CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC | BROADBAND | ENERGY MANAGEMENT

Date: September 4, 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., Sept. 10, 2025, at 7:30 A.M.** (link below)

7:30 AM 1. **Call to Order**

7:30 AM 2. **Meetings and Minutes** 2 Minutes Chair Vote

- Vote to approve the regular session minutes of August 13 and August 26, 2025.

Upcoming Meetings:
Oct 8, 2025; Oct 2X, 2025*; Nov 12, 2025; Dec 10, 2025; Jan 14, 202**6**; Feb 11, 202**6**
*Not officially scheduled, but we will need a second meeting in October.

7:32 AM 3. **Chair's Update** 3 Minutes Chair Information

7:35 AM 4. **Director's Update** 10 Minutes Director Information

7:45 AM 5. **Broadband Update** 5 Minutes Director Information

7:50 AM 6. **Suspend reg. meeting and open rate hearing** 30 Minutes Asst. Dir. Vote
Requires a motion, a second, and roll call vote

Background: As part of the adoption of an opt-out residential Time-of-Day rate, Utility Financial Solutions (UFS) has been tasked with developing a cost-of-service study and providing advice on updates to all rates that will collect revenue based on gathered data.

Purpose: Multiple rates for discussion and Board vote, including:

- Residential Time-of-Day Rate
- Residential Opt-Out Rate
- Residential Net Billing Rider Rate
- Controlled Water Heating Rider Rate
- Power Adjustment Clause
- Private Area Lighting
- Residential Electric Vehicle Charging Separate Meter
- Small General Rate
- Medium General Rate
- Large General Rate
- General Service Net Metering
- General Service Electric Vehicle Charging Rate

8:20 AM 7. **Time of Day Implementation Schedule** 20 Minutes Director Discussion

Background: CMLP is working on a roll-out of a default opt-out time-of-use rate for residential customers. The goal was to implement the rates as of 1/1/2026.

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Purpose: With rates slated for approval in September, discuss the remaining action items and determine if the implementation should be moved to April 2026.

8:40 AM	8.	**Networked Geothermal**	20 Minutes	Guest	Discussion

Background: The Concord Climate Action Committee has a subcommittee specifically focusing on networked geothermal. They have had plans to seek grant funds to study networked geothermal.

Purpose: To discuss networked geothermal with the Light Board and have a discussion

9:00 AM	9.	**Liaison & Public Comments**	5 Minutes	Chair	Information
9:05 AM	10.	**Adjourn**			

Distribution: Select Board (1 copy)

Kerry Lafleur	Joe Repoff	Laura Scott	Nan Okarma
Dale Hartling	Cameron McKennitt	Don Kupka	

Join Zoom Meeting
https://us02web.zoom.us/j/83853970051?pwd=akVzemJRQk8vNTJRUnNlOS9NNDFuQT09

Meeting ID: 838 5397 0051
Passcode: 661712

Link to view recordings of previous Light Board Meetings:
https://www.youtube.com/playlist?list=PL1TTzrWEKOOn0RlJ2MdE2SnNZMWYeoeat

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

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Concord Municipal Light Board Minutes
August 13, 2025

Pursuant to a notice duly filed with the Town Clerk, a meeting of the Concord Municipal Light Board was held on Wednesday, August 13, 2025, at 7:30 am, via a Zoom meeting. Present were Board Members: Warren Leon, John Dalton, Brian Foulds, and Chris Schaffner. Also in attendance were Jason Bulger, CMLP Director; Laura Scott, Assistant Director of Power Supply and Energy Management; Joe Repoff, Assistant Director of Engineering and Operations; Nan Okarma, Financial Manager; Karin Farrow, Office Administrator; UFS President Mark Beauchamp; and residents Fran Cummings, Gail Hire, Brad Hubbard-Nelson and Pamela Dritt.

Note definitions for acronyms used in these minutes:

- **CMLP**: Concord Municipal Light Plant
- **TOD**: Time of Day
- **UFS**: Utility Financial Solutions

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.[1]

MEETINGS & MINUTES (0:16)

Mr. Foulds moved to approve the July 18, 2025 regular session meeting minutes as distributed. Mr. Dalton seconded the motion, and with all members present in favor, the motion carried 3-0. (Mr. Schaffner had not yet arrived and Ms. Taylor were absