



Town of Reading Meeting Minutes

Board - Committee - Commission - Council:

RMLD Citizens Advisory Board

Date: 2019-12-19

Time: 6:30 PM

Building: Reading Municipal Light Building

Location: Winfred Spurr Audio Visual Room

Address: 230 Ash Street

Session: Open Session

Purpose: General Business

Version: Draft

Attendees: **Members - Present:**

Mr. Dennis Kelley, Chair (Wilmington); Mr. Jason Small, Vice Chair (North Reading); Mr. Vivek Soni (Reading)

Members - Not Present:

Mr. George Hooper, Secretary (Wilmington)

Others Present:

Mr. John Stempeck, RMLD Board of Commissioners
Mr. Zachary Borton, Mr. Hamid Jaffari, Ms. Kathleen Rybak, Mr. Charles Underhill

Minutes Respectfully Submitted By: Mr. Dennis Kelley, Chair

Topics of Discussion:

1. Call Meeting to Order – D. Kelley, Chair
2. Approval of Minutes – D. Kelley, Chair
Materials: Draft Minutes from October 23, 2019, meeting

Mr. Soni made a ***motion*** that the Citizens' Advisory Board approve the Minutes of the October 23, 2019, meeting as written, seconded by Mr. Small. Hearing no objections minutes were approved as written.

3. General Manager's Update – C. O'Brien, General Manager
Mr. Jaffari reported for Ms. O'Brien
 - Payment to the Town of Reading – Mr. Jaffari reported that at the December 2nd meeting of the Board of Commissioners, Energy New England (ENE) made a presentation that offered a solution regarding the payment to the Town of Reading. A formal recommendation from the BOC is expected by February. Mr. Stempeck noted that Energy New England made a very good presentation and that the Board of Commissioners is currently looking at the best way to address the payment.
 - Public Relations Updates – Mr. Jaffari provided an overview of the recent community relations initiatives including the recent coat drive, the upcoming elementary school art contest, new homeowner's information sessions being scheduled for March, the campaign to register customers for IVR/OMS, and an electric vehicle open house being planned for 2020. Mr. Jaffari noted that the 2020 RMLD calendars are now available.

4. Power Supply Update – C. Underhill, Director of Integrated Resources
Materials: Power Supply for September and October 2019 (slides)

Mr. Underhill provided an update on Total Purchase Power Expenses through October 2019 (Slide 2). Year-to-date we are below budget. Some of the factors that have contributed to coming in below budget include: the actual load; the success of programs such as “Shave the Peak”; a portion of the power supply portfolio being open to the market; and the pilot program with NextEra for load following, which allowed RMLD to stabilize some of the price and load volatility in 2019. Mr. Underhill noted that he will have a more complete report in March to wrap up the annual numbers, to show how the pilot programs performed over time and what is being recommended for the mix of these programs going forward.

Mr. Underhill noted the biggest effects of load are on Energy Costs (Slide 3), but price is a piece of that as well. RMLD loads were down in January as it was warmer than normal for that period. Staff is taking a look at RMLD’s historic degree days and may either shorten the averages or adjust the projected “normal” heating degree day numbers to account for what may be lower heating degree days and higher cooling degree days than we’ve traditionally come to expect. This may adjust our load forecast and possibly our pricing expectations.

Mr. Underhill reviewed Transmission Costs (Slide 4) which were down. In the first four months of the year, transmission came in at just about what we had budgeted; we were able to predict the peak for each of those months fairly well. From May forward we are seeing the impact of our peak management programs, primarily (in this case) the battery system that came online in May. Capacity Costs (Slide 5) are down. They started to come down in the summer period when the new transmission rates and old loads kicked in (lower than budgeted).

Mr. Underhill reported that Energy New England will be updating our budget for power supply on a quarterly basis. We will use those numbers to better target our purchase power and fuel adjustment costs as we go through the year so that we minimize the difference between budget and actual at the end of the year. It is a way to try to improve the quality of the rate-making component of our revenues. Over time (by updating the quarterly budget) we’ll be more accurate as we get toward the end of the year, especially with variable energy prices. This will only impact the calculation of the purchase power fuel adjustment charges.

Mr. Underhill then reviewed the Actual kWh Purchase by Resource (Slide 6). Mr. Underhill noted that for a couple of months we actually had spot market sales back into the market. For a short period (starting with March or April billing) we purchased a hydro resource; this was a long-term purchase, but it resulted in a couple of months where our purchases of power exceeded our anticipated loads. Two months’ excess resources against a ten-year power supply contract for the hydro seemed a reasonable trade-off. In July and August loads were actually higher than the original budgeted loads. September and October load fell off again. This tends to indicate more the warming trends that we hear about associated with climate change.

