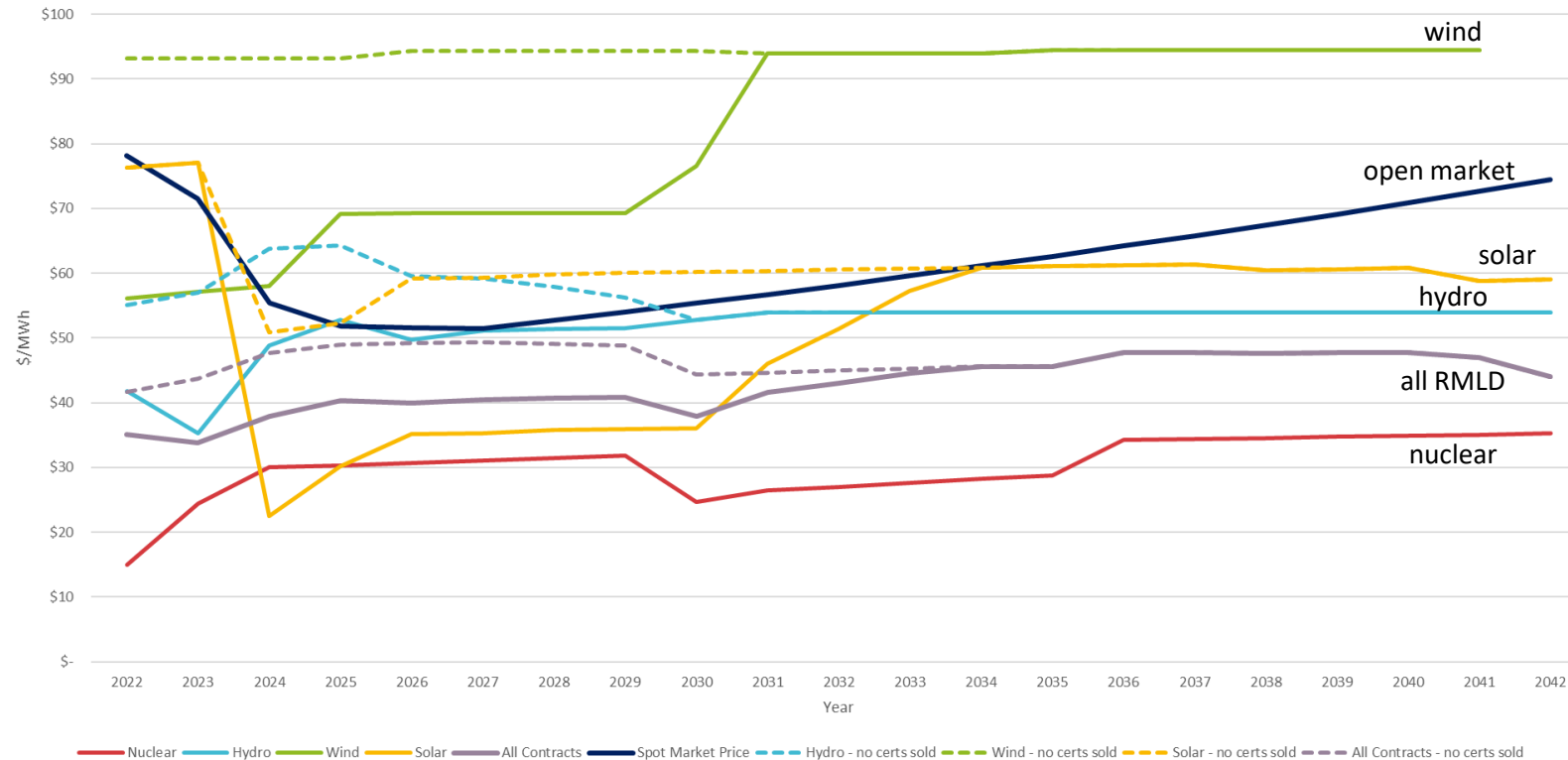
Additional interconnection analysis in process

Aligned incentives and low risk to RMLD

Average \$200,000 annual savings (base case)

RMLD wholesale energy cost forecast

snapshot of current RMLD portfolio (line steps due to specific contracts ending and starting); energy only (capacity and transmission excluded)



