



# CONCORD MUNICIPAL LIGHT PLANT

ELECTRIC | BROADBAND | ENERGY MANAGEMENT

**Date:** June 24, 2025  
**To:** Municipal Light Board: Warren Leon, John Dalton, Brian Foulds, Bianca Taylor and Chris Schaffner  
**From:** Jason Bulger, CMLP Director  
**Subject:** Agenda for virtual Light Board meeting on **Wed., July 9, 2025, at 7:30 A.M.** (link below)

- 7:30 AM 1. **Call to Order**
- 7:30 AM 2. **Election of Chair Pro Tempore** 2 Minutes Chair Vote  
 Light Board Chair Warren Leon will be absent, so the Board must elect a Chair for the meeting.
- 7:32 AM 3. **Meetings and Minutes** 3 Minutes Chair Vote
- Vote to approve the regular session minutes of June 11, 2025.

**Upcoming Meetings:**

Aug 13, 2025; Sep 10, 2025; Oct 8, 2025; **Oct 22, 2025\***; Nov 12, 2025; **Nov 24, 2025\***; Dec 10, 2025

\*Not officially scheduled, but we will need a second meeting in October and November.

- 7:35 AM 4. **Director’s Update** 5 Minutes Director Information
- 7:40 AM 5. **Cost-of-Service Study Update and Rate Disc.** 40 Minutes Asst. Dir. Info./Discussion

Background: CMLP is working on a roll-out of a default opt-out time-of-use rate for residential customers. To do this, we have hired a cost-of-service study (COSS) consultant to conduct a new COSS and then advise the Board through the development of a new rate model.

Purpose: Staff from Utility Financial Solutions (UFS) will be presenting their updates based on Board feedback and participate in more detailed conversations about rates. Board members will get a chance to ask questions and shape the final COSS.

- 8:20 AM 6. **Solar Net Metering** 45 Minutes Asst. Dir. Info./Discussion
- Background: CMLP customers currently are credited retail rates for solar production that is not exported and a flat wholesale amount for production that is exported. The Board needs to decide how it will be handled after the Time of Use rate redesign.
- Purpose: CMLP staff will review different options with Utility Financial Solutions (UFS) and understand the implications of each option.

- 9:05 AM 7. **Energy Storage Financing Methodology** 15 Minutes Director Info./Discussion
- Background: The Light Plant’s strategic plan calls for grid-scale energy storage for resilience, cost savings, and to allow for more in-town solar to be installed.
- Purpose: CMLP staff will ask the Board to weigh in on their preferred method of storage procurement, whether ownership/tolling or a shared savings model.



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9:20 AM 8. **Liaison & Public Comments** 5 Minutes Chair Information

9:25 AM 9. **Adjourn**

Distribution: Select Board (1 copy)

Kerry Lafleur

Carole Hilton

Joe Repoff

Laura Scott

Nan Okarma

Dale Hartling

Cameron McKennitt

Karlen Reed

Join Zoom Meeting

<https://us02web.zoom.us/j/83853970051?pwd=akVzemJRQk8vNTJRUnNlOS9NNDFuQT09>

Meeting ID: 838 5397 0051

Passcode: 661712

One tap mobile

+16468769923,,87335757488#,,,,\*680327# US (New York)

+16469313860,,87335757488#,,,,\*680327# US

**Link to view recordings of previous Light Board Meetings:**

<https://www.youtube.com/playlist?list=PL1TTzrWEKOOOn0RIJ2MdE2SnNZMWYeoat>

**Link to view the Director's Updates (in meeting packets):**

<https://concordma.gov/1106/Municipal-Light-Board>

**Link to view the Broadband Monthly Updates:**

<https://www.concordma.gov/3148/Monthly-Updates>

Concord Municipal Light Board Minutes  
June 11, 2025

Pursuant to a notice duly filed with the Town Clerk, a meeting of the Concord Municipal Light Board was held on Wednesday June 11, 2025, at 7:30 am, via a Zoom meeting. Present were Board Members: Warren Leon (Chair), John Dalton, Bianca Taylor, Chris Schaffner, and Brian Foulds. Also in attendance were Jason Bulger, CMLP Director; Carole Hilton, Customer Service Manager; Laura Scott, Assistant Director of Power Supply and Energy Management; Nan Okarma, Financial Manager; Donna De Gray, Customer Service Supervisor; Ann Breitenwischer, Meter Supervisor; Dale Hartling, Broadband Manager; Karin Farrow, Office Administrator; Eric Simms, Director of Sustainability; Karlen Reed, Finance Committee Liaison to the Light Board; Cameron McKennitt, Select Board liaison to the Light Board; and residents Jim Terry, Don Kupka, Dinos Gonatas, and Pamela Dritt.

Note definitions for acronyms used in these minutes:

- **CMLP:** Concord Municipal Light Plant
- **COSS:** Cost of Service Study
- **TOD:** Time of Day
- **TOU:** Time of Use

#### **CALL TO ORDER**

Mr. Leon called the meeting to order at 7:31AM. Meeting recording will be posted to the Minuteman Media YouTube page as soon as it is available.<sup>1</sup>

#### **MEETINGS & MINUTES (0:13)**

**Mr. Dalton moved to approve the May 14, 2025 meeting minutes as distributed. Mr. Foulds seconded the motion, and with all members in favor, the motion carried.**

#### **CHAIR'S UPDATE / ELECTION OF OFFICERS (0:58)**

While Mr. Leon will miss the July 9, 2025 meeting, he wanted to ensure the Board would still have a quorum. All other members confirmed they would be available.

**Mr. Foulds moved that the Board appoint Mr. Leon as Chair, Mr. Dalton as Clerk, and Ms. Taylor as liaison to the Financial Audit Advisory Committee for the current term. Mr. Schaffner seconded the motion, and with all members in favor, the motion carried.**

#### **DIRECTOR'S UPDATE (5:20)**

- The school department received a Mass CEC grant for a Level 3 bidirectional electric charger at the bus depot on Knox Trail. Brian Foulds and Eric Simms were credited for laying the groundwork and identifying this opportunity. All associated costs, including the charger (potentially over \$100,000) and installation, will be borne by Mass CEC, with no additional cost to the schools or CMLP beyond already appropriated funds. This project is intended as a demonstration to show how school buses can charge faster, be used more frequently, and potentially use their batteries for other purposes, benefiting the town and solar absorption. Site visits and studies are expected until December, with the project operational by September of next year.

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<sup>1</sup> Minuteman Media YouTube Link: <https://www.youtube.com/watch?v=NGEaj1dBH-4>

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- The Climate Action Committee's network geothermal subcommittee has applied for a feasibility grant to explore the possibility of CMLP or another utility providing heat, a framework significantly different from current operations. Stakeholders include CMLP and the Town Manager. The grant aims to study models, including financial analysis, particularly in Municipal Light Plant (MLP) communities where gas and electric distributors are separate utilities. The MCI Concord property is being considered as a potential study location.
- Auditors are scheduled to be on-site at CMLP next week. The audit was postponed from late April due to the town's 250th anniversary and the onboarding of the new financial manager, Nan. An expedited timetable has been promised.
- The School Committee unanimously approved the site license for CMLP to install solar canopies and rooftop arrays at the new middle school. The Request for Proposals is ready and will be issued once publication schedules are confirmed. The bid will cover both rooftop and canopy installations. The site license for the battery will be pursued if the canopies prove financially viable, and this process is expected to be quicker than the initial site license approval.
- Joanne Milliano has joined as a customer service specialist, fully staffing that department. Daniel Chen has joined as a network engineer, fully staffing the Broadband team.
- The Connected Homes Demand Response program launched on June 2nd, attracting over 125 applications (mostly for vehicles) for enrollment. This program provides a tool for customers to manage their energy use in relation to Time of Use (TOU) rates, especially for those who prefer not to manually program devices.
- CMLP is confident they can adapt the Time of Use (TOU) Bill Print bill print to include most desired TOU information by the January 1st deadline. A major refresh with an 18-month lead time will begin to incorporate more feedback and features.

Board members asked clarifying questions about the Connected Homes program. The Connected Homes program is replacing the previous EV miles credit. Customers with vehicles supported by Connected Homes must switch programs to continue receiving the credit. For unsupported vehicles, the existing plan remains. The \$10/month EV miles credit will transition to a quarterly \$30 Connected Homes credit. This line-item credit is eventually planned to be phased out once TOU rates are fully implemented, as customer savings will then come directly from shifting energy consumption to off-peak hour.

**BROADBAND UPDATE (23:45)**

- Equipment and services for the XGS PON solution have been ordered, with an expected 3-month lead time. Work is underway to migrate connections to new tools.
- The team is exploring a next-generation Wi-Fi solution, acknowledging that current equipment is outdated. They are evaluating subscription-based pricing models.
- Meetings are ongoing with Scott Hopkinson to update the broadband business model. This update will incorporate details about services, pricing, competition (e.g., Comcast), and future offerings like higher speeds and next-gen Wi-Fi, aiming to ensure financial sustainability.
- Ongoing issues with returning Automated Metering System meter data via Wi-Fi from customer broadband and hardware failures in purpose-built equipment are being addressed. Seven to eight replacements of faulty equipment have occurred.
- A project is planned to proactively replace several of the 36 fiber distribution hubs throughout town that are showing signs of wear from water and insect infiltration, to prevent major failures

Board members asked questions about community Wi-Fi. CMLP is exploring the possibility of providing community Wi-Fi through the new XGS PON solution, potentially allowing broadband customers to access

service from other customers' equipment at public locations like restaurants. They are also considering external Wi-Fi access points for outdoor coverage, particularly downtown, though infrastructure challenges (underground electricity, suitable light poles) need to be addressed in the long term.

A request was made to include user consumption data on customer bills to help customers understand their usage and potentially adjust their plans. While not currently planned for the bill directly, a future application integrating with cloud services will allow customers to view their usage

### **COST OF SERVICE STUDY PRESENTATION AND RATE DISCUSSION (36:04)**

The meeting transitioned to a presentation by Mark Beauchamp, President and Founder of Utility Financial Solutions (UFS), whose firm conducted CMLP's cost of service study and rate design.

UFS conducted a long-term financial projection for CMLP. CMLP is financially strong and is a low-debt utility with a debt coverage ratio of 16, significantly exceeding the target of 1.4. Cash reserves are projected to be well above the identified minimum of \$12 million, reaching nearly \$30 million by 2030. This cash is intended to fund future infrastructure replacement, accounting for inflationary increases in asset replacement costs.

The Optimal Operating Income (representing inflationary increases in asset replacement costs) serves as an upper boundary to ensure customers are not overcharged; CMLP is projected to remain below this. Based on these projections, no rate increases are anticipated or needed over the next five years.

CMLP was noted as a financially very healthy utility with a newer infrastructure (45% depreciated, compared to a 50% US average) and is virtually debt-free.

### **Cost of Service Study Results**

The study analyzes the cost to provide service to each customer class compared to projected revenues. Most major rate classes are relatively close to 100% cost of service-based rates, falling within a typical bandwidth. Residential class theoretically shows a need for a 7% rate increase, while medium and large commercial classes show slight decreases. Lighting is a significant exception, showing a substantial subsidy: revenue is approximately \$60,000, but the cost exceeds \$400,000. This disproportion is primarily due to municipal lighting, with private area lighting being closer to cost of service.

PILOT (Payment In Lieu Of Taxes) and indirect cost transfers to the town totaled around \$1.1 million last year. These transfer payments are considered reasonable compared to other municipal utilities.

### **Fixed Monthly Customer Charge**

The fixed charge covers non-consumption-based costs such as metering, billing, service drops, and minimum system infrastructure. The residential customer charge is currently \$20, but the study suggests it should be closer to \$26.68. Adjusting the customer charge upwards would be revenue-neutral, allowing for a corresponding reduction in the variable (distribution) component of the energy rate. Higher fixed costs for commercial customers (small general, medium, large) are attributed to more complex metering (current/potential transformers) and the need for three-phase service.

### **Net Metering Charge**

CMLP currently uses true net metering. Solar customers also pay an additional fixed monthly charge (varying by system size, from \$3-4 to hundreds of dollars) which was partly implemented to offset system subsidies. Further

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discussion on this was deferred.

**Residential Time of Use (TOU) Rate Design**

The proposed design includes two seasonal time periods (Standard: Jan, Feb, May-Sep, Dec; Shoulder: Mar, Apr, Oct, Nov) and three daily time periods (Monday-Friday, excluding federal holidays). On-Peak: 12:00 PM - 3:00 PM and 7:00 PM - 8:00 PM. Critical Peak: 3:00 PM - 7:00 PM. Off-Peak: All other hours and weekends.

Two implementation options were presented for board consideration: 1. Phased-in approach over three years that gradually introduces the TOU rates to minimize initial bill impacts, allowing customers to adapt. 2. Immediate implementation that would involve significantly higher critical peak rates (e.g., 44 cents/kWh) offset by lower off-peak rates (e.g., 16 cents/kWh).

Impact analysis on 500 residential customers (assuming static consumption):

Phased approach: Showed maximum bill increases of around 4%, with decreases ranging from 6% to 11%.

Immediate approach: Showed maximum increases of 10-11%, with some customers seeing double-digit decreases. It was noted that actual bill impacts would likely be lower if customers adjust their energy consumption patterns in response to the price signals.

**Board Discussion and Direction**

Board members expressed surprise at the modest bill impacts, even without accounting for behavioral changes, suggesting this allows for a bolder approach.

**Critical Peak Window:** Discussion ensued regarding the 4-hour critical peak. Some suggested shortening it to 3 hours to simplify customer response, acknowledging this could lead to an even higher critical peak rate (e.g., 50 cents/kWh) but potentially greater load shifting. Concerns about chasing the peak were raised.

**Seasonal and Time Period Complexity:** There was significant discussion about the potential for customer confusion due to multiple seasonal and daily time periods. Several members advocated for simplifying the rate structure, potentially reducing to just two periods (on-peak and off-peak) rather than three, especially given the minimal price difference between on-peak and mid-peak.

**Phased vs. Immediate TOU Implementation:** A revenue-neutral transition for the TOU implementation was broadly supported as a good philosophy to avoid confusion. Some favored a single transition year (e.g., Phase 1 next year, then full Phase 3) rather than a three-step process. A beta test/opt-in period for the final rate was also suggested to work out any kinks.

**Fixed Charges:** There was a desire to increase fixed monthly customer charges quickly to align with the assessed costs (e.g., moving residential to \$26.68), thereby shifting more collection from variable to fixed.

**Super Off-Peak:** The possibility of a super off-peak rate (e.g., 2 AM - 6 AM at a penny less) for EV charging was discussed to incentivize load shifting during low-demand periods, but concerns about adding complexity to the rate structure were noted.

**Billing Information:** A request was made to include user consumption data on customer bills to help them understand their usage and potentially adjust their plans. While direct bill inclusion is not currently planned, a future application integrated with cloud services will allow customers to view usage.

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**Mandatory vs. Opt-in:** The board has previously indicated a preference for an opt-out approach for TOU rates (where customers are defaulted to TOU unless they choose to opt out). The benefit of mandatory participation for large EV loads was mentioned.

