

Light Commission meeting minutes

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

From: Jean-Jacques Yarmoff, Secretary

CC:

Date: July 19, 2022

Re: Commission Meeting July 12, 2022

A quorum being present, Light Commission Chair Mike Hull opened the meeting at 4:30 pm, the meeting being held both in person and with remote access available to the public.

Participated in meeting:

Commissioners: Frechette, Hull, Johnson, Wolf and Yarmoff;
Light Department: General Manager Joe Kowalik and Business Manager Matt Barrett.
Invited: Utility Financial Solutions: VP Dawn Lund and Financial Consultant Chris Lund.

Election of officers of the Commission

Vote #2022-20 Moved by Commissioner Wolf and seconded by Commissioner Frechette to reelect Commissioner Hull to the chair. **Unanimous.**

Vote #2022-21 Moved by Commissioner Johnson and seconded by Commissioner Frechette to elect Commissioner Wolf to Vice-Chair. **Unanimous.**

Commissioner Yarmoff proposed to create the position of Secretary to be held by a member of the Commission. The Secretary will - take notes during Commission meetings and prepare the minutes in a timely manner for review by the Commission; - Assist the Chair, the Vice-Chair, and as appropriate the Light Department General Manager in gathering documents and otherwise prepare the next meeting of the Commission.

Vote #2022-22 and -23 Moved by Commissioner Wolf and seconded by Commissioner Frechette to create the position of Secretary and to elect Yarmoff to the position. **Unanimous.**

The Commission also discussed nominating Commissioner Wolf to represent the Light Commission on Green Marblehead Committee, subject to the appropriate wording of the charter of the Green Marblehead Committee.

Rate adjustment

The General Manager explained that the increase in fossil fuel prices have led to an increase in the dollar charge of energy MMLD purchases (the year to date is otherwise unremarkable in terms of amount of energy purchased). This would result in a projected deficit of around \$650K to \$700K for the current exercise if no corrective action were taken. Per law, MMLD cannot have a negative exercise. MMLD will use its “Power charge adjustment” mechanism (PPA line on customers’ bills) to offset this increase in procurement costs. The General Manager announced he planned to increase the PPA by 1.5 cents to 5.6 c/kWh starting at the next billing cycle on August 1. This will result in a \$635K increase in net income, bringing the projected end of year result close to neutral. Depending on wholesale electricity prices evolution going forward and consumption later in the year, this may have to be revised.

This change is under the control of the Light Department and no vote of the Commission is required.

Rate Structure: Base Charge

The General Manager explained a proposed change to the rate structure. The intent of the change is to more closely match the fixed base rate paid by rate payers to the fixed costs of the Light Department. The intent is to be revenue neutral for MMLD, and a resident consuming the “average amount of energy” will see no change to their total bills. See also the detailed discussion by UFS page 4 below.

Under the proposal, which would be implemented over a two-year period, the fixed base charge would increase from \$4.25 to \$11.36 in a first phase in late 2022 and to \$18.47 in a second phase in late 2023, while at the same time the total energy rate paid by residents (energy charge + PPA charge) would decrease by a cent a year. There would be no change to the bill of a customer with an average usage of 663 kWh/month.

Rate Structure: Time of Use

The General Manager explained a proposed introduction of a Time of Use change to the rates. Again, the intended change would be neutral for MMLD. The introduction of rate changes at different time of day will more closely match the price that MMLD pays for energy. See also UFS comments, page 6.

The detailed rate levels need to be confirmed by the detailed study which will be conducted by UFS. The new rate structure could be introduced by March/April 2023 and depends on an upgrade to the Nexgrid server, its software, the resolution of possible data collection and billing issues before roll-out.

Vote # 2022-24

The General Manager asked the Commission’s approval to initiate the process of changing the rate structure. A motion was proposed to increase base rates and lower energy rates as indicated in the schedule presented on page 6, first slide, on a two year timetable, with the first increase to take effect on November 1, 2022 and the second increase to take effect November 1, 2023. Also effective on November 1, reset the PPA to \$0.00 and modify the rates accordingly. This is contingent on the General Manager proposing and executing a communication strategy including at least both written documents sent with the monthly bills and a public information session before the changes are put into effect.

Motion moved by Commissioner Frechette, seconded by Commissioner Wolf. **Unanimous.**

Several issues having surfaced after the meeting, the motion adopted in Vote 2022-24 will be re-discussed at the next Commission meeting.

General Manager Updates

Update of Village 13 substation / Behind the meter battery

MMLD anticipates receiving several bids for the Switchgear the week of July 14.

Three vendors for batteries have been selected, site visits will take place July 26, earliest installation target date 2025.

Tree trimming

Mayer Tree Services started clearing the brush under the main 23 kV lines: this will allow assessment of and access to the trees that need to be trimmed. This process will start after August 1st. It is important to communicate about this before we trim trees. As MMLD protects the main power lines in town and cuts a few trees, MMLD may consider helping the Tree Warden plant new trees in appropriate places in town by making a financial contribution to the fund dedicated to that effect.

Vote # 2022-25 Motion was moved by Commissioner Frechette, seconded by Commissioner Wolf to approve the minutes of the June 7, 2022 meeting. **Frechette, Hull, Wolf in favor; Yarmoff abstained.**

Other Agenda Items

The other agenda items were not discussed for lack of time, and will be discussed at the next meeting of the Commission, set for July 26, 2022.

- ***Goals and objectives of the General Manager.*** The General Manager will provide comments on the objectives proposed at the June 7 Commission meeting before the next meeting.

- ***Interconnection permits.*** The General Manager will provide in writing the reasons behind an interconnection ban on batteries.

- ***Decarbonization timeline 2040-2050.*** The General Manager will provide an update based on MMWEC's input.

The Meeting adjourned at 7:30 pm, after termination of the GoToMeeting remote meeting session.

Details of the rate structure proposals and discussion

UFS VP Dawn Lund and Financial Consultant Chris Lund explained the details of the rate study they conducted which led to the current proposal. These results were already shown to the Board in January 2022 after the study was launched in June of 2021. There are no changes to the proposal since the January presentation. The slides showed are referenced from page 8 of these minutes.

The rates changes proposed in the motion have no link with a newly elected board: nothing has changed since the first presentation of this data in January. Instead, the changes are aimed at assuring the financial stability of MMLD. By law, MMLD needs to have positive income, and this change in the rate structure will help stabilize income over time. It is important to note that the recommendation proposed by the General Manager does not include the two proposed rate increases the Consultants used as assumptions in their study, which UFS sees as necessary to stabilize the income over the time period of the study.

Ms Lund explained that in the models they develop for utilities when conducting rate structure studies, UFS focuses on three important measure of financial strength of utilities: Projected Adjusted Operating Income; Projected Cash Balances and Projected Debt Coverage Ratio.

According to UFS, Marblehead is in a reasonable financial position currently. The Adjusted Operating Income, while lower than the recommended amount, allows Marblehead to service its debt appropriately. Also, the cash reserves are higher than the minimum recommended. These cash reserves mean that the adjustment of rates to bolster Operating Income can be minimum, and phased over time.

The projections show that Operating Income declines over time for several reasons: increases in power supply prices, inflation (salaries, healthcare), and capital investment depreciation. The target Operating Income increases over the period of the study mainly because of the inflationary effect on replacement cost of the existing network.

Meanwhile the cash balance is high: why? Because Marblehead network is 56% depreciated. This is not alarming, Marblehead is in a reasonable range, but has over-depreciated compared to its peers. MMLD has not invested into the system at the rate it has depreciated. Most systems are below 50% but Marblehead's situation is not unique. But MMLD should not think that, because it has a high cash balance, it is over-charging the customers. Instead this is a reflection of the fact that Marblehead has underinvested over a significant number of years.

The projected income is lower than recommended and decreasing to uncomfortable levels over the study period: this is why UFS is introducing these two possible rate increases of 1.5% in each of 2023 and 2026. The rate payers are otherwise not fully funding the system.

The assumption for investments taken in this study is: \$2.6M in 2022 then 2023-26 ~\$1.8M per year. If we were to invest more in the system, then projected expenses would increase by the additional depreciation. If we invest aggressively in the network, targeted minimum Operating Income would decrease (age of system will become newer). It would also change the cash balance. As an example, if we were to assume the capital investments were fixed at \$2.6M? Cash would decrease by ~\$4M. And expenses would increase by the additional depreciation (\$4M depreciated over 25 years.) It would change the Operating Income target slightly.

Another assumption of this analysis is that load is stable with increases in both 2024 and in 2026 by 0.3% only. In other words, this analysis does not take into account potential increases in electricity consumption due to strategic electrification for housing heating and transportation.

The study assumes that a structural change takes place adjusting the base rates to the fixed charge of MMLD, as per the recommendation of the General Manager.