Mr. Stempeck asked if we made a profit selling the power back into the market. Mr. Underhill responded that it depends on what we bought it at and the market price that we sold it at. In order to give an accurate assessment of that, we would need to do an hour-by-hour transaction review (price changes every hour). The marginal resource for that hour determines what we bought it at. Mr. Underhill noted that the under Chapter 164, we are a load aggregator, and are authorized and encouraged to aggregate our retail load (residential and non-residential loads). We are not supposed to overreach that and get into speculative positions to trade in the market

for benefit. There are some products – financial transmission rights - that we can look at. That is the opportunity to buy transmission, particularly on tight hubs where the transmission obligation can flow in one direction or the other. RMLD does not have the modeling capabilities or staffing to do that. We limit our activity to managing our portfolio up to our load level, and that's in keeping with our adopted risk strategy.

The group discussed future options to manage the load and options to off-set decreasing kWh sales including use of renewables, battery storage options, Electrification (EV chargers), and efficiency programs.

Mr. Underhill then reviewed the Power Supply Portfolio Cost Breakdown (Slide 7). Transmission costs have been rising over the past several years and continuing up. The "Shred the Peak" program, the battery storage program, and the DG unit are targeted very specifically to mitigate the transmission and capacity costs. We've run from 28% to 35% for the capacity costs. Transmission costs for 2018 were based on the 2017 capacity market and the load, which we pay for on about a year lag. Capacity costs (2016-2019) went 31%, 34%, 36% and now back down; those are going to drop again when we get to 2021 and 2022. We look at how these cost structures play out and what we can do to focus on those and mitigate them. With the rise in capacity and transmission as a component of our power supply budget, our energy component has actually dropped from a high of about 59% of the portfolio to a current anticipated low of about 42%. Mr. Underhill noted that while adjusting to some of these cost center changes, we have still managed to increase the non-carbon component of our portfolio from just under 20% to just over 30% over the last ten years (as illustrated with the yellow line).

Mr. Underhill noted that RMLD is responding to environmental, social, and regulatory concerns, while still maintaining a relatively stable price where possible. We think we are at a fairly stable period as reflected in wholesale market prices historically, and we are adjusting.

Mr. Underhill then reviewed the RMLD Power Supply Outlook Through 2040 (Slide 8). The chart shows that over the next couple of years, the bulk of the portfolio is evaporating (contracts are expiring). This represents opportunities for RMLD to acquire resources – either short or long-term. The bar portion of the chart represents RMLD resources and those play out between non-carbon and the non-dispatchable renewable resources. Mr. Underhill noted that pending contracts are coming in as renewable or non-carbon resources. As we buy these contracts, we are including the REC's option at this time.

The Mass Renewable Energy Portfolio Standard (Slide 9) is the original renewable portfolio standard that the IOUs were subject to. A correction to the slide was noted: the first bullet on the slide should read "... Class 1 will grow by 2%." RMLD was not subject to this standard, but we could commit to developing the types of energy that would comply with that program. At such point as we decide to keep and retire the REC's, our resources would in fact comply with that standard. However, RMLD is more closely tied to the Clean Energy Standard (Slide 11). The legislature has moved from a renewal definition to a non-carbon definition and upped the ante; we are supposed to be 80% by 2050. The Golden Bill (Slide 13) has not yet been approved. Municipal Light Plants (MLPs) are insisting that investments in nuclear resources and non-dispatchable alternative energy (solar, hydro, wind) qualify. But, going forward for solar, hydro and wind, we will buy and retire the REC's. RMLD is ahead of any of these standards. At around 2030 RMLD is committing to being equal to the portfolio components of the investor-owned utilities and will carry out at that same level going forward.

Mr. Stempeck asked if retiring the REC's then removes the contribution they have been providing to lowering our overall rates. Mr. Underhill responded that it will put

upward pressure on rates, but not to the extent it would have done at the time the initial contracts were signed; the value of Massachusetts Class 1 REC's have tumbled and we have already taken a portion of that hit. When we sell the REC's now, we are not realizing the economic value that we were realizing at the onset. However, it represents \$700k of an ~\$7m power supply portfolio (about 1%).

Mr. Soni asked about the process for purchasing the supply that needs to be acquired in 2020. The graph is on an annual basis; if you showed it on a monthly basis what would it look like? When do you need it? Mr. Borton responded that on the front end though Jan/Feb/March we are close to our load. Mr. Underhill noted that the graph does not include the TFA transactions completed recently. There are parts of the year that are still open. We have gotten approval for the programs that we are using so we can now fill in the pieces.