**Objectives of TOU:** It was clarified that the primary drivers for implementing TOU are financial benefits to CMLP (reducing costs when customers shift consumption, which can lead to lower overall rates) as well as climate benefits (reducing peak demand to avoid reliance on polluting peaker plants). TOU is also intended to avoid disincentivizing solar, battery, and heat pump installations.

**Next Steps**

- Mark Beauchamp will provide additional data, including a full cohort analysis of bill impacts and impacts of increasing the fixed charge to \$26.68, for circulation before the next meeting.
- The discussion on fixed charges and their components will be revisited at the next meeting to provide clarity.
- The board will continue its discussion to provide direction on the rate design at the next meeting

**LIASION & PUBLIC COMMENTS (1:54:18)**

- Karlen Reed recommended including in charts the demographics of residential users. Her extremely low monthly usage will look different than other residents' bills. Second, she asked if the Light Plant needed a rate increase at this time based on its financials.
- Don Kupka wanted to see this kept very simple, and wants to understand the objective if complexity is added.
- Dinos Gonatas asked questions about the increase in fixed charges as it relates to costs for transformers. Mr. Leon asked Mark Beauchamp to go into that detail at the next meeting. He echoed the calls for simplicity, and relating to customers' ability to opt in or be required to participate, he thought it depended on criteria like EV usage.
- Pamela Dritt suggested not prioritizing simplicity over clarity. She asked for additional information so she and others can take action. She also prefers an opt-out rate, which the Board reaffirmed was the plan.

**ADJOURN (2:04:00)**

**Mr. Schaffner moved to adjourn, Mr. Foulds provided the second, and with a unanimous vote, the meeting was adjourned at 9:36 AM.**

Memo to: Concord Municipal Light Board  
From: Warren Leon  
Date: June 23, 2025  
Subject: Thoughts on Time-of-Use Rates

I am going to be on vacation during the July Light Board meeting, so I will not be able to join you for the discussion of the results of the cost-of-service study and of time-of-use rates. I therefore want to give you my thoughts on those topics for your consideration. I will be comfortable with whatever you decide.

From listening to and reading the cost-of-service study results at the last Board meeting, I feel very good about the quality of the work done by Utility Financial Solutions. For that reason, I think we should try to follow their recommendations unless there are clear compelling reasons not to do so.

Here are a few more specific comments coming out of the June Board discussion:

1. I believe that we should adopt a TOU rate schedule that makes it easy for ratepayers to focus on choices that significantly reduce their bills and save CMLP significant money. We should not complicate their decisions by including minor rate changes over the course of a day. For that reason, I strongly oppose including the “Standard Off-Peak” and “Standard On-Peak” rates presented last time where the difference was less than a penny a kilowatt-hour. Any variations in rates should be at least several cents.
2. I am agnostic as to whether the highest cost peak period for the standard rates should be three hours or four hours. I suspect that ratepayers could adapt to either of those.
3. I like the idea of having one transition year and then going to the full, final time-of-use rate schedule.
4. The cost-of-service study suggested that the fixed monthly customer charge should theoretically be \$26.68. Although I do not object to moving to that over time, I caution against doing it all at once, because it will be difficult to know all the unintended consequences in advance. I worry that low electric users in small homes and apartments may have more difficulty modifying the timing of their electricity use than will large users with many appliances, EVs, and other variable loads. The low electricity users may therefore have difficulty benefiting from TOU rates. An increase in the monthly customer charge would negatively impact that same group of ratepayers. I recommend holding off on changing the monthly customer charge until and unless we know specifically who might be negatively impacted and by how much.

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**From:** Kristen Hagerty  
**Sent:** Monday, June 30, 2025 2:06 PM  
**To:** Jason Bulger; Laura Scott  
**Subject:** CMLP public comment

Hi Jason and Laura,

I wasn't sure what email address to send in public comment for the Light Plant Board, so I appreciate if you would forward this, please. I know you are discussing new time of use rates. You have probably already seen the relatively recent ACEEE report on electricity rates that encourage heat pump adoption, But if not, here is the link to share with the Board:

<https://www.aceee.org/research-report/b2502>

I look forward to following the discussions.

Thank you,  
Kristen Hagerty  
Revolutionary Rd

# Concord Municipal Light Plant Updates

July 9, 2025

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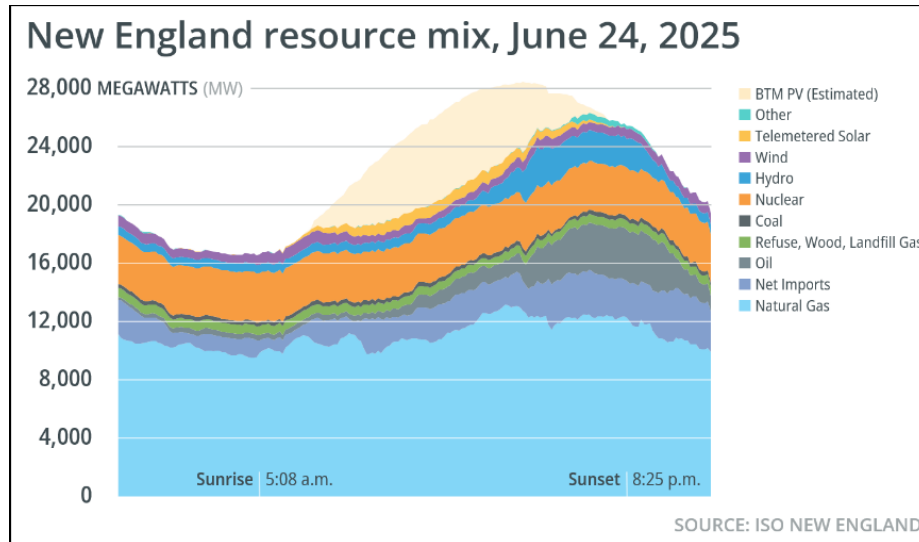
## Organization and Industry

- **Governor Healey’s Energy Bill Progresses in Massachusetts:** Governor Maura Healey’s “An Act relative to energy affordability, independence and innovation” continues to be a central focus in the Massachusetts legislative landscape. While specific legislative actions within the last month are ongoing, the bill, filed on May 13, 2025, aims to deliver significant benefits, including an estimated \$10 billion in ratepayer savings over the next decade. Key provisions of the bill, still under consideration, include:
  - Direct Clean Energy Procurement: Empowering the Massachusetts Department of Energy Resources (DOER) to directly procure clean energy, potentially reducing costs by eliminating utility contracting fees.
  - SMART Program Adjustments: Modifying net metering for larger solar systems and phasing out the Alternative Portfolio Standard (APS) to streamline clean energy incentives. As noted in other articles, DOER has already moved on SMART 3.0 emergency regulations in June.
  - Consumer Protection: Strengthening consumer safeguards in the residential competitive electricity supply market.
  - Utility Accountability: Prohibiting ratepayer funds for utility lobbying or advertising and increasing DPU’s audit authority.
  - The bill’s progress underscores the state’s determination to achieve its ambitious climate goals while ensuring energy affordability and independence for its residents and businesses.

- **FERC Approves Key ISO-New England Economic Study Improvements:** The Federal Energy Regulatory Commission (FERC) has accepted ISO-New England’s recently proposed enhancements to its economic study process. These improvements are designed to proactively identify and mitigate future transmission congestion costs by facilitating targeted infrastructure upgrades.
  - The accepted changes introduce a more streamlined approach, to be conducted every two to three years, with a clear metric for avoided congestion costs that would trigger a one-phase Request for Proposal (RFP) process. This aims to accelerate the progression of transmission solutions from proposal to construction. This development follows the “Economic Planning for the Clean Energy Transition (EPCET)” pilot study, which identified potential grid challenges as New England transitions to a decarbonized system supporting increased electric vehicles and heat pumps by 2050. The effective date for these new economic study changes is June 23, 2025.
  - This FERC approval is a significant step towards a more efficient and cost-effective transmission planning process in New England, crucial for integrating new clean energy resources and maintaining grid reliability.
  
- **Massachusetts DOER Files Emergency Regulations for SMART 3.0 Program:** The Massachusetts Department of Energy Resources (DOER) has taken a significant step in the state’s solar energy landscape by filing emergency regulations for the Solar Massachusetts Renewable Target (SMART) 3.0 Program (225 CMR 28.00). Minor changes to the existing regulation (225 CMR 20.00) were also filed to manage the program transition and establish an end date for eligibility under the current SMART program.
  - This move by DOER aims to jumpstart solar growth, reduce charges on electricity bills, and lower wholesale electricity costs for Massachusetts residents and businesses. The SMART Program is a declining block incentive program, designed to support solar development by providing tariff-based incentives paid directly by utility companies to system owners. These emergency regulations signal a renewed focus on expanding solar capacity and ensuring the program adapts to evolving market conditions and state clean energy goals.
  
- **MassCEC Explores “Equitable Distributed Energy Future” in Latest Event Series:** The Massachusetts Clean Energy Center (MassCEC), in partnership with the Alliance for Climate Transition (ACT), held the second event in its 2025 “Future Grid” event series, focusing on “An Equitable Distributed Energy Future” at UMass Lowell. This event explored how the electric grid can effectively host a large number of distributed energy resources (DERs) of all sizes while ensuring an equitable energy transition.
  - Discussions at the event centered on emerging DER ownership models and how utilities and the grid can create a foundation for community empowerment, affordability, and resiliency. The series brings together public and private sector stakeholders, including utility regulators, advocacy groups, utilities (both investor-

owned and municipal), technology providers, community-based organizations, and academic institutions, to collaborate on critical electric grid topics. This initiative underscores Massachusetts' commitment to a future grid that is not only decarbonized but also equitable and accessible to all communities.

- **Federal Legislation Poised to Reshape Clean Energy Incentives:** A sweeping federal budget bill, passed by Congress and signed by the President, is set to significantly alter the landscape of clean energy incentives across the nation, including impacts on Massachusetts. This legislation, while aimed at broader spending cuts, includes provisions that will notably curb billions of dollars in clean energy tax credits established by previous administrations. Key impacts of the bill for the energy sector include:
  - Residential Solar and EV Credits Cut: The bill eliminates the 30% federal tax credit for rooftop residential solar installations, which the Inflation Reduction Act had extended into the next decade. Similarly, tax credits for the purchase of new (\$7,500) and used (\$4,000) electric vehicles are set to disappear. These changes are expected to make these technologies significantly more expensive for homeowners and consumers.
  - Accelerated Timelines for Large-Scale Projects: For utility-scale wind and solar projects, the bill imposes much stricter timelines to qualify for tax credits. Projects must begin construction within one year of the law's enactment to receive a full tax credit without an operational deadline. Projects starting later must be operational by the end of 2027, a timeline many in the industry deem nearly impossible to meet, putting numerous planned projects at risk.
  - Support for Traditional Fuels: Conversely, the legislation explicitly supports traditional fossil fuels, including oil, natural gas, and coal, as well as nuclear power, with proponents arguing this will enhance grid reliability.
  
- **New England Grid Remains Reliable as June Heat Wave Brings Highest Peak in Over a Decade:** ISO New England system operators used well-established procedures to balance supply and demand on the regional power system during a capacity deficiency on Tuesday, June 24, 2025.
  - Consumer demand for grid electricity unofficially peaked that evening at 26,024 megawatts (MW), the highest level seen in the region since 2013. That was roughly in line with the ISO's pre-season forecast for above-average summer weather. It was still well below the region's all-time peak of 28,130 MW, set in August 2006.
  - The peak hour was between 6 and 7 p.m., when the average temperature in New England was 95.6° Fahrenheit (F) and the dew point, a measure of humidity, was 68.0°F. The heat and humidity drove air conditioner use, creating increased demand for electricity.



## Energy Management

- CMLP has received over 1,000 requests for heating/cooling coaching services since we launched the service in February, 2021. 84% of requesters have met with a coach at least once, and 46% of customers who've met with a coach have installed a heat pump.
- Energy Management staff compiled a list of suggestions for improving the utility of home energy assessment reports. Energy New England has implemented many of the changes already, and is making progress on the rest.
- To aid our coaches as they advise gas-heating customers exploring heat pump heating, we've gathered information from Mass Save staff to clarify Mass Save's rebate policy for heat pumps installed in new additions to homes in Concord.
- Energy Management staff is tracking the amount of time it takes to process each type of rebate that we offer, in anticipation of an exercise that we plan to carry out to evaluate the cost effectiveness of each rebate program in reducing carbon emissions. Energy Efficiency & Electrification Specialist Pamela Cady has set up formulas in each of our rebate tracking spreadsheets that will automatically calculate the cost in staff time incurred as rebates are processed.
- Pamela has completed a number of other tasks for the Energy Management Division this month:
  - Created Excel pivot tables that will automatically break out heat pump rebate statistics by prior heating fuel, for use in reporting to the state and to the community.

- Compiled the first quarterly update on solar arrays in Concord for ISO-NE's PP12 Appendix A Data Request.
- Revised addresses in all rebate tracking spreadsheets to comply with standard naming conventions. This revision will facilitate data analysis and reporting.

## Battery Storage and Solar Project Updates

- The middle school solar Invitation for Bids went live late June. There is an on-site visit by interested bidders on July 9, 2025. Bids are due no later than 1pm on July 23, 2025. An award letter should be ready within a few days of that, provided we receive qualified bids.
- Staff circulated information about the deferred battery presentation from the June meeting to hopefully have a productive conversation with the Board at the July meeting.
- The School department has received a Mass CEC grant for a V2X Level 3 charger. Stakeholders held a site meeting on July 2.

## Finance Updates

- Audit work continues

## Advanced Metering Project Updates

- Metering is 99.99% complete with the AMI project with one opt-out customer left to install.
- Yukon on-site user training and system tuning was completed in early June.
- Metering continues to add demand readings in the billing system for residential and G1 accounts now that this information is available with the new AMI meters. This task will be ongoing for several months. Having these demand readings will help Metering and other divisions with additional data for troubleshooting and research.

## Engineering and Operations

- No data submitted.

## Power Supply

- Attended the Groton battery storage ribbon cutting event. Their battery is located next to an elementary school and is dispatched by LightShift. Discussed possible contract options for Concord with LightShift. Asked the Elementary School principal if Groton received any negative feedback from parents/residents given the battery's proximity to the school. He

said there had been some discussion about safety and the building committee level, but no direct input from parents.

- Met with Mothers Out Front to discuss networked geothermal.
- Worked on TOU rate : UFS rate design, NISC bill print, online bill calculator tool
- Preliminary summer 2025 peak Tuesday, June 24th 6:00-7:00 p.m.
- Reviewed open position for balance 2025 and 2026 with ENE. Some small purchases possible.

## Customer Service / Metering

- Customer Service continues to migrate to iVUE Connect as our main database for the CSS team to manage customer information, research history, and apply payments. Billing will continue to be processed through iVUE Service. There are still a few training sessions to complete for this total transition which we expect will be completed late August early September. In addition to the remaining training sessions, we have weekly project status meetings for the duration of the project as well as several administrative sessions to go through the Connect configuration and security permissions.
- The volume of delinquent customers is increasing which is common this time of year with summer vacations during June and July. Customers forget to pay or set up prepayments for electric and water. We continue to use the door hangers which have been an effective tool, and we reach out to customers via phone and email as well the day before disconnections. We will not disconnect a customer during days with excessive high temperatures.



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## June 2025 – Broadband Updates

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Concord Broadband is pleased to share the following updates and information from the past month. Please do not hesitate to contact us at [broadband@concordma.gov](mailto:broadband@concordma.gov) should you have any questions, concerns, or feedback.

### Operations

Fiber installations have picked up with the warmer weather. Every month, staff members are pulling and splicing an average of 13 new customers, which adds to the base of locations we can serve. The team continues to try to make small tweaks to improve the speed with which we can install new customers.

The network team continues to prepare for the installation of the new XGS-PON equipment. They are working on planning and power requirements to ensure we can keep both old and new equipment powered up simultaneously while we do the installations.

Biannual FCC filings are being worked on to be submitted hopefully by the end of August.

### Top 5 Questions About Fiber Internet—Answered!

#### 1. What makes fiber internet different from cable or DSL?

Fiber uses light to transmit data through glass strands, allowing for much higher speeds, greater reliability, and better performance—especially during peak usage times. It is the gold standard for a technology designed to move data.

#### 2. How fast is it, really?

With fiber, you can get symmetrical speeds—meaning your upload speed is just as fast as your download speed. That’s a game-changer for video calls, cloud storage, gaming, and more. We currently offer speeds up to 1GB/s, and soon that will increase to 5GB/s (and even faster in some areas).

#### 3. Is it more expensive than traditional internet?

Not necessarily. Many municipal fiber providers offer competitive pricing, often with no hidden fees, and more value for the speed you’re getting.

### Upcoming Maintenance

No maintenance is currently planned.

Learn more on our maintenance page here:

<https://concordma.gov/3144/Broadband-Maintenance>

#### 4. Do I need special equipment?

You'll need a fiber-compatible router, which may be provided by your service or purchased separately. Our technicians handle the rest, including installing the optical network terminal (ONT) that connects fiber to your home.

#### 5. Will it be available at my address?

Availability depends on your neighborhood. Our backbone travels all over Concord, but your specific address may or may not be ready for service immediately. [Check your address](#) with us or join the waitlist to express interest!

Fiber internet isn't just faster; it's built for the future. If you're ready for a better internet experience, municipal fiber with Concord Broadband is the upgrade you've been waiting for.

## Local and Accountable: Why Community-Owned Broadband Makes a Difference

When it comes to internet service, many people are used to dealing with large national providers—companies where customer service can feel distant, policies are set in corporate boardrooms, and decisions aren't always made with the community in mind. That's where municipal, community-owned broadband stands apart.

A locally operated fiber broadband utility is designed to serve the public interest, not shareholder profits. Every decision—from pricing to expansion to customer service—is made with the local community as the priority. That often means more transparent governance, better responsiveness, and an overall greater sense of accountability. If you have a concern, you can speak directly to someone who lives and works in your town—not a call center halfway across the country.

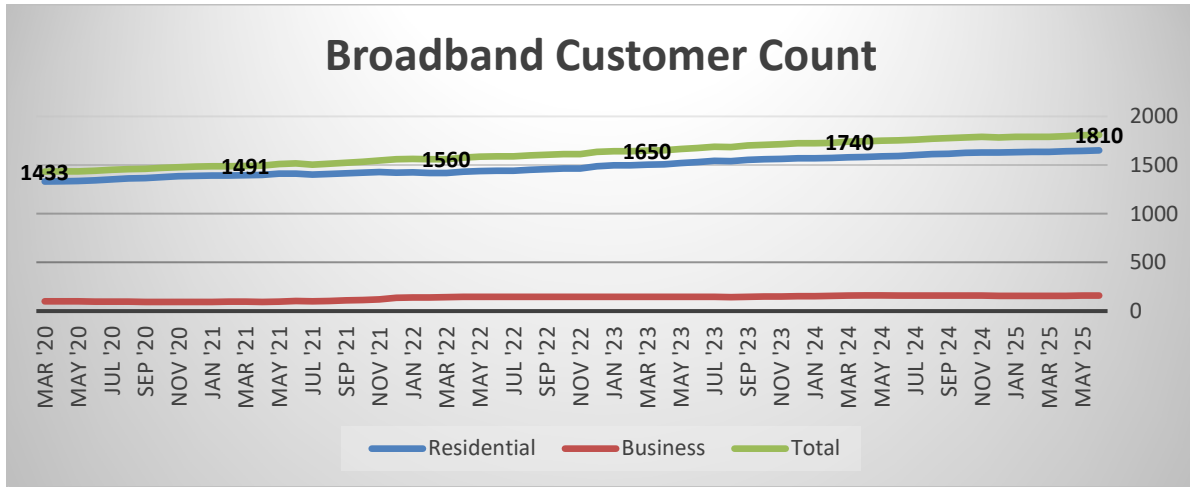
Community-owned broadband also supports the local economy. Revenues stay in town rather than being sent to out-of-state investors. Jobs, support services, and even infrastructure investments tend to benefit local contractors and businesses. It's a model that creates a positive feedback loop: the more people support it, the stronger and more responsive the service becomes.

Municipal broadband providers also tend to be more future-focused. Because they're not beholden to short-term profits, they can invest in infrastructure that meets long-term needs—like 100% fiber networks capable of supporting the data demands of tomorrow's smart homes, remote work, and education needs.

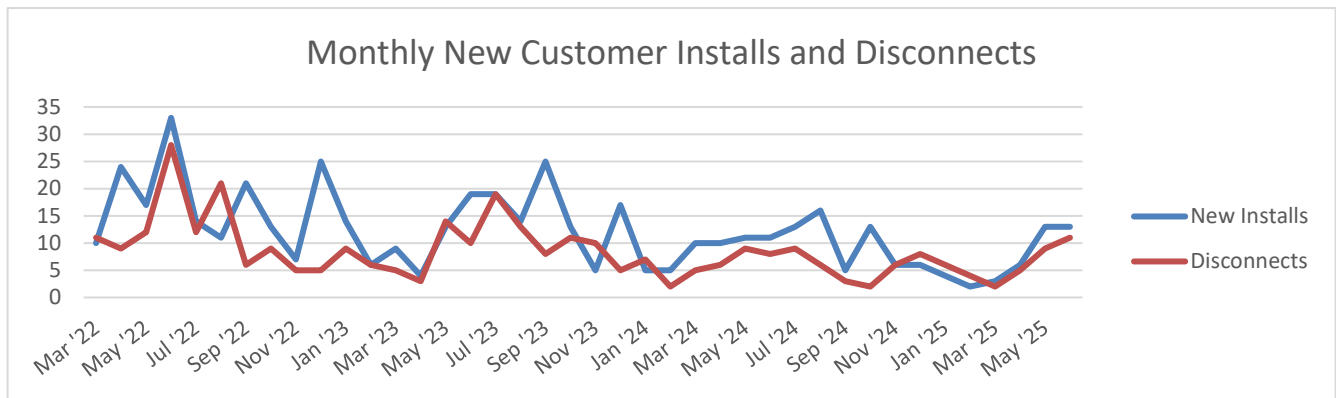
In short, local broadband is about more than just faster internet—it's about community control, economic strength, and public service. When you choose a municipal provider, you're not just buying a service—you're supporting a system built to serve your neighbors, your town, and you.

Visit <https://concordma.gov/broadband> to learn more or call us at (978) 318-3101.

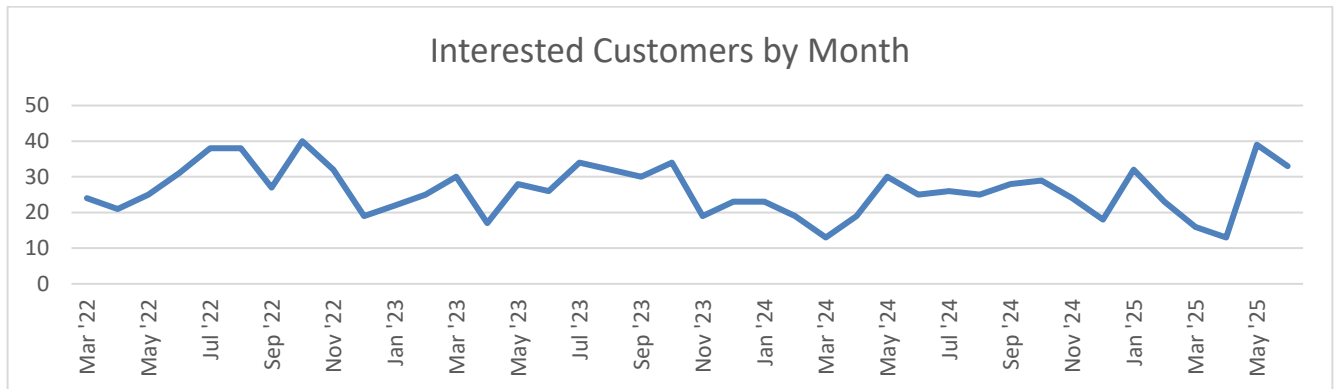
## Monthly Metrics and Business Data



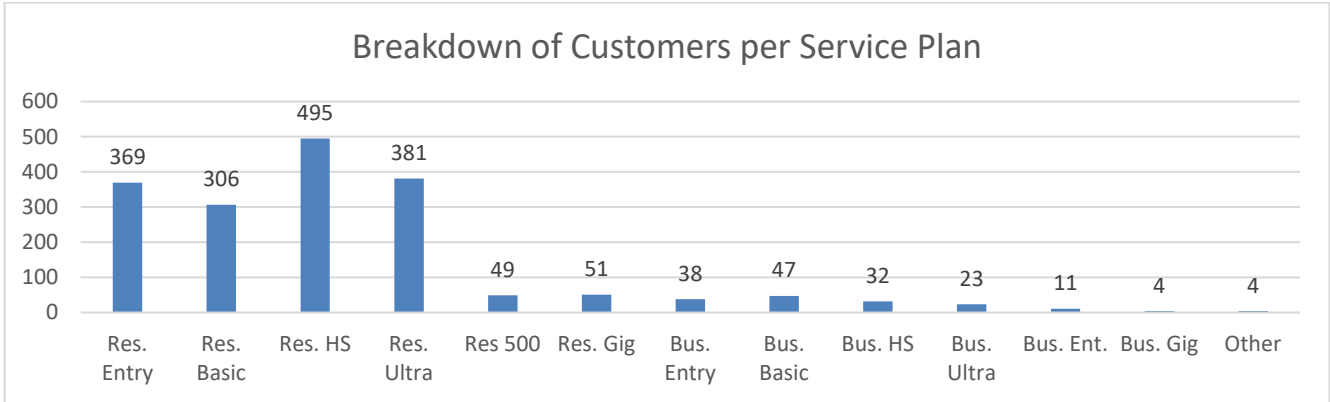
(Customer count: March 2020 – Present)



(The number of new installations and disconnects completed each month.)

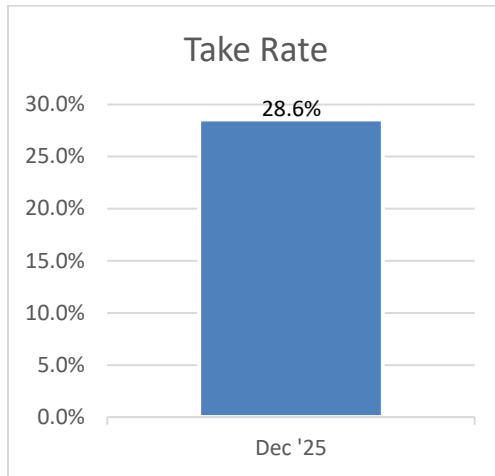
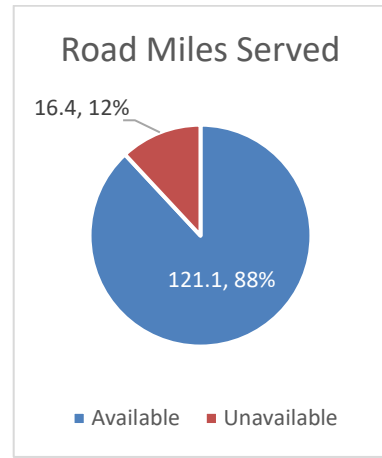
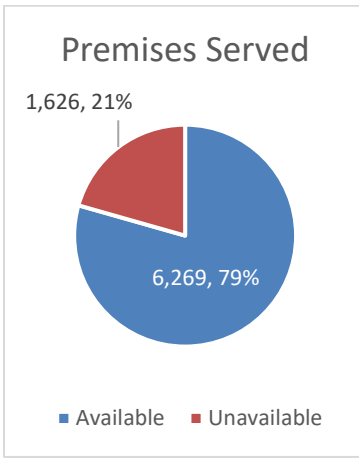
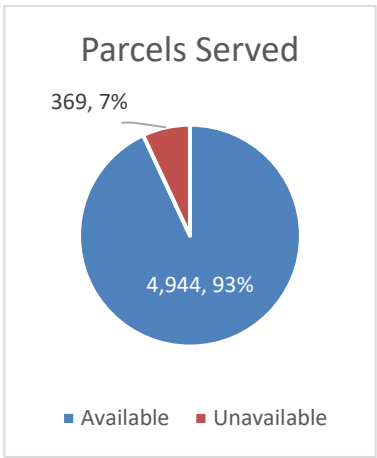


(This is the number of individuals who submit the Broadband interest form, whether they are in the current service area or not.)



(This is the number of each customer on our different service plans as of 6/30/2025.)