One of the most important conclusion of the rate study is that additional rate increases will be necessary to take into account inflation, increases in energy charges, etc. “The worst thing you can do is train your rate payers to think you can continue on without rate adjustments, when in reality expenses increase every year.” The projected increases would be largely under inflationary increases and MMLD is doing a great job of mitigating these increases. MMLD is not even passing through inflationary rate adjustments, which should happen yearly. It is also important to note that utilities that do not have a PPA charge adjustment system are not in good position. “MMLD is in the minority of utilities to be able to stabilize the Operating Income with these minor rate increases over the study period.”

Yet, it is important to keep these rate increases in mind as we will communicate about changes to the structure, which are not rate increases, but cover the same time period when UFS assumes rate increases will take place.

When doing an analysis of the different customer classes, UFS finds no major unbalances. However, the issue of fixed cost recovery is found across customer classes.

What constitutes the fixed costs that should be covered by the monthly fixed charges? These include Meter costs, Meter Reading costs, Billing and Customer Service costs, and a portion of the Distribution System that can be attributed to the minimum service to one specific customer. If these are not appropriately charged, then one type of customer subsidizes another by not paying their fair share of the services. Typically, 30% of the distribution system costs should fall into the individual customer base charge.

Financial Consultant Chris Lund then explained the details of the structural changes that are proposed, while at the same time the PPA is reset to 0 (or as in their simulations to \$0.01, which may have separate benefits). Fixed Monthly charge would change from \$4.25 to \$11.25 then to \$18.50, while at the same time, total kWh charge (energy +PPA) would decrease from \$0.19850 per kWh to \$0.18872 and then \$0.17859, a two cent reduction over the two year-period.

The impact on different classes of customer usage was then discussed. Customer with lower usage would see their bills increase slightly, while customers using large amounts of electricity would see their bills decrease slightly. For a customer using the average 663 kWh per month, there would be no change to the bill at all. The median kWh consumption was not immediately available during the meeting.

The structural rate change is proposed to be adjusted over two years to minimize the changes to customers. A 350 kWh customer would see an 8 or 9 % total change if the change were implemented in one year. The increase in the first year would represent an increase of \$3.58 per month which is the worst case scenario. These customers’ rates are currently subsidized by customers who use more electricity. Spreading rates over two years as proposed limits the impact. On the other hand, in view of the investment decisions that rate payers are making in terms of heating with heat pumps and houses electrification, it is important that the price signals are appropriately structured, and the rates reflect

appropriately fixed and variable costs. This is why this structural change should be implemented as promptly as reasonable, and why two years is proposed.

Another issue with the implementation of this structural change is found for customers with solar panels. For these customers, the feed-in tariff, at 10 c/kWh, is less than the rate at which they buy electricity from MMLD. The justification for this lesser rate is that they have to pay the share of the fixed costs even if their consumption is diminished by their production. They now have to both pay their share of the full fixed cost while also receiving less in their feed-in rate. In essence, they are paying the fixed costs twice.

UFS states that low income users tend to be higher than average users of electricity. This varies tremendously city by city, and even within a city. It is difficult to identify a low income user and the relevant user data. Where UFS has been able to get data, it is often higher. This could be caused by the fact that places where low income people live are less well insulated, the appliances are less efficient: as a result, they tend to be higher usage customers. If a low income user uses more than 663 kWh, the change proposed will help a low income customer. This brings up a problem that many utilities have, should we have a "Low income program". The difficulty is that it is often problematic to identify these customers. The solution is often to have a program to which low income customers can apply, and that is funded by voluntary contributions ("opt-in"). UFS will follow up and provide MMLD with some utilities having such programs. MMLD has put in place such a program: "Neighbors helping neighbors".

Time of Use charge discussion

Slide 12 presented by UFS shows a "Distribution demand charge" and a Time of Use energy charge can be implemented. To simplify, the change is shown here sequentially to the structural change described earlier, but this is arbitrary. In theory, the two could overlap. In practice, to have a good confidence in the ability of MMLD's system to both have accurate measurements and bill appropriately, some testing time will be necessary.

A peak demand charge could be introduced, as shown in this example. The proposed ToU final rates are recommended to show a progression of 1/2/3 for the Off Peak / On Peak / Critical Peak. This is easier to achieve with the demand charges proposed. The result would be a potential significant decrease in rates at night from 16c to half of that rate: 8c.