Mr. Soni asked (relative to the Slide 2) about the \$6m savings on the total expenses this year. Historically, where has RMLD been in terms of budget versus actual. Mr. Underhill responded that he could pull together budget versus actual year to year.

Mr. Underhill then gave an update of the RMLD TFA (Transaction Facilitation Agreements) (Slide 15-16), which are market off-set purchases for limited duration. This program has been in place since 2018 and provides structured decision-making for more frequent purchases based on price triggers and time triggers. It has been very successful in terms of what it has produced for below budget activity; it is helping to stabilize our power supply cost structure. The table shows all of the transactions and the months they were made. As you would expect, in the earlier years (2019/2020) we have high economic volumes, and then declining volumes over time because the further out you get the higher the risk premiums are in the forward market so we are not seeing those drop below a trigger price for us historically – it's based on historic averages. This is indicative of the eb and flow of the TFA.

Mr. Underhill then reviewed the RMLD Load Following Experience (Slide 17). The LFA did what it was supposed to do; it brought us in below budget. However, as long as the wholesale market is stable, we may be able to extend the savings with some of the IRD resources in house. We should keep the LFA as a resource and look at it every year - see how the environment around us is changing – if it is becoming more volatile. There may be a point where this becomes a better option, and we have the opportunity to exercise it on a year-to-year basis.

Mr. Underhill reviewed the RMLD Peak Demand Assets Performance (Slide 18). Staff looked at a small set of numbers from CY2019 YTD to show the YTD and cumulative savings for capacity and transmission for the different programs. The Distributed Generator saved ~\$434k in CY19 YTD, ~\$1m total to date. Solar Choice 1 saved ~\$46k in CY19, ~80k to date (over three years). Solar Choice 2 is negative as a function of timing of when it came on board and the pricing for capacity and transmission credits against what it cost for the unit. It will be in the black in 2020.

Mr. Stempeck asked about the return on asset number for these programs. Mr. Underhill noted that RMLD does not own the battery storage unit; we would be looking at NextEra's investment. Mr. Stempeck said it would be interesting to see both; RMLD got a grant for the battery, so it provides encouragement for doing more. Mr. Jaffari noted for the generator we estimated between 4.5 to 5 years for the return on investment and we are on target. Mr. Underhill noted, the table shows that all of our peak management programs, in aggregate, are resulting in rather significant savings against capacity and transmission. Solar Choice 2 should go into the black next year. Chair Kelley noted that these programs were something new to RMLD and they are not cookie cutter - there is some work and some fine tuning, but it shows a positive number toward the goal of the programs.

Mr. Soni asked what Solar Choice 3 would look like given the lessons learned from Solar Choice 2. Mr. Underhill responded that the RFI for Solar Choice 3 should be out early in January. Solar Choice 3 will be structured differently. It will be unlimited size - a phase development project where we will build a solar platform and customers buy panels to come into that platform. When the platform is full, we will build the next. RMLD is doing a study to prioritize the sites for solar in RMLD's service territory (independent of town location), and prioritizing sites based on suitability of the site. We are going to have a cost-effective list of locations (municipal properties and large commercial projects) and will keep building as long as there is interest in the program. Mr. Underhill noted the program will have diminishing returns; you start with your best site first, which will be the most cost effective. The market will be monitored to make sure that we do not cross over into non-cost-effective components of the project. These solar installations will come out from behind the retail meter, they don't adversely impact our revenue stream, and we can see what the load profile looks like so we can continue to plan the reasonable development of the distribution system to serve those loads. Mr. Jaffari noted that RMLD is doing a study to see what the solar and battery saturation limit is for every feeder. There are many factors that play out into determining what we can put on every feeder; we have to consider the system's operational stability.

Chair Kelley thanked Mr. Underhill for an informative presentation.

5. Engineering & Operations Report – H. Jaffari, Director of Engineering & Operations
Materials: Engineering & Operations Presentation (Slides)

Reliability: Mr. Jaffari reviewed the RMLD Reliability Indices (Slide 2). RMLD is well below the national and regional averages. Mr. Jaffari thanked CAB and Board for supporting the budget for the maintenance programs and capital improvements, which impact reliability, add to the net plant value and preserve the rate payers' investment. Mr. Soni asked if there is a correlation between the utility's record of reliability and the rates. Mr. Underhill noted that utility differences (rural vs. urban, size, policy considerations and different pricing structures) make comparability very challenging. New England is the highest cost electric region in the US (absent Hawaii and Puerto Rico).