### Other Metrics



(As of 2/15/2025)

## Appendix

### Fiber Broadband Completion Task Force's Report Goals

Goal	Type	Priority	Responsible Party	Additional Info.
<b>Policies (p.39)</b>				
<ul style="list-style-type: none"> <li>Universal Access</li> </ul>	Policy	Highest	Select Board/Town Meeting	
<ul style="list-style-type: none"> <li>Expansion outside current territory</li> </ul>	Policy	Low	Select Board/Town Meeting	Conversations happening
<ul style="list-style-type: none"> <li>Support Economic Vitality, Sustainability, Equity &amp; Inclusion</li> </ul>	Policy	High	Select Board/Light Board/TM Economic Development	Rate subsidy planned
<ul style="list-style-type: none"> <li>Affordable Housing</li> </ul>	Policy	Medium	Select Board/Housing Groups	Rate subsidy planned; working on Concord Housing Authority properties
<ul style="list-style-type: none"> <li>Public Safety</li> </ul>	Policy	Medium	Select Board/Town Manager	
<ul style="list-style-type: none"> <li>Education</li> </ul>	Policy	Medium	Select Board/School Dept.	
<ul style="list-style-type: none"> <li>Government Access (PEG)</li> </ul>	Policy	Medium	Select Board/PAAC	
<b>Recommended metrics for tracking (p.41)</b>				
<ul style="list-style-type: none"> <li>Parcels served</li> </ul>	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
<ul style="list-style-type: none"> <li>Premises served</li> </ul>	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
<ul style="list-style-type: none"> <li>Road miles served</li> </ul>	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
<ul style="list-style-type: none"> <li>Subscribers</li> </ul>	Metric	High	Town Staff/Light Board	Complete; will report monthly
<ul style="list-style-type: none"> <li>Take rate</li> </ul>	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
<ul style="list-style-type: none"> <li>Churn</li> </ul>	Metric	High	Town Staff/Light Board	Complete; included in monthly report
<ul style="list-style-type: none"> <li>Installations</li> </ul>	Metric	Highest	Town Staff/Light Board	Complete; will report monthly
<b>Governance (p.39)</b>				
<ul style="list-style-type: none"> <li>Track progress against completion</li> </ul>	Metric	Highest	Light Board/Town Staff	Working on this
<ul style="list-style-type: none"> <li>Rate of return policy</li> </ul>	Policy	High	Light Board/Town Staff	Working on this
<ul style="list-style-type: none"> <li>Financial goals with regular reporting</li> </ul>	Policy	High	Light Board/FinCom	Working on this
<ul style="list-style-type: none"> <li>Retained earnings and reserve policy</li> </ul>	Policy	High	Light Board/FinCom	Working on this

Goal	Type	Priority	Responsible Party	Additional Info.
<b>Strategic Planning Goals (p.43)</b>				
• Marketing and growth	Metric	High	Light Board/Town Staff	Working on this
• Business return	Policy	High	Light Board/Town Staff	Working on this
<b>Budgeting Process for Fiber Expansion (p.41)</b>				
• Expand to fill existing opportunities	Planning	High	Light Board/Town Staff	
• External funding sources	Research	Medium	Light Board/Town Staff	Working on this
• ARPA Relief Funds Allocation, incl. Lost Revenue	Finance	Highest	Select Board/Town Manager	Complete
• Review/Confirm Internal Loan Findings	Finance	Highest	Financial Audit Comm/Staff	Complete
• Review and Rescind PILOF to MMN	Finance	High	Select Board/Town Manager	Complete
<b>Capital Planning Process (p.42)</b>				
• Review/Revise Debt financing schedule	Policy	Highest	Light Board/Town Staff	In progress; due to positive financial situation, anticipating being able to repay faster.
• Quantifying cost of expansion	Planning	Medium	Town Staff	Working on this
• How to fund expansion	Planning	Medium	Light Board/Town Staff	Working on this
• Revise/refine methods for computing ROI	Planning	Medium	Light Board/Town Staff	Working on this
<b>Construction and Logistics (p.42)</b>				
• Vibratory plow – direct buried fiber cables	Operations	Medium	Town Staff	Working on this
• Revise/Refine Communication conduit construction standards and guidance	Policy	Medium	Town Staff	Working on this
• Integrate Fiber construction with the Roads Program – focus on Streets without fiber that already have underground electric	Planning	High	Town Staff	Working on this

# Concord Municipal Light Plant

Electric Cost of Service Study/Financial Projection

Mark Beauchamp

President, Utility Financial Solutions, LLC

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616 403 5450

# Objectives

- Financial Projection
  - Significant Assumptions
  - Summary Financial Results
  - Debt Coverage Ratio
  - Minimum Cash Levels
  - Target Operating Income
- Review Cost of Service Results
  - Class Cost Results
  - Customer Charges
- Rate Adjustment Plan
- Sample Rate Designs

# Significant Assumptions

Fiscal Year	Inflation	Growth	Purchase Power Change	Investment Income	Utility Funded Capital
2026	3.0%	2.7%	-0.6%	3.0%	7,972,469
2027	3.0%	2.0%	0.7%	0.5%	2,176,673
2028	3.0%	2.0%	-0.9%	0.5%	11,920,806
2029	3.0%	1.1%	0.7%	0.5%	2,005,646
2030	3.0%	0.9%	1.7%	0.5%	2,056,228

# Summary Financial Results (without rate increase)

Fiscal Year	Projected Rate Adjustments	Debt Coverage Ratio	Adjusted Operating Income	Optimal Operating Income	Projected Cash Balances	Recommended Minimum Cash
2026	0.0%	16.59	\$ 4,918,709	\$ 5,401,852	\$ 14,255,149	\$ 12,310,960
2027	0.0%	26.54	\$ 5,010,213	5,543,667	\$ 19,836,880	12,293,205
2028	0.0%	N/A	\$ 5,151,255	6,213,272	\$ 16,449,438	12,195,360
2029	0.0%	N/A	\$ 4,869,407	6,326,562	\$ 22,950,179	12,336,630
2030	0.0%	N/A	\$ 4,626,492	6,442,709	\$ 29,268,875	12,519,953

# Projected Rate Track

Fiscal Year	Projected Rate Adjustments	Debt Coverage Ratio	Adjusted Operating Income	Optimal Operating Income	Projected Cash Balances	Recommended Minimum Cash
2026	0.0%	16.59	\$ 4,918,709	\$ 5,401,852	\$ 14,255,149	\$ 12,310,960
2027	0.0%	26.54	\$ 5,010,213	5,543,667	\$ 19,836,880	12,293,205
2028	0.0%	N/A	\$ 5,151,255	6,213,272	\$ 16,449,438	12,195,360
2029	0.0%	N/A	\$ 4,869,407	6,326,562	\$ 22,950,179	12,336,630
2030	0.0%	N/A	\$ 4,626,492	6,442,709	\$ 29,268,875	12,519,953

# COS Summary Results

Description	Cost of Service	Projected Revenues	Effective % Change
Residential	\$ 19,033,154	\$ 17,805,697	7%
Small Commercial	\$ 2,910,343	\$ 2,661,702	9%
Medium Commercial	\$ 5,642,884	\$ 6,100,161	-7%
Large Commercial	\$ 10,518,976	\$ 11,421,355	-8%
Lighting	\$ 427,412	\$ 60,711	604%
	\$ 38,532,770	\$ 38,049,626	1.3%

# Monthly Customer Charges

Customer Class	COS Customer Charge	Current Average Customer Charge
Residential (R-1)	\$ 26.68	\$ 20.00
Small General (G-1)	37.48	20.00
Medium General (G-2)	195.47	59.00
Large General (G-3)	891.54	477.00

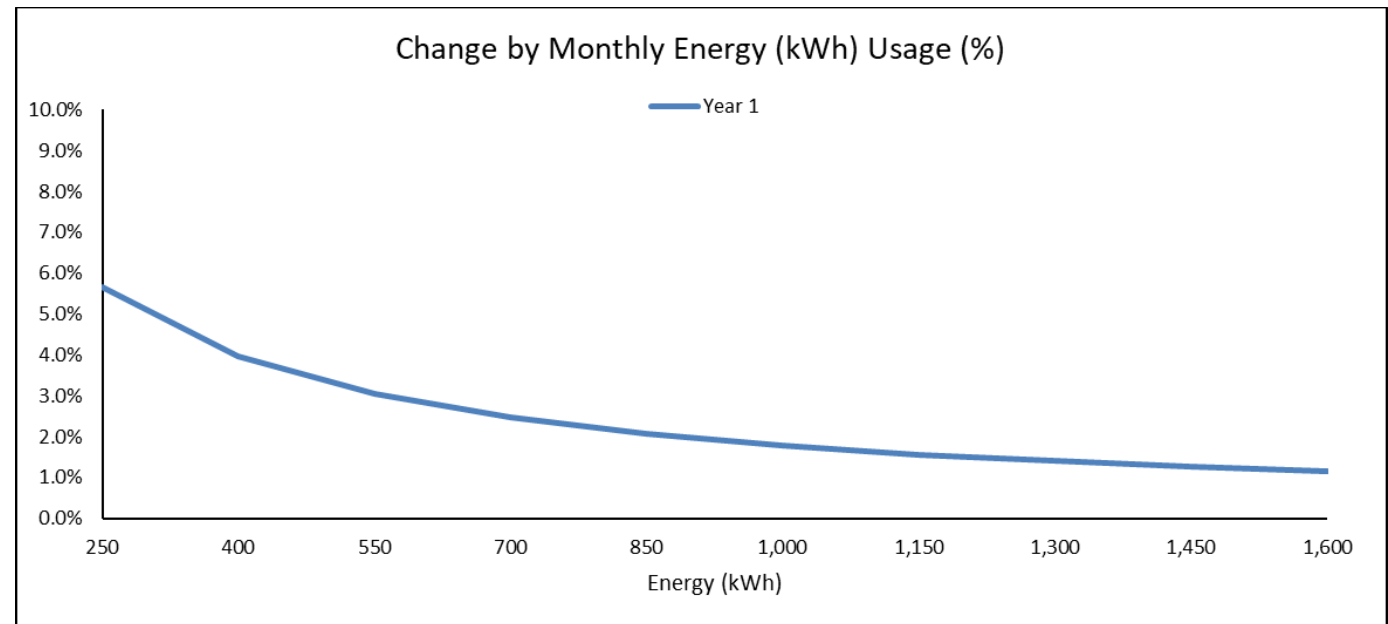
Customer Breakdown		
Distribution Customer Costs	\$	12.66
Transformer Customer Costs		2.28
Substation Customer Costs		-
Meter O&M		3.65
Meter Reading		0.43
Billing		3.49
Services		2.91
Customer Service		1.26
<b>Customer Charge \$/Meter</b>	<b>\$</b>	<b>26.68</b>

# Next Steps

- Proposed Rate Change = 0%
  - Suggested Bandwidth to Move Commercial Classes toward Cost of Service = 2%
    - Largest Class Increase 2%
    - Largest Class Decrease 2%
- Move Customer Charge Toward COS
  - Residential Suggested Increase \$2

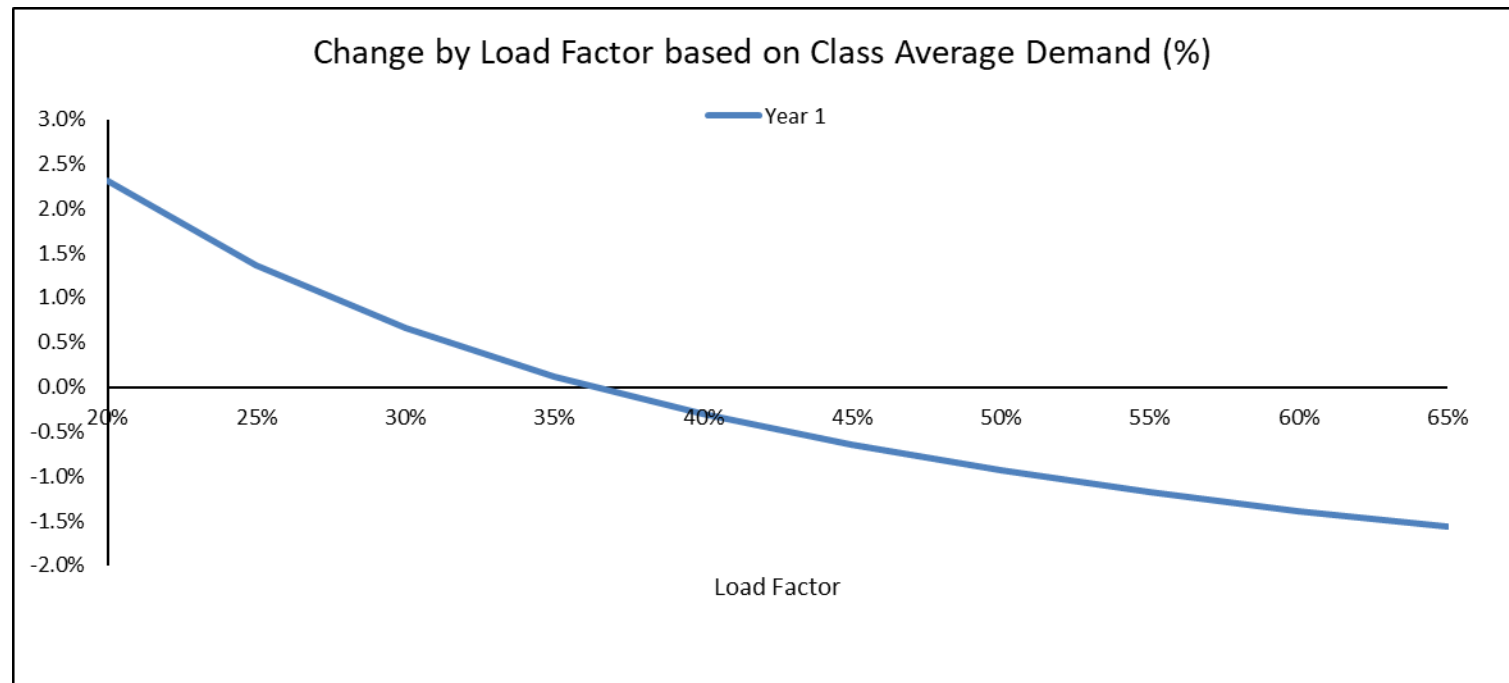
# Sample Small General (SG1) Rate

Rates	Current	Year 1
<b>Monthly Facilities Charge:</b>		
Monthly Charge	\$ 20.00	\$ 24.00
<b>Energy Charge:</b>		
Capacity	\$ 0.05708	\$ 0.07340
Distribution	\$ 0.06561	\$ 0.04926
Energy	\$ 0.08393	\$ 0.07903
<b>Power Cost Adjustment:</b>		
All Energy	\$ (0.00490)	\$ -
Underground Adder	\$ 37,951	\$ 38,710
Revenue from Rate	\$ 2,568,035	\$ 2,619,396
Change from Previous		2.0%