What does the Distribution Demand Charge correspond to, does it affect customer behavior? This comes from the minimum system analysis. It is a way to push system charges away from the kWh charges. This is fair, because the system is designed for the highest possible load, peak demand. There is a direct relationship between the peak demand of a customer puts on the system to the overall system infrastructure. Transformer sizing will depend on the maximum demand of a customer or a group of customer.

How long does it take to introduce a ToU charge for it to be accepted by the customers. The introduction can start as soon as you are confident in the system. How long should the transition be? Usually a three to five year transition?

Utility in Michigan introduced a ToU, they are in the third year, getting into year 4. They are using demand charges for their customers. They had great success with no complaints. Can you share the name of the utility in Michigan?

A ToU study would take about 6 weeks to complete. MMLD has an engagement and budget proposal.

Discussion about the introduction of structural changes

While one could think of the rate stabilization fund as a funding mechanism, it would not be appropriate to use this fund of MMLD for this purpose. The goal of that \$900K fund is to be used in cases of emergencies. The change proposed is structural and not an emergency.


Commissioner Hull agreed that if the changes are explained, people get it. The explanation needs to be simple. The General Manager proposed that a communication strategy should include a public information session, in the fall where these changes are explained. This could be at the High School auditorium. Commissioner Yarmoff reported how customers appreciate a written information page together with their bills. They receive such communication with their Water bills, and would appreciate receiving similar information in their electric bill.

Discussion of the timing of these communication actions lead to the conclusion that the initially proposed implementation timeline might be too optimistic, and the change may need to be implemented from November 1st rather than the initially proposed October 1st billing cycle.

This is reflected in the motion presented to a vote.


Slides presented during the meeting

Slides presented by MMLD's General Manager, Joe Kowalik, Rate structure discussion



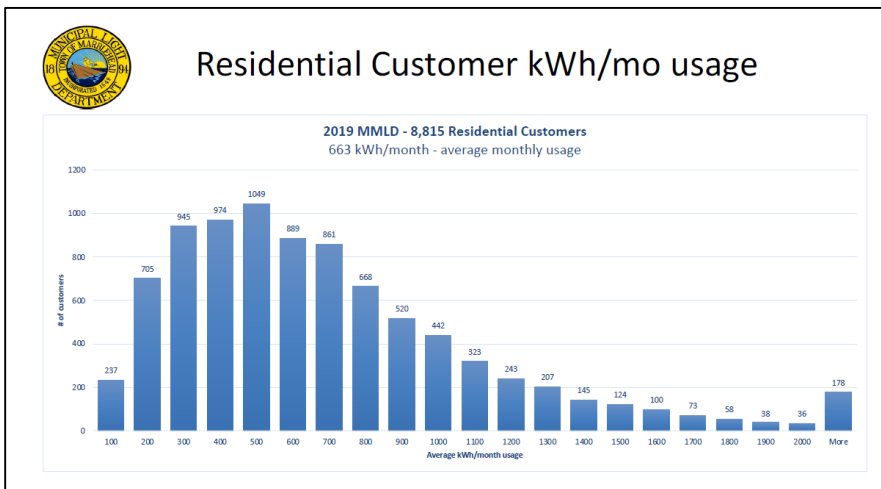
Proposed Rate Change Plan

Date	Action
July 12, 2022 – Current Condition	Energy costs continue to run higher than planned; Current net income loss for the year is \$650-700K (including \$330K Pilot)
August 1, 2022 – Step 0	Implement 1.5 cent increase to PPA; new PPA will be \$ 0.056. Forecast \$635K increase in net income
October 1, 2022 – Step 1	Intent is to be revenue neutral; begin residential base rate increase to \$18.47 on 2-year timetable; increase residential base rate to \$11.36 from \$4.25; New kwh rate calculated by reducing PPA from \$0.056 to \$0.00
Mar/April 1, 2023 – Step 2	implement demand and/or TOU rate based on MMLD determination of current MMLD system capabilities
October 1, 2023 – Step 3	Implement second year increase of residential base rate to \$18.47 from \$11.36



Rate setting statutory requirements – MGL Chapter 164, Section 58

1. The rate schedule must be fixed.
2. 3-month minimum duration between rate changes
3. New rates shall take effect on the first day of the month
4. New rates must be advertised in local newspaper 15 days prior to taking effect
5. Comply with Pricing provisions
 - No rate price can be fixed less than production costs w/o DPU approval
 - Price schedule can not generate more than 8% operating profit after expenses, depreciation and losses.
 - Prior year losses exceeding 3% can only be recovered at 3% per yr
6. File rates at DPU