- Solid lines - costs net of certificate sales
- Certificate sales decrease over time to meet compliance → pushing net costs higher
- Open market prices expected to double by 2050 (electrification and non-carbon gen)
- Nuclear lowest and 24/7 (firm for base load)
- Solar cost influenced by certificate sales
- Hydro good overall dispatch and price fit
- Wind is consistently expensive but less intermittent (good dispatch match to solar)
- Diverse mix increasingly important

Upward pressure on all RMLD (purple) wholesale energy costs, but less than open market (black) cost forecasts (one benefit of proactively executing long-term supply contracts)

Thank You
from the IRD Team

Attachment 2

Agenda Item 4: Engineering & Operations Report: Supply Chain Update

Engineering & Operations Report

Supply Chain Update



Citizens' Advisory Board

April 4, 2022

Hamid Jaffari, Director of Engineering & Operations

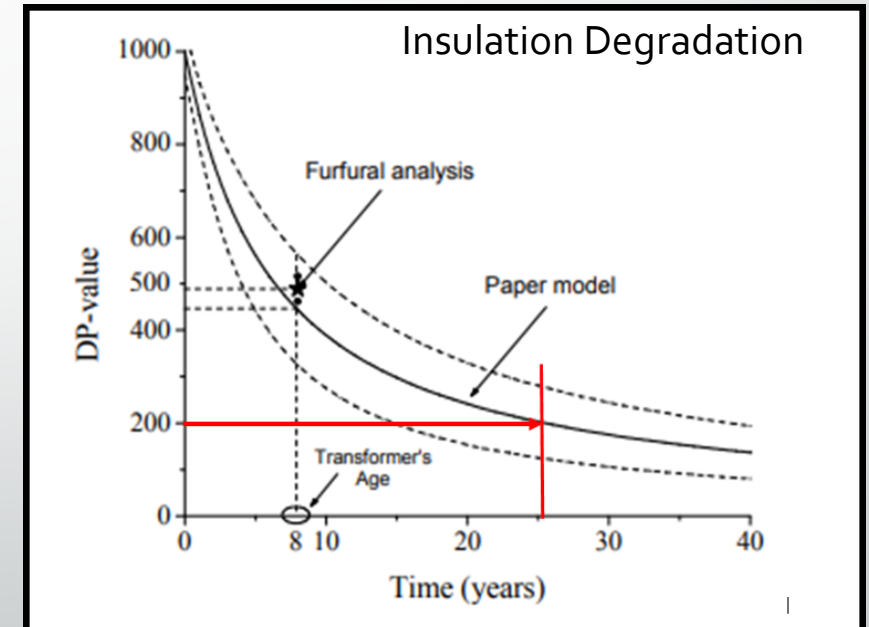
SUPPLY CHAIN UPDATE

Transformers – Key Points

- Aged Transformer Replacement Program
- Transformer replacement helps ensure system reliability and avoids costly oil spill clean-ups.
- Recent bid results revealed dramatic increases in price and delivery lead time for transformers.
- Market conditions are expected to continue at least through 2023.
- RMLD must continue to support system growth, new business, and emergency transformer replacement.
- RMLD will slow transformer replacement rate to extend current inventory.
- RMLD must purchase transformers under current volatile market conditions.
- RMLD should issue another transformer bid to secure current pricing and deliveries in upward market.

Aged Transformer Replacement Strategy

- **RMLD's Proactive Maintenance Plan Started in 2014**
 - Distribution transformers' lifespan matrix: age, load, and physical condition.
 - RMLD has ~4,009 Overhead/Underground Transformers System-wide.
- **Goals of Proactive Replacement Program**
 - Ensure material availability/stocking
 - Ensure network reliability
 - Proactive maintenance avoids excessive cost
- **Transformer Upgrade/Replacement Criteria**
 - Physical Condition
 - Age
 - Load - Transformer Load Management (TLM)



TRANSFORMER LEAD TIME AND PRICING

Sample Comparison

Pole Mount Transformers	2021 Average Price (from Bid)	2022 Average Price (from Bid)	% Increase
37.5 kVa 1Ø WYE 240/120	\$1,619.00	\$4,081.75	152%
50 kVa 1Ø WYE 240/120	\$1,898.50	\$4,618.00	143%
Delivery Range	14-20 weeks	52-102 weeks	