# Sample Medium General (MG1) Rate

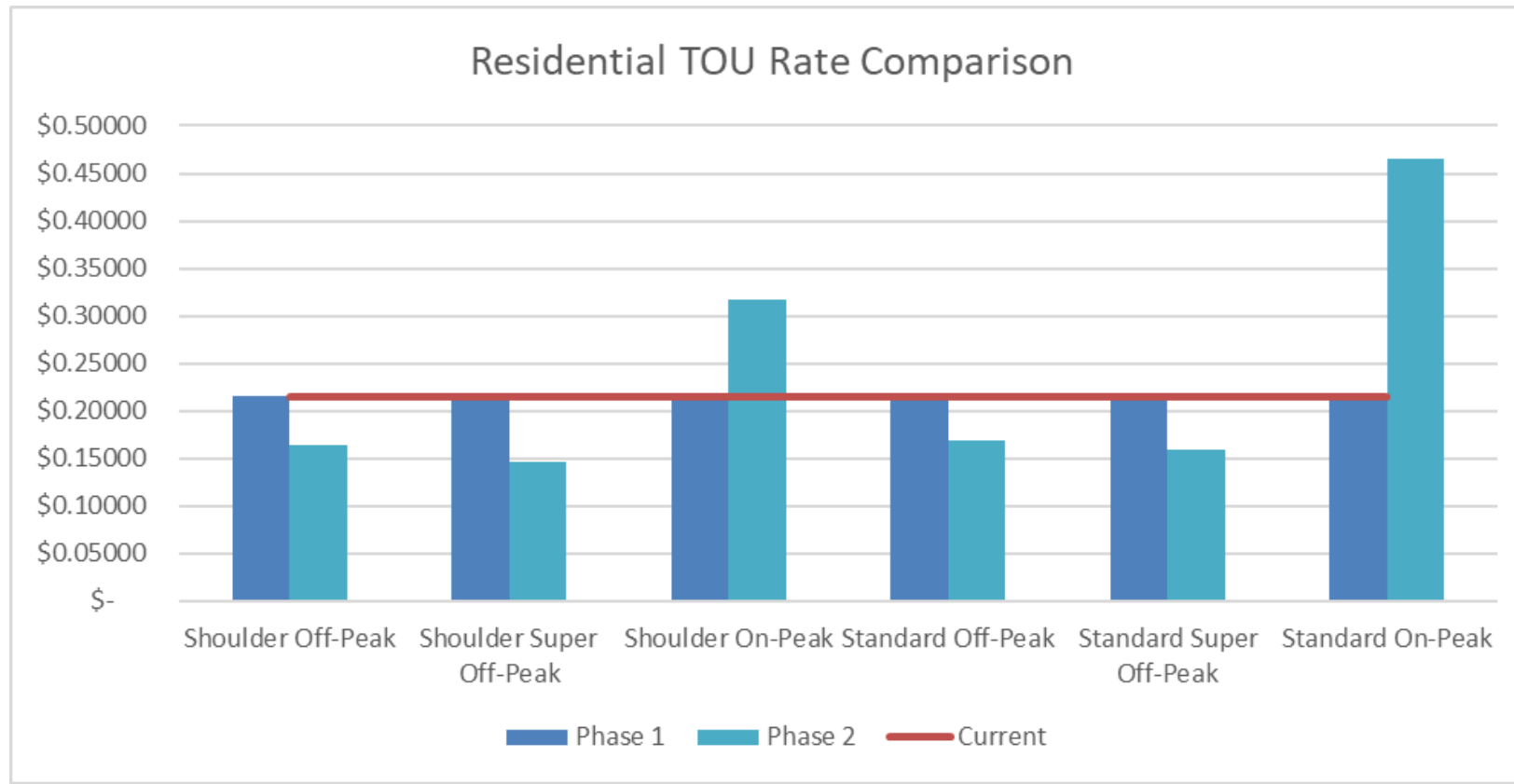
Rates	Current	Year 1
Monthly Facilities Charge:		
Monthly Charge	\$ 59.00	\$ 100.00
Energy Based Charge:		
Capacity	\$ 0.04209	\$ 0.04779
Distribution	\$ 0.06561	\$ 0.05248
Energy	\$ 0.08393	\$ 0.07903
All Energy	\$ 0.19163	\$ 0.17929
Demand Charge		
All Demand	\$ 9.56	\$ 10.56
Power Cost Adjustment:		
All Energy	\$ (0.00490)	\$ -
Underground Adder	\$ 68,907	\$ 68,542
Revenue from Rate	\$ 4,662,733	\$ 4,569,478
Change from Previous		-2.0%



# Residential Time-of-Day (TOD) – Set Up

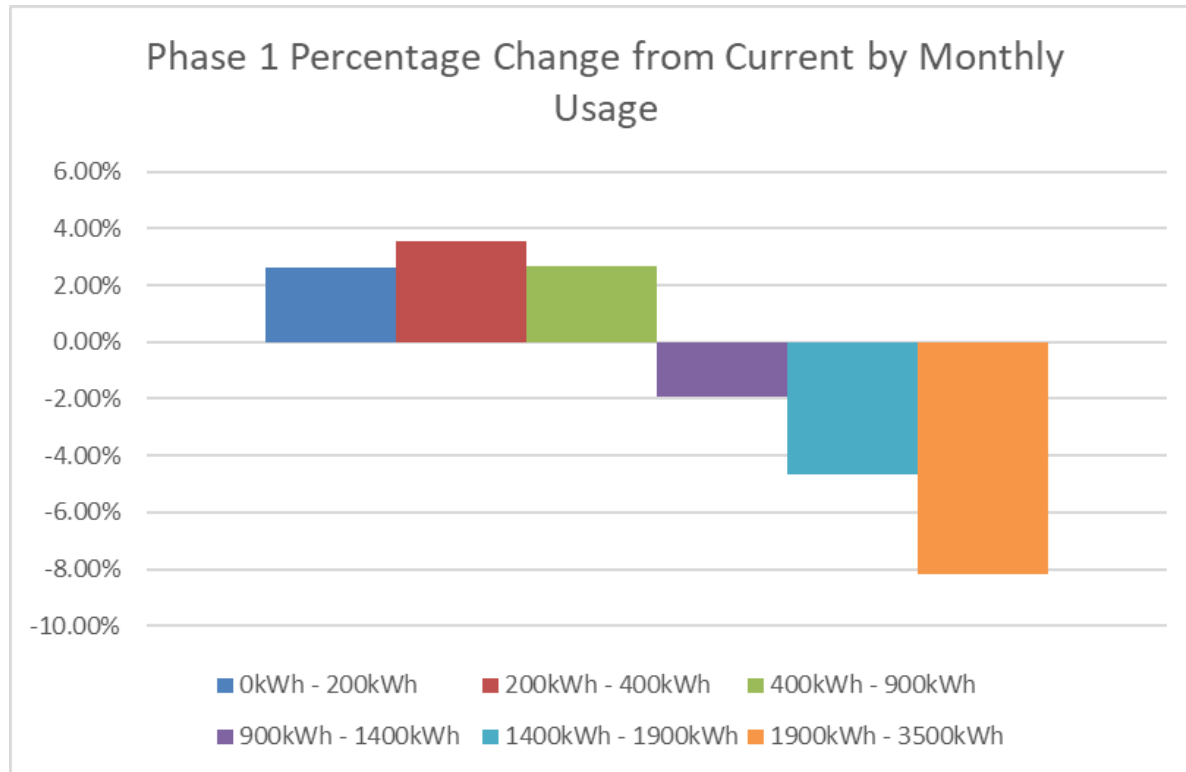
Set Up TOU Periods (Months 1=Jan....12=Dec)													
Hour Ending	Standard 1	Standard 2	Shoulder 3	Shoulder 4	Standard 5	Standard 6	Standard 7	Standard 8	Standard 9	Shoulder 10	Shoulder 11	Standard 12	
1.0	1	1	1	1	1	1	1	1	1	1	1	1	
2.0	0	0	0	0	0	0	0	0	0	0	0	0	
3.0	0	0	0	0	0	0	0	0	0	0	0	0	
4.0	0	0	0	0	0	0	0	0	0	0	0	0	
5.0	0	0	0	0	0	0	0	0	0	0	0	0	
6.0	1	1	1	1	1	1	1	1	1	1	1	1	
7.0	1	1	1	1	1	1	1	1	1	1	1	1	
8.0	1	1	1	1	1	1	1	1	1	1	1	1	
9.0	1	1	1	1	1	1	1	1	1	1	1	1	
10.0	1	1	1	1	1	1	1	1	1	1	1	1	
11.0	1	1	1	1	1	1	1	1	1	1	1	1	
12.0	1	1	1	1	1	1	1	1	1	1	1	1	
13.0	1	1	1	1	1	1	1	1	1	1	1	1	
14.0	1	1	1	1	1	1	1	1	1	1	1	1	
15.0	1	1	1	1	1	1	1	1	1	1	1	1	
16.0	2	2	2	2	2	2	2	2	2	2	2	2	
17.0	2	2	2	2	2	2	2	2	2	2	2	2	
18.0	2	2	2	2	2	2	2	2	2	2	2	2	
19.0	2	2	2	2	2	2	2	2	2	2	2	2	
20.0	1	1	1	1	1	1	1	1	1	1	1	1	
21.0	1	1	1	1	1	1	1	1	1	1	1	1	
22.0	1	1	1	1	1	1	1	1	1	1	1	1	
23.0	1	1	1	1	1	1	1	1	1	1	1	1	
24.0	1	1	1	1	1	1	1	1	1	1	1	1	
Super Off-Peak				0									
Off-Peak				1									
On-Peak				2									

# Residential Time-of-Day Rate (revenue neutral)



Does not include adders (Underground, PCA, PASNY etc.)

# Residential Time-of-Day Effects (Current - Phase 1)



Usage (kWh)	Average Monthly \$ Change	Count
0kWh - 200kWh	\$ 1.34	38
200kWh - 400kWh	\$ 2.97	116
400kWh - 900kWh	\$ 4.00	207
900kWh - 1400kWh	\$ (5.14)	77
1400kWh - 1900kWh	\$ (17.57)	20
1900kWh - 3500kWh	\$ (49.33)	12

Usage (kWh)	Average Monthly \$ Change	Count
0kWh - 200kWh	\$ 3.75	38
200kWh - 400kWh	\$ 5.31	116
400kWh - 900kWh	\$ 5.85	207
900kWh - 1400kWh	\$ (6.90)	77
1400kWh - 1900kWh	\$ (21.81)	20
1900kWh - 3500kWh	\$ (64.06)	12

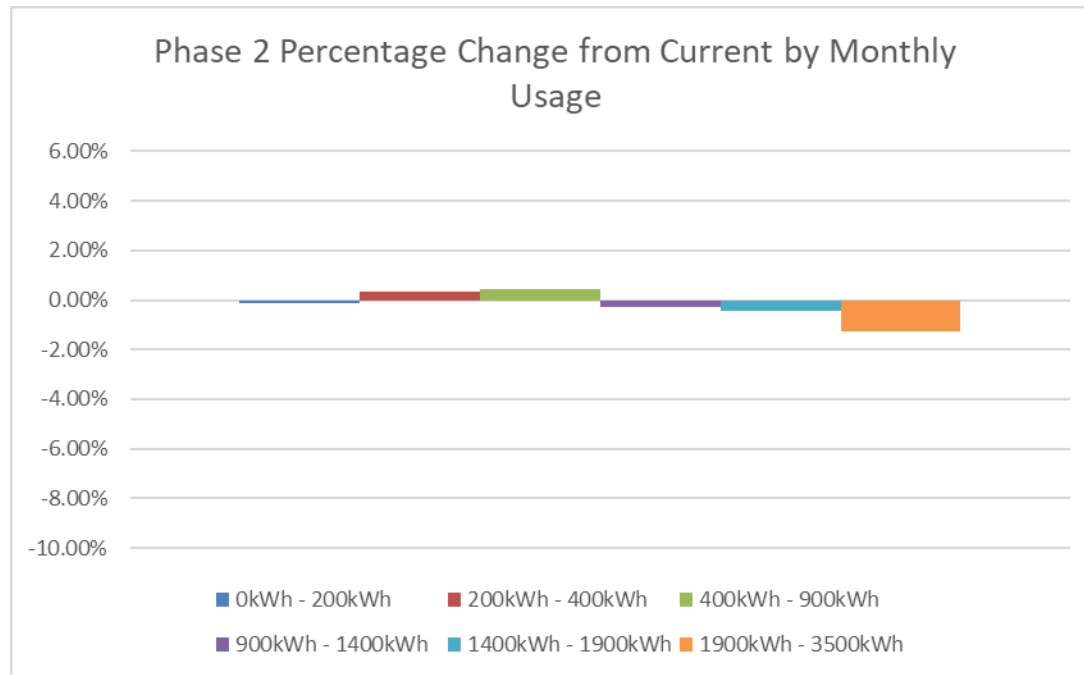
**Customer Charge = \$23**

# Residential Time-of-Day Effects Monthly \$ (Current - Phase 1)

Rank	Decrease %	Annual \$	Monthly \$
1	-11.73%	\$ (913.58)	\$ (76.13)
2	-9.58%	\$ (820.61)	\$ (68.38)
3	-7.95%	\$ (728.30)	\$ (60.69)
4	-8.65%	\$ (717.14)	\$ (59.76)
5	-8.76%	\$ (695.60)	\$ (57.97)
6	-8.29%	\$ (607.58)	\$ (50.63)
7	-7.64%	\$ (543.68)	\$ (45.31)
8	-8.55%	\$ (524.43)	\$ (43.70)
9	-7.20%	\$ (466.91)	\$ (38.91)
10	-6.16%	\$ (427.54)	\$ (35.63)
11	-7.30%	\$ (350.71)	\$ (29.23)
12	-6.18%	\$ (343.09)	\$ (28.59)
13	-6.71%	\$ (333.44)	\$ (27.79)
14	-6.50%	\$ (324.96)	\$ (27.08)
15	-5.50%	\$ (315.45)	\$ (26.29)

Rank	Increase %	Annual \$	Monthly \$
1	4.62%	\$ 101.43	\$ 8.45
2	3.62%	\$ 101.06	\$ 8.42
3	5.12%	\$ 94.15	\$ 7.85
4	6.75%	\$ 93.44	\$ 7.79
5	4.25%	\$ 93.29	\$ 7.77
6	4.47%	\$ 90.10	\$ 7.51
7	4.26%	\$ 90.06	\$ 7.50
8	3.93%	\$ 89.86	\$ 7.49
9	3.62%	\$ 88.54	\$ 7.38
10	4.08%	\$ 86.84	\$ 7.24
11	3.56%	\$ 86.10	\$ 7.17
12	4.49%	\$ 84.22	\$ 7.02
13	4.22%	\$ 82.40	\$ 6.87
14	4.30%	\$ 81.81	\$ 6.82
15	4.72%	\$ 80.27	\$ 6.69

# Residential Time-of-Day Effects (Phase 1 – Phase 2)



Usage (kWh)	Average Monthly \$ Change	Count
0kWh - 200kWh	\$ (0.08)	38
200kWh - 400kWh	\$ 0.38	116
400kWh - 900kWh	\$ 0.91	207
900kWh - 1400kWh	\$ (1.02)	77
1400kWh - 1900kWh	\$ (1.99)	20
1900kWh - 3500kWh	\$ (9.36)	12

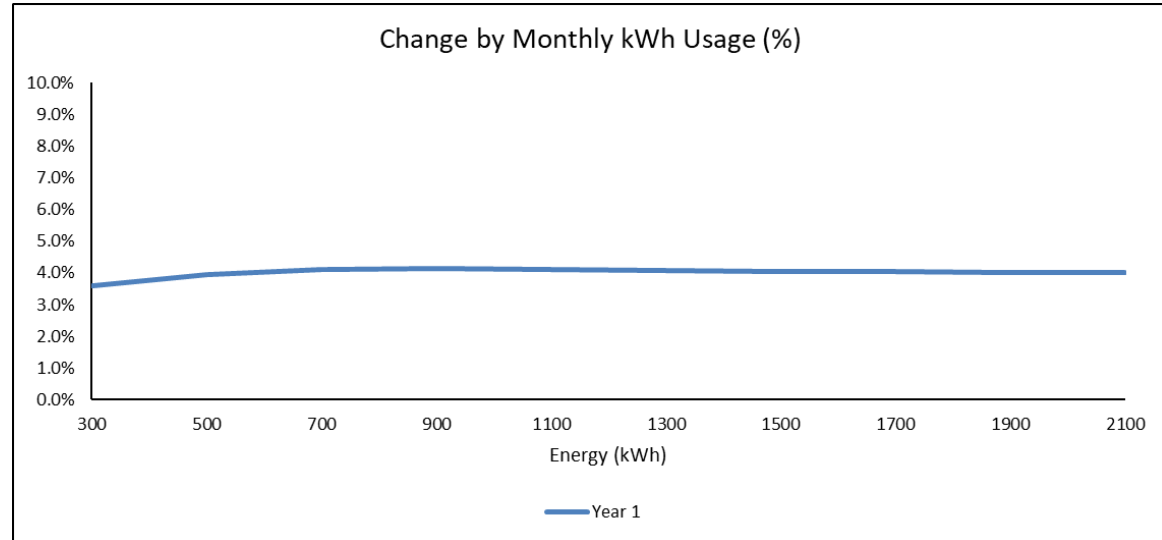
# Residential Time-of-Day Effects Monthly \$ (Phase 1 - Phase 2)