Slides presented by Consulting firm Utility Financial Solutions, Rate Structure Discussion

Marblehead Municipal Light Department

Electric Financial Projection and Cost of Service Study

Dawn Lund - Vice President, Utility Financial Solutions, LLC
Chris Lund - Financial Consultant, Utility Financial Solutions, LLC

Utility Financial Solutions, LLC

- International consulting firm providing cost of service and financial plans and services to utilities across the country, Canada, Guam and the Caribbean
- Instructors for cost of service and financial planning for APPA, speakers for organizations across the country.
- Hometown Connections preferred Vendor for Financial and rate services

Presentation Objectives

Review Step One for Electric Department:

- Financial Projection & Targets
 - Debt Coverage Ratios
 - Minimum Cash Reserves
 - Target Operating Income
- Review Cost of Service Results
 - Cost to service each class of customers
 - Monthly Customer Charges
- Review Additional Steps
- Sample Rate Design

Financial Projection Current Rates

Fiscal Year	Projected Rate Adjustments	Projected Expenses	Projected Revenues	Adjusted Operating Income	Projected Cash Balances	Debt Coverage Ratio
2022	0.0%	\$ 17,946,464	\$ 18,899,185	\$ 622,721	\$ 13,558,128	5.69
2023	0.0%	17,474,195	18,271,678	467,483	13,566,053	5.45
2024	0.0%	17,316,725	17,985,586	338,861	13,649,701	5.27
2025	0.0%	17,338,451	17,848,609	180,157	13,627,369	5.02
2026	0.0%	17,706,731	18,083,080	46,349	13,523,422	4.83
Recommended Minimum Target 2022				\$ 1,320,462	\$ 7,705,453	1.45
Recommended Minimum Target 2026				\$ 1,567,721	\$ 8,148,361	1.45

Financial Projection Projected Rate Track

Fiscal Year	Projected Rate Adjustments	Projected Expenses	Projected Revenues	Adjusted Operating Income	Projected Cash Balances	Debt Coverage Ratio
2022	0.0%	\$ 17,946,464	\$ 18,899,185	\$ 622,721	\$ 13,558,128	5.69
2023	1.5%	17,474,195	18,555,166	750,971	13,849,541	6.11
2024	0.0%	17,316,725	18,270,023	623,297	14,219,043	5.94
2025	0.0%	17,338,451	18,132,968	464,516	14,483,916	5.70
2026	1.5%	17,706,731	18,658,050	621,319	14,959,222	6.19
Recommended Minimum Target 2022				\$ 1,320,462	\$ 7,705,453	1.45
Recommended Minimum Target 2026				\$ 1,567,721	\$ 8,148,361	1.45

Additional Steps

- 2022 Revenue neutral rate adjustment for the system
 - Phase in customer charges over 3-5 years
- 2022 Revised PCA Model
- Additional studies (Chris Lund): Time of Use & Demand charges
 - These studies will help us refine the rate structure over time

Cost of Service and Rate Design

Electric Cost of Service Results

Customer Class	Cost of Service	Projected Revenues	% Change
Residential (A)	\$ 13,877,371	\$ 13,398,166	3.6%
Small Commercial (B)	2,268,088	2,228,401	1.8%
Off-Peak Water-Heating (G - Grandfathered)	53,778	42,066	27.8%
Domestic Storage Heating (S - Grandfathered)	22,016	16,153	36.3%
Private Area Lighting (F)	23,885	32,734	-27.0%
Street Lighting	150,238	176,667	-15.0%
Large Commercial (C)	3,124,206	2,927,653	6.7%
Total	\$ 19,519,582	\$ 18,821,841	3.7%

Monthly Customer Charge

- ❖ Designed to recover a portion of the fixed distribution costs of the utility such as:
 - Meter Costs
 - Meter Reading Costs
 - Billing Costs
 - Customer Service
 - Service Drop
 - Portion of Distribution System
- ❖ Movement toward cost-based customer charges to help stabilize revenues
- ❖ Helps to reduce subsidy between year-round customers and seasonal customers

Monthly Charge

Movement toward COS over time

Customer Class	COS Customer Charge	Current Average Customer Charge
Residential (A)	\$ 18.47	\$ 4.25
Small Commercial (B)	32.13	5.00
Off-Peak Water-Heating (G - Grandfathered)	11.99	4.25
Domestic Storage Heating (S - Grandfathered)	17.68	4.25
Private Area Lighting (F)	1.32	-
Street Lighting	2.23	-
Large Commercial (C)	113.04	10.00