Mr. Jaffari reviewed the Outages (Slide 3) for November. The chart shows RMLD is below the annual average (for the same year-to-date timeframe) in most areas.

Harmonics/Power Factor Enforcement: Mr. Jaffari then provided an explanation of Power Factor (Slide 4), which measures the ratio of real power to apparent power. There are two components to power – real (or active) power and reactive power (or non-usable power). RMLD would like to see a power factor of 90% and above. Below that, the utility is paying for that non-useable power. RMLD's overall system losses is approximately 3.7%, which is really good. We are doing well because we are using more efficient transformers as a part of the transformer replacement program and the other efficiency programs that we have implemented. RMLD must be cognizant of these losses and have a metering system that is able to tell us how well we are doing so that we can manage the power factor; if we don't watch this and it gets bigger and bigger, we will have to spend more money to bring it under control, costing the rate payer more money.

Mr. Jaffari then described Harmonics (Slide 5), which is the multiple of the fundamental frequency of the system. The damaging harmonics are the odd harmonics (3rd, 5th, 7th, 9th and 11th). The even harmonics are not that damaging. Mr. Jaffari reported that there are commercial meters that are able to measure and monitor harmonics. If they are raising and its causing problems, we are going to be able to detect the source. Residential meters, unfortunately, cannot pick up harmonics. Some residential meters could give the maximum kVA demand and the maximum kW demand, so that we can calculate the power factor back at the head-

end and know exactly at every node on the system (every residential home or commercial location) how bad the power factor is.

Mr. Stempeck asked if the harmonics are also generated by the user. Mr. Jaffari responded yes; anytime you convert from AC to DC you are basically generating one of these ripples that will distort the voltage and current signals. Equipment such as computers, cell phones (chargers), Variable Frequency Drives, solar inverters, and EV chargers produce harmonics. With use of all of these technologies increasing, we need to be able to detect and monitor harmonics onto the system so that we can manage that better. The group discussed the impact of power factor and harmonics on the system and the programs in place or planned to monitor their impact. Mr. Jaffari reviewed Power Factor & Harmonics Metering (Slide 6) as well as the Utility Survey (Slide 7), which shows what other utilities are doing with regard to billing for Power Factor and/or Harmonics. For RMLD, it would be a policy-based decision on whether to bill for power factor and harmonics in the future. Mr. Jaffari noted the reason to discuss this now is that we are looking to the future when making meter purchases. Mr. Jaffari then reviewed Harmonics (Slide 8), which shows the limits that the IEEE is suggesting, and the ANSI C12.10 Section 3.8 (Slide 9), which shows the essential metering displays for billing purposes. We are considering this for all the (commercial) meters that we purchase in the future.

Pole Inspection – Wilmington: Mr. Jaffari reviewed the results of the most recent Pole Inspection (Slide 10) for the RMLD set areas (North Reading and half of Reading). The orange indicates the number of poles that have failed since we began this program in 2014. The number of “failed” poles started high (in 2014) and continues to go down. Mr. Jaffari noted that Verizon has started testing poles in their set communities (Wilmington, Lynnfield, and half of Reading). Verizon reports that Wilmington inspections are about 95% complete. Verizon has braced some poles in the area, which they say should extend the life (of the pole) another 10 years.

6. Board of Commissioners Update – J. Stempeck, Commissioner

Mr. Stempeck provided an update earlier as part of the discussion regarding the Payment to the Town of Reading and had nothing else of significance to report.

7. Scheduling: CAB Meetings & Commissioners Meetings Coverage – D. Kelley, Chair

The next CAB meeting was scheduled for 6:30 pm on January 7th immediately prior to the Commissioners meeting. Mr. Soni will cover the Commissioners meeting.

Chair Kelley acknowledged that he had received the letter regarding the 20-Year Agreement, and that Mr. Hooper had spoken with the Town Manager. The Selectmen are looking at it now. Mr. Jaffari asked about the status of the Wilmington land for the new substation. Mr. Kelley asked Mr. Jaffari to follow-up with his questions in an email to him, Mr. Hooper, and Mr. Hull.

8. Adjournment – D. Kelley, Chair

Vice Chair Small made a **motion** to adjourn the Citizens’ Advisory Board meeting, seconded by Mr. Soni. **Motion carried 3:0:1** (3 in favor, 0 opposed, 1 absent).

The CAB meeting adjourned at 8:34 PM.

As approved on _____