Rank	Decrease %	Annual \$	Monthly \$
1	-6.00%	\$ (412.49)	\$ (34.37)
2	-3.55%	\$ (275.14)	\$ (22.93)
3	-4.71%	\$ (264.42)	\$ (22.04)
4	-6.73%	\$ (228.93)	\$ (19.08)
5	-4.72%	\$ (209.93)	\$ (17.49)
6	-2.39%	\$ (173.45)	\$ (14.45)
7	-4.08%	\$ (165.60)	\$ (13.80)
8	-3.48%	\$ (161.21)	\$ (13.43)
9	-3.34%	\$ (146.79)	\$ (12.23)
10	-2.16%	\$ (145.32)	\$ (12.11)
11	-2.93%	\$ (136.97)	\$ (11.41)
12	-3.98%	\$ (135.00)	\$ (11.25)
13	-1.76%	\$ (133.37)	\$ (11.11)
14	-3.29%	\$ (127.29)	\$ (10.61)
15	-6.23%	\$ (125.18)	\$ (10.43)

Rank	Increase %	Annual \$	Monthly \$
1	4.29%	\$ 214.83	\$ 17.90
2	6.53%	\$ 188.84	\$ 15.74
3	4.72%	\$ 155.73	\$ 12.98
4	6.67%	\$ 153.06	\$ 12.76
5	5.14%	\$ 152.51	\$ 12.71
6	5.79%	\$ 146.76	\$ 12.23
7	6.22%	\$ 126.55	\$ 10.55
8	5.73%	\$ 126.33	\$ 10.53
9	1.87%	\$ 121.99	\$ 10.17
10	2.53%	\$ 117.36	\$ 9.78
11	5.50%	\$ 116.86	\$ 9.74
12	4.43%	\$ 105.35	\$ 8.78
13	4.20%	\$ 105.14	\$ 8.76
14	4.11%	\$ 104.16	\$ 8.68
15	6.64%	\$ 98.09	\$ 8.17

# Sample Residential Rate Opt-Out Rate

Rates	Current	Year 1
<b>Monthly Facilities Charge:</b>		
All Customers	\$ 20.00	\$ 20.00
<b>Capacity/Transmission Charge:</b>		
Block 1 (0 - 657 kWh)	\$ 0.05619	\$ 0.06922
Block 2 (658 - 835 kWh)	\$ 0.06928	\$ 0.08231
Block 3 (Excess)	\$ 0.09445	\$ 0.10748
<b>Distribution Charge:</b>		
All Energy	\$ 0.06561	\$ 0.06195
<b>Energy Charge:</b>		
All Energy	\$ 0.08393	\$ 0.07903
<b>Adjustments:</b>		
Power Adjustment	\$ (0.00490)	\$ -
NYPA Credit	\$ (0.02500)	\$ (0.02500)
Hot Water Credit	\$ (10.00)	\$ (10.00)
<b>Underground Charge:</b>		
Annual Total	\$ 257,911.66	\$ 268,719.21
Revenue from Rate	\$ 17,452,022	\$ 18,150,103
Change from Previous		4.0%



Monthly Change	
kWh	Year 1
300	\$ 2.85
500	\$ 4.76
700	\$ 6.66
Average	\$ 8.56
1100	\$ 10.46
1300	\$ 12.37
1500	\$ 14.27

# Value of Solar (VOS) Annual, TOD

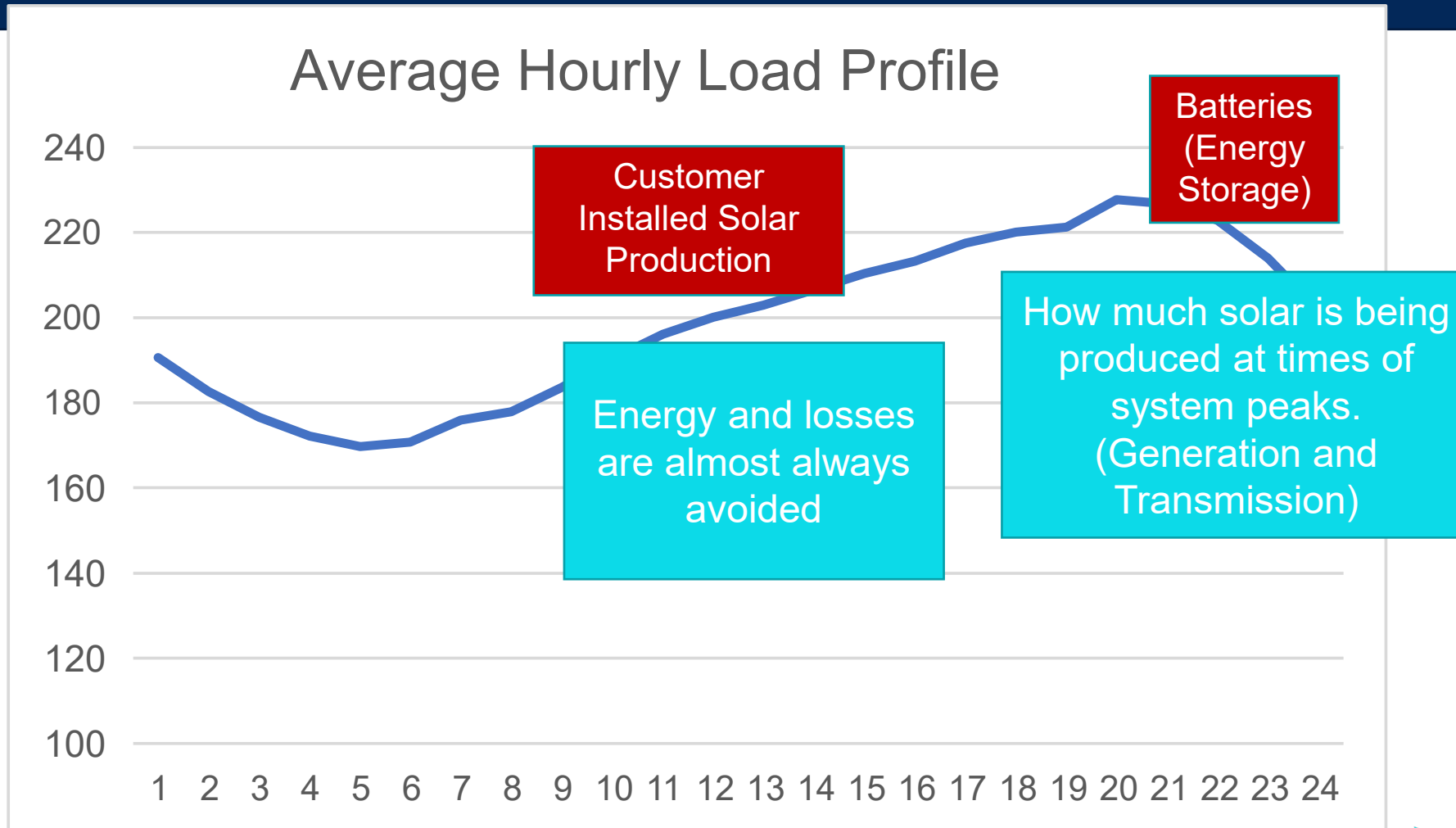
Annual	
Months	Rolling Average
60	\$ 0.059
48	\$ 0.063
36	\$ 0.065
24	\$ 0.047
12	\$ 0.054

Solar ETC	
Monthly Facilities Charge:	
All Customers	
Energy Charge:	
Shoulder Off-Peak	\$ 0.05200
Shoulder Super Off-Peak	\$ 0.03441
Shoulder On-Peak	\$ 0.20647
Standard Off-Peak	\$ 0.05806
Standard Super Off-Peak	\$ 0.04860
Standard On-Peak	\$ 0.35455