Sample Rate Designs

Sample: Residential Rate Design

Gradual movement toward COS Customer Charge

Residential (A)	cents per kWh Energy Charge + Power Cost Adjustment Change from Current		
	Current	Year 1	Year 2
Energy Charge + Power Cost Adjustment	\$ 0.19850	\$ (1.0)	\$ (2.0)
Rates	\$ 0.18872	\$ 0.17859	
Monthly Facilities Charge:			
Monthly Charge	\$ 4.25	\$ 11.25	\$ 18.50
Energy Charge:			
All Energy	\$ 0.14250	\$ 0.17872	\$ 0.16859
Hydro Credit			
Annual Credit	\$ (360,787)	\$ (360,787)	\$ (360,787)
Power Cost Adjustment:			
All Energy	\$ 0.05600	\$ 0.01000	\$ 0.01000
Revenue from Rate	\$ 15,229,022	\$ 15,229,022	\$ 15,229,022
Change from Previous		0.0%	0.0%

Change by Monthly Energy (kWh) Usage (%)

kWh Use	Year 1
350	4.9%
450	2.8%
550	1.4%
650	0.5%
750	-0.2%
850	-0.8%
950	-1.2%
1,050	-1.5%
1,150	-1.8%
1,250	-2.1%

kWh Use	Year 1
350	4.9%
450	2.8%
550	1.4%
650	0.5%
750	-0.2%
850	-0.8%
950	-1.2%
1,050	-1.5%
1,150	-1.8%
1,250	-2.1%

Sample: Residential Rate Design (Demand & TOU)


Gradual movement toward COS Customer Charge

Residential (A)	cents per kWh Energy Charge + Power Cost Adjustment Change from Current						
		(1.0)	(2.0)	(2.8)	(3.7)	(4.4)	(2.2)
Energy Charge + Power Cost Adjustment	\$ 0.19850	\$ 0.18872	\$ 0.17859	\$ 0.17090	\$ 0.16182	\$ 0.15414	\$ 0.17649
Rates	Current	Year 1	Year 2	Year 3	Year 4	Year 5	Year 5 (no Demand)
Monthly Facilities Charge:							
Monthly Charge	\$ 4.25	\$ 11.25	\$ 18.50	\$ 19.00	\$ 19.50	\$ 20.00	\$ 20.00
Energy Charge:				\$ 0.16090	\$ 0.15182	\$ 0.14414	\$ 0.16649
All Energy	\$ 0.14250	\$ 0.17872	\$ 0.16859				
TOU Energy Charge:							
kWh Off Peak (marginal power supply)				\$ 0.15000	\$ 0.11000	\$ 0.08000	\$ 0.14042
kWh On Peak (+ some CP Power Supply)				\$ 0.16000	\$ 0.16000	\$ 0.16000	\$ 0.16000
kWh Critical Peak (+ CP Power Supply)				\$ 0.18193	\$ 0.20916	\$ 0.22542	\$ 0.22542
Distribution Demand Charge							
All Demand	\$ -	\$ -	\$ -	\$ 1.25	\$ 2.75	\$ 4.00	\$ -
Hydro Credit							
Annual Credit	\$ (360,787)	\$ (360,787)	\$ (360,787)	\$ (360,787)	\$ (360,787)	\$ (360,787)	\$ (360,787)
Power Cost Adjustment:							
All Energy	\$ 0.05500	\$ 0.01000	\$ 0.01000	\$ 0.01000	\$ 0.01000	\$ 0.01000	\$ 0.01000
Revenue from Rate	\$ 15,229,022	\$ 15,229,022	\$ 15,229,022	\$ 15,229,022	\$ 15,229,022	\$ 15,229,022	\$ 15,229,022
Change from Previous		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

UFS UTILITY FINANCIAL SOLUTIONS, LLC


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General Manager Updates Slides presentation



GM Updates

- Village 13 Switchgear bid opening Thurs, 7/14: 2-3 bids expected
- Utility Tree Trimming started with Mayer Tree Services
 - Ground cover clearing on ROWs done
 - Tree trimming on ROW begun
 - Independent tree removal on ROW assessment – Aug 1 start
 - MMLD to file Notice of Intent with Conservation Commission - ConComm mtg



GM Updates

- MMWEC Behind-the-meter Battery
 - MMWEC selected the 3 finalist vendors
 - Vendor meetings at MLD sites July 26
 - Earliest target installation date 2025