Pad Mount Transformers	2021 Average Price (from Bid)	2022 Average Price (from Bid)	% Increase
25 kVa 1Ø FR3 240/120	\$2,550.33	\$16,022.00	528%
37.5 kVa 1Ø FR3 240/120	\$2,763.67	\$10,359.67	275%
75 kVa 1Ø FR3 240/120	\$3,660.67	\$22,463.00	514%
225 kVa 3Ø DF 208Y/120	\$9,724.25	\$19,915.87	105%
300 kVa 3Ø DF 208Y/120	\$10,866.50	\$23,927.37	120%
300 kVa 3Ø DF 480Y/277	\$9,654.33	\$22,188.94	130%
Delivery Range	18-32 weeks	22-102 weeks	

CY2022 Challenges

- Transformer manufacturers are not committing to a firm price due to unstable steel, iron, copper, and oil prices.
- Transformer costs have increased as much as 500%
- Transformer delivery delayed 30-102 weeks
- Future quotes expected to include escalating price at the time of placing orders.

Supply Chain Impact on Maintenance & Capital Projects

TRANSFORMERS

Approximate Current Transformer Inventory

Type	# in System	# Available in Stock	Stock as % of System
Pad-mount	1,023	183	18%
Pole-mount	2,865	180	6%
Total	3,888	363	9%

- Targeted stock amount is 10% of the number of transformers currently in the system.
- Limited transformer supply will impact the following Capital Projects
 - Aged Transformer Replacement Program
 - Underground Area Upgrades
 - 13.8 kV Stepdown Area Upgrades
- RMLD current inventory of transformers is estimated to last until Nov/Dec 2022.

New Strategy – Transformer Replacement

Prior Strategy:

- Inspect All UG Transformers System Wide (700) Annually
- Replace Approximately 100-180 transformers per year

New Strategy:

- Reprioritize Transformer Replacement – replace and/or reconfigure when transformer:
 - Meets aged, over-loaded, and physical condition matrix.
 - Leaking and/or seeping oil/emergencies
- Transformers coming back from the field are evaluated for potential refurbishment.

- **Utilization Category**

Refocused

Maintenance Related (Aged Transformers)

25%

Capital Projects & New Business

15%

Emergencies/Overloaded Transformers/Safety

60%

- Projection: Replace <100 transformers per year
- Market pricing volatility; evaluate bulk/cooperative MLP effort.

ADDITIONAL SUPPLY CHAIN CONSIDERATIONS

LEAD TIME/SHIPPING

- Substation Parts
 - Breaker for Station 5: ordered mid-July 2021; typical turnaround 16-18 weeks. Delivery has been delayed several times – delivery pending any time now.
 - 35kV Breaker for Station 4: ordered December 2021; typical turnaround 4-5 months. July 2022 delivery pending.
- Itron Meters: typical turnaround 6 weeks; current lead time 4-6 months.
- Overhead Wire (various types) - average current turnaround 2-10 weeks; previous turnaround within one week.
- Underground Wire (various types) - current turnaround 1 week; this is standard.
- Poles (various types) - current turnaround 2 weeks; this is standard.
- Terminations & Elbows (various types) - current turnaround 3-4 weeks; this is standard.
- Switchgear – order placed on December 1, 2021. **July 1, 2022, estimated receipt (this is standard).**

The Stock Department is monitoring lead times and is currently ordering above normal ordering patterns for standard stock items.

ADDITIONAL SUPPLY CHAIN CONSIDERATIONS

LEAD TIME/SHIPPING

Continued...

- Generator for Substation 3 – BOC approved in May 2021; ordered July 13 with estimated 22 weeks delivery. Has been delayed several times; September 2022 current anticipated delivery.
- Rolling Stock
 - Material Handler – BOC approval in July 2021; estimated 47-52 weeks delivery. August 2022 current anticipated delivery.
 - Trouble Truck – pending March 2022 BOC approval; estimated 57-70 weeks delivery.



Any Questions?