ETC: Energy, Transmission and Capacity

# Avoided Cost Rates for Solar and Dispatchable Generation

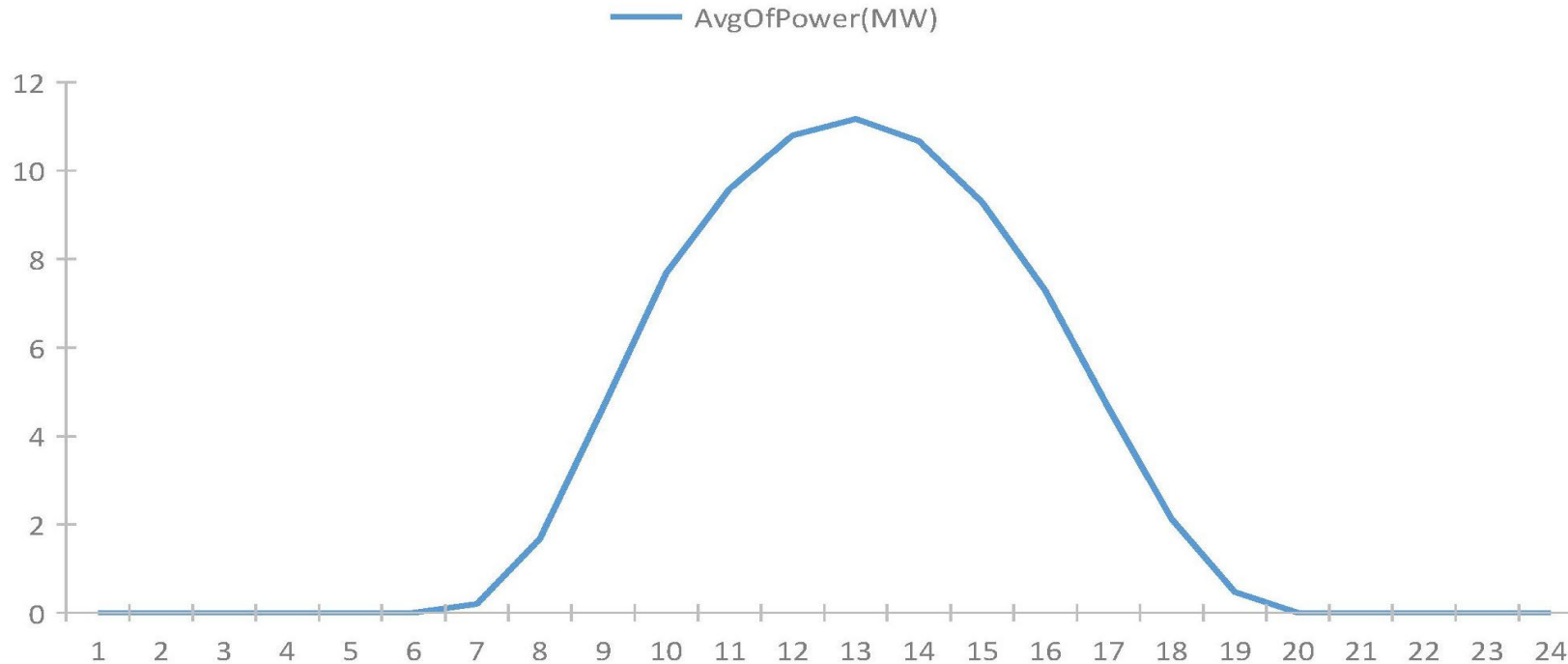
# How Avoided Costs are Determined



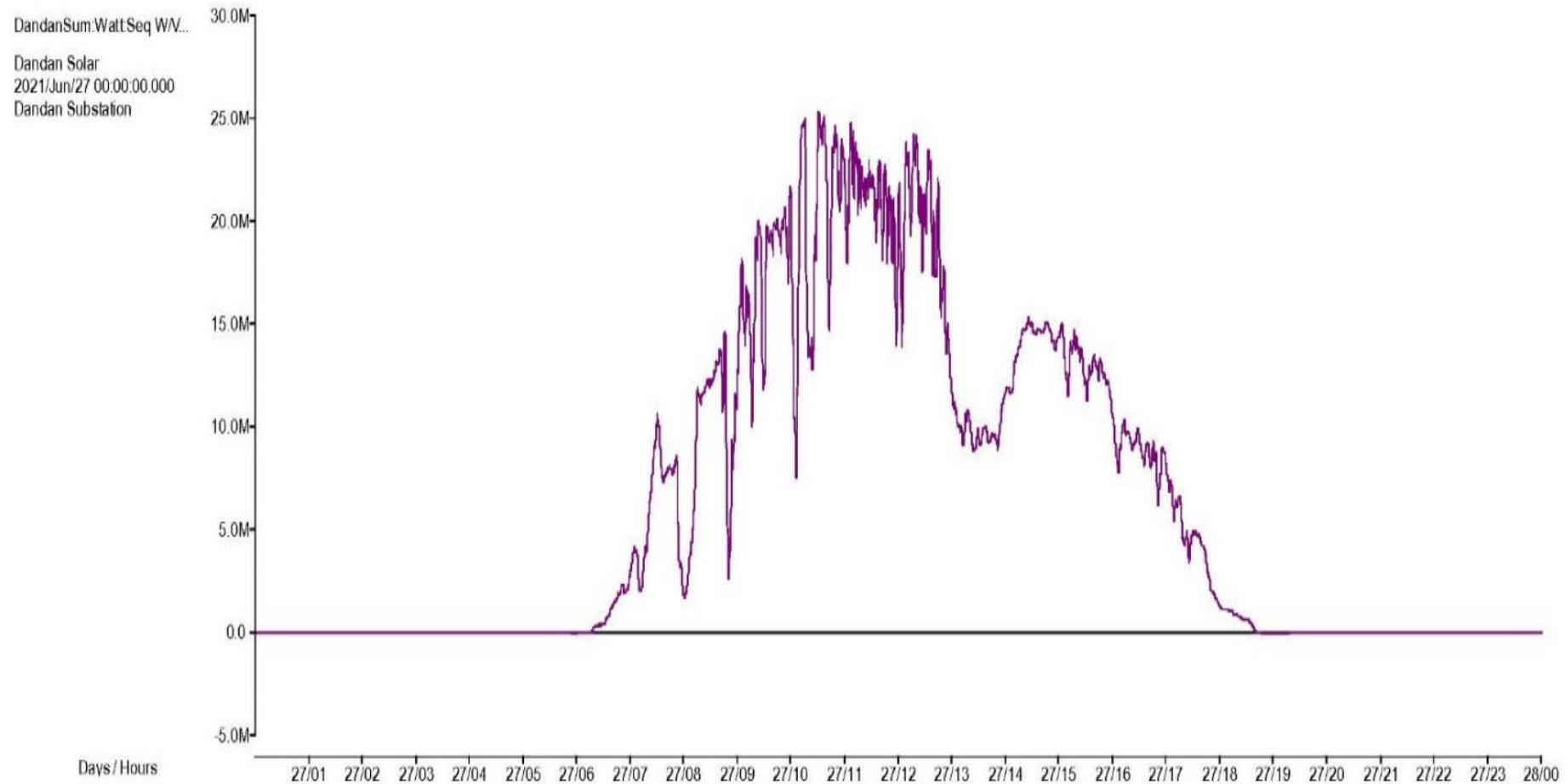
# Solar Production

## Perceived Solar Production Profile

Solar Production - Average Hourly - All Year

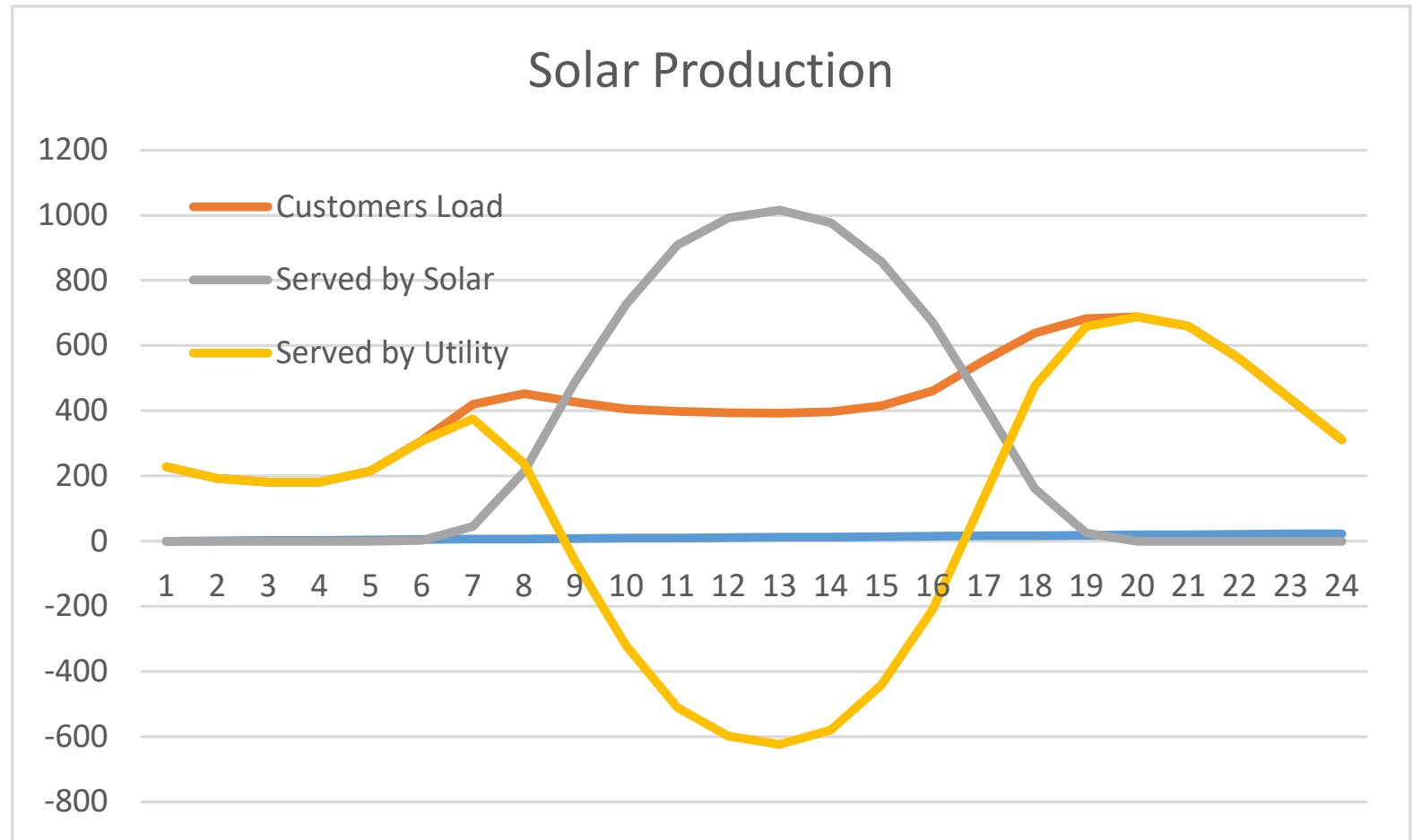


# Actual Solar Production



# Determination of Utility Energy and Solar Energy

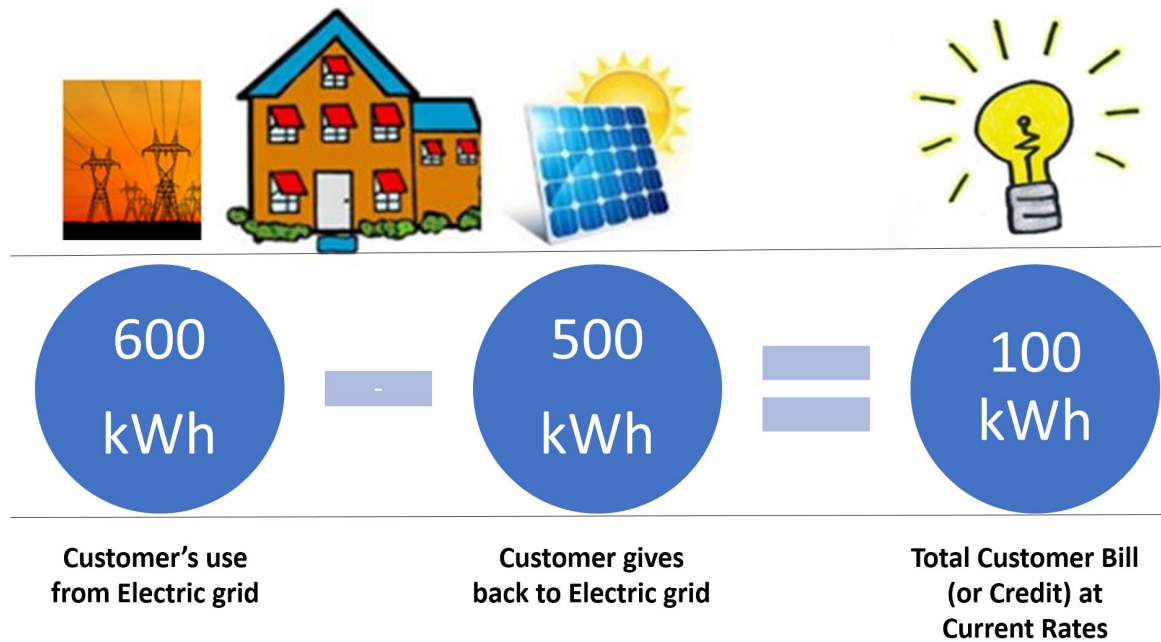
Hour	Customers Load	Served by Solar	Served by Utility	Exported to System
0	229	-	229	-
1	193	-	193	-
2	180	-	180	-
3	182	-	182	-
4	215	-	215	-
5	308	2	307	-
6	420	45	375	-
7	453	214	238	(12)
8	427	488	(61)	(160)
9	406	727	(321)	(369)
10	398	909	(510)	(540)
11	394	991	(598)	(619)
12	392	1,016	(624)	(642)
13	397	977	(580)	(599)
14	416	856	(441)	(467)
15	461	671	(210)	(261)
16	554	418	136	(45)
17	638	161	477	(0)
18	683	25	658	-
19	689	0	689	-
20	659	-	659	-
21	560	-	560	-
22	435	-	435	-
23	312	-	312	-
<b>Total</b>	<b>10,000</b>	<b>7,500</b>	<b>2,500</b>	<b>(3,713)</b>



# Types of Avoided Cost Value Rate Structures for Solar

- Net Metering
- Net Billing
- Buy all; sell all
- Hybrids

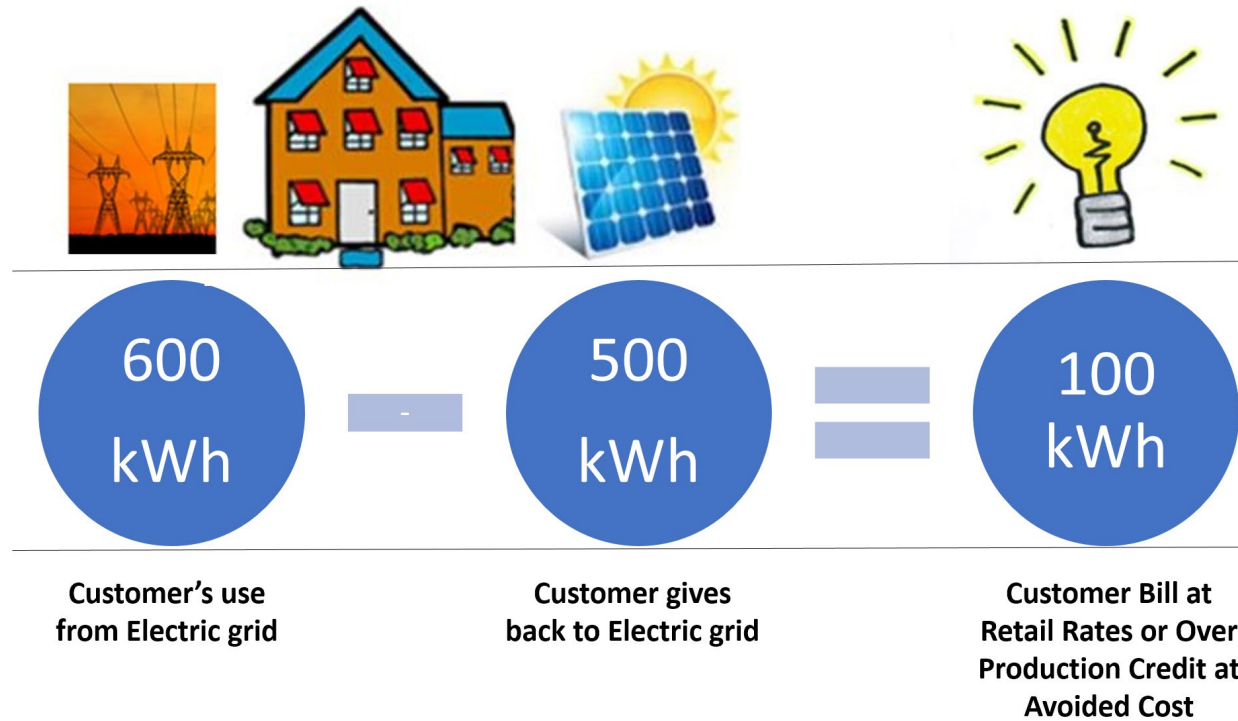
# Net Metering



**Example:** Local utility provided 600 kWh to customer and customer provided back 500 kWh's.

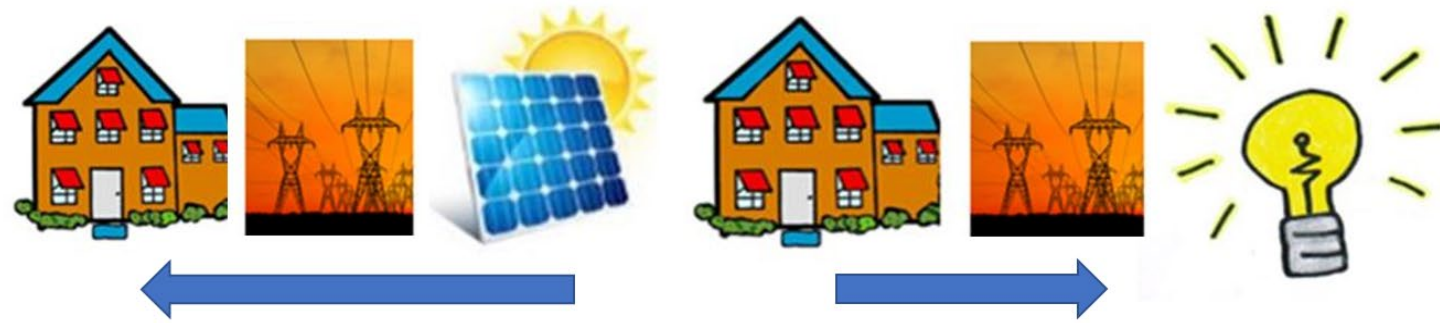
Customer is billed at net (100 kWh's) at retail rate

# Net Billing



**Example:** Customer takes 600 kWh's from utility and gives back 500 kWh's

# Buy All, Sell All



Customer's use  
from Electric grid at  
Retail Rates

Total Generation  
from Solar Panel at  
Retail Rates

Customer gives  
back to Electric Grid  
at Retail Rates

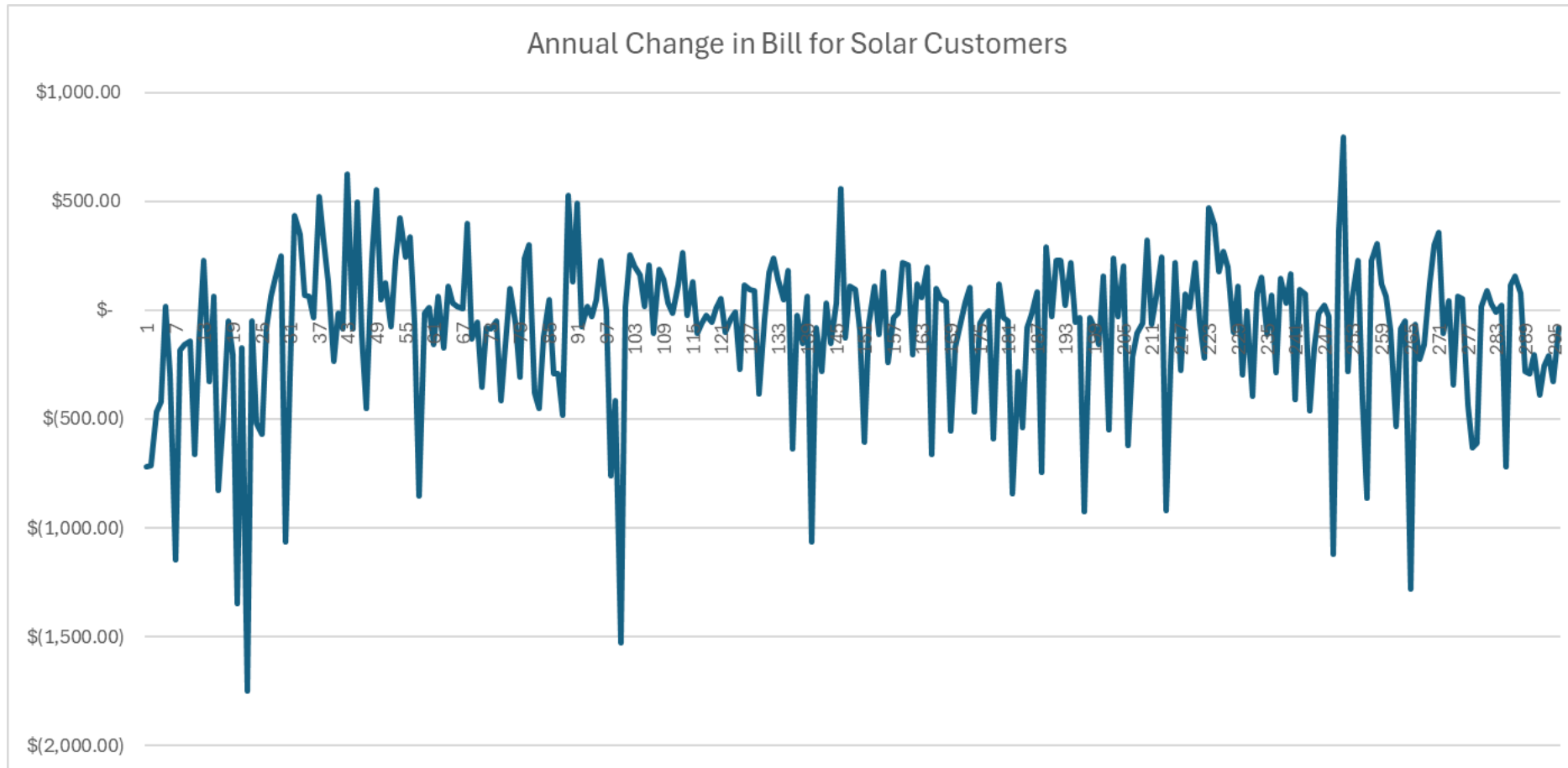
Billed at Retail Rates

Credit at  
Avoided Cost

# Residential Charges

	Net Metering	W/O Net Metering	Net Billing	Buy All; Sell All
Meter in	600	900	600	600
Meter Out	500	-	500	500
Production from Solar Unit	800	-	800	800
Customers Usage	900	900	900	900
<b>Customer KWH Usage for billing</b>	<b>100</b>	<b>900</b>	<b>600</b>	<b>900</b>
<b>Utility Rates</b>				
Facilities Charge	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00
<b>Energy Rates KWH</b>				
First 500 kWh's	0.08000	0.08000	0.08000	0.08000
Excess kWh's	0.12000	0.12000	0.12000	0.12000
PCA	0.01000	0.01000	0.01000	0.01000
Value of Solar	0.06500	0.06500	0.06500	0.06500
<b>Customer Charges</b>				
Facilities Charge	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00
First Block Charges	8.00	40.00	40.00	40.00
Second Block Charges	-	48.00	12.00	48.00
PCA	1.00	9.00	6.00	9.00
Credit for Value of Solar			(32.50)	(52.00)
<b>Total Charge</b>	<b>\$ 18.00</b>	<b>\$ 106.00</b>	<b>\$ 34.50</b>	<b>\$ 54.00</b>

# Value of Solar (VOS) Annual, Customer Impacts



# Questions?



# Time Period Development (TOD) – Coincidence Probability

Transmission Coincident Peak Hour Ending (CP <sup>Trans</sup> HE)																
CP <sup>Trans</sup>	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S	0	0	0	0	0	0	0	0	0	6	5	26	3	0	0	0
S Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	13%	65%	8%	0%	0%	0%
W	0	0	0	0	1	1	2	0	0	0	1	8	5	2	0	0
W Probability	0%	0%	0%	0%	5%	5%	10%	0%	0%	0%	5%	40%	25%	10%	0%	0%
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
All	0	0	0	0	1	1	2	0	0	6	6	34	8	2	0	0
All Probability	0%	0%	0%	0%	2%	2%	3%	0%	0%	10%	10%	57%	13%	3%	0%	0%

Resource Adequacy/Capacity Coincident Peak Hour Ending (CP <sup>RA</sup> HE)																
CP <sup>RA</sup>	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0
S Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%	60%	0%	0%	0%	0%
W	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
W Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
All	0	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0
All Probability	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	20%	60%	0%	0%	0%	0%

# Debt Coverage Ratio (no rate change)

Description	Projected 2026	Projected 2027	Projected 2028	Projected 2029	Projected 2030
Debt Coverage Ratio					
Net Income	\$ 5,484,197	\$ 5,205,872	\$ 5,398,882	\$ 5,093,376	\$ 4,880,675
Add Depreciation/Amortization Expense	2,808,999	2,852,532	3,134,482	3,413,011	3,494,248
Add Interest Expense	15,688	3,750	-	-	-
Cash Generated from Operations	\$ 8,308,883	\$ 8,062,154	\$ 8,533,364	\$ 8,506,387	\$ 8,374,924
Debt Principal and Interest	\$ 500,688	\$ 303,750	\$ -	\$ -	\$ -
<b>Projected Debt Coverage Ratio (Covenants)</b>	<b>16.59</b>	<b>26.54</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Minimum Debt Coverage Ratio</b>	<b>1.4</b>	<b>1.4</b>	<b>1.4</b>	<b>1.4</b>	<b>1.4</b>

# Minimum Cash Reserves (no rate change)

Description	Projected 2026	Projected 2027	Projected 2028	Projected 2029	Projected 2030
<b>Minimum Cash Reserve Allocation</b>					
Operation & Maintenance Less Depreciation Expense	12.3%	12.3%	12.3%	12.3%	12.3%
Purchase Power Expense	11.3%	11.3%	11.3%	11.3%	11.3%
Historical Rate Base	1%	1%	1%	1%	1%
Energy Exposure	20%	20%	20%	20%	20%
Current Portion of Debt Service Payment	99%	99%	99%	99%	99%
Five Year Capital Improvements - Net of bond proceeds	20%	20%	20%	20%	20%
% Plant Depreciated	45%	47%	45%	47%	49%
<b>Calculated Minimum Cash Level</b>					
Operation & Maintenance Less Depreciation Expense	\$ 1,078,039	\$ 1,110,381	\$ 1,143,692	\$ 1,178,003	\$ 1,213,343
Purchase Power Expense	2,683,129	2,756,005	2,786,141	2,837,380	2,912,510
Historical Rate Base	958,998	980,764	1,099,972	1,120,029	1,140,591
Energy Exposure	1,867,492	1,918,215	1,939,190	1,974,853	2,027,145
Current Portion of Debt Service Reserve	496,938	301,475	-	-	-
Five Year Capital Improvements - Net of bond proceeds	5,226,364	5,226,364	5,226,364	5,226,364	5,226,364
<b>Minimum Cash Reserve Levels</b>	<b>\$ 12,310,960</b>	<b>\$ 12,293,205</b>	<b>\$ 12,195,360</b>	<b>\$ 12,336,630</b>	<b>\$ 12,519,953</b>
<b>Projected Cash Reserves</b>	<b>\$ 14,255,149</b>	<b>\$ 19,836,880</b>	<b>\$ 16,449,438</b>	<b>\$ 22,950,179</b>	<b>\$ 29,268,875</b>

# Target Operating Income (no rate change)

Description	Projected 2026	Projected 2027	Projected 2028	Projected 2029	Projected 2030
<b>Optimal Operating Income Determinants</b>					
Net Book Value/Working Capital	\$ 52,760,895	\$ 52,085,035	\$ 60,871,359	\$ 59,463,994	\$ 58,025,974
Outstanding Principal on Debt	300,000	-	-	-	-
System Equity	\$ 52,460,895	\$ 52,085,035	\$ 60,871,359	\$ 59,463,994	\$ 58,025,974
Debt:Equity Ratio	1%	0%	0%	0%	0%
<b>Optimal Operating Income Allocation</b>					
Interest on Debt	5.23%	0.00%	0.00%	0.00%	0.00%
System Equity	10.27%	10.64%	10.21%	10.64%	11.10%
<b>Optimal Operating Income</b>					
Interest on Debt	\$ 15,688	\$ 3,750	\$ -	\$ -	\$ -
System Equity	\$ 5,386,165	\$ 5,539,917	\$ 6,213,272	\$ 6,326,562	\$ 6,442,709
<b>Optimal Operating Income</b>	<b>\$ 5,401,852</b>	<b>\$ 5,543,667</b>	<b>\$ 6,213,272</b>	<b>\$ 6,326,562</b>	<b>\$ 6,442,709</b>
<b>Projected Operating Income</b>	<b>\$ 4,918,709</b>	<b>\$ 5,010,213</b>	<b>\$ 5,151,255</b>	<b>\$ 4,869,407</b>	<b>\$ 4,626,492</b>
<b>Rate of Return in %</b>	<b>10.2%</b>	<b>10.6%</b>	<b>10.2%</b>	<b>10.6%</b>	<b>11.1%</b>

# COS Results

Customer Class	Cost of Service	Projected Revenues	Effective % Change
Residential (R-1)	\$ 18,480,057	\$ 17,452,022	5.9%
Residential (RTOU)	43,090	40,600	6.1%
Residential Off-Peak (R-3)	226,755	165,764	36.8%
Residential ER DP DHW (R-7)	81,787	71,936	13.7%
Small General (G-1)	2,802,507	2,568,035	9.1%
Residential Assistance	196,329	75,375	160.5%
Small General ETS	4,479	2,621	70.8%
SGS NM	26,850	26,654	0.7%
SGS Municipal	76,507	64,391	18.8%
Private Area Lighting	2,887	3,961	-27.1%
Municipal Lighting	424,526	56,750	648.1%
Medium General (G-2)	4,351,461	4,662,733	-6.7%
Large General (G-3)	9,311,321	10,138,068	-8.2%
MGS ETS	2,957	448	560.2%
MGS NM	390,249	422,199	-7.6%
LGS NM	357,003	373,442	-4.4%
MGS Municipal	898,217	1,014,781	-11.5%
LGS Municipal	850,652	909,846	-6.5%
<b>Total</b>	<b>\$ 38,532,770</b>	<b>\$ 38,049,626</b>	<b>1.3%</b>



# Battery Storage Procurement

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Exploring options and weighing risk vs. reward

July 2025

# Shared Savings vs. Tolling vs. Ownership

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Shared savings: Battery developer pays for the battery installation. They dispatch the battery to shave peaks. We split the capacity and transmission savings at the ratio specified in the agreement.



Tolling: Battery developer pays for the battery installation. They turn over complete control of the battery to CMLP for a fixed cost, usually with an annual escalator.



Ownership: CMLP pays for the battery installation. We achieve 100% of peak shaving savings, but we take on 100% of the liability if we miss peaks.



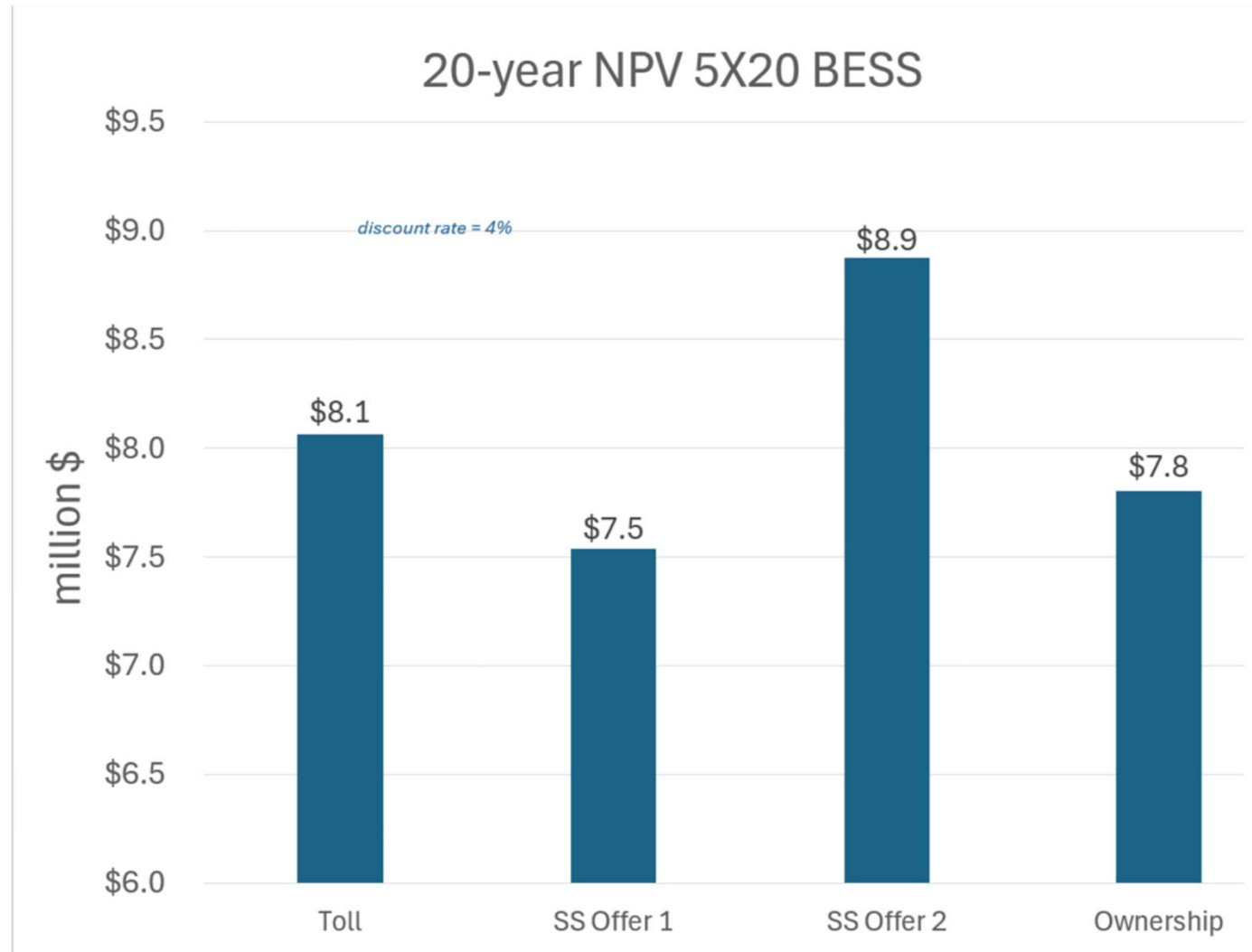
# Shared Savings vs. Ownership Model

	Shared Savings	Ownership
Good	Lose less if no peak	Flexibility (of uses)
	No up-front capital/debt	More money from peak shaving
	Lower impact on CMLP	Better borrowing rate
Bad	Not as flexible	Lose more money
	Less money for peak shaving	Up-front capital/debt
	May have to pay if we cause them to miss a peak	More complicated

# Procurement Options

- Two shared savings proposals:
  1. Up to 1MW of solar curtailment
  2. Peak shaving is the first priority
- One tolling option, where we pay a flat amount per year with an annual escalator
- An outright purchase option

# Financials



# Other Considerations



Is the battery developer the same as the solar developer?



Will the battery absorb solar?



How much control will we have for alternative uses (like to dispatch for scarcity events)?



What will peak shaving look like in 5, 10, or 15 years?



How much work is it to procure and install the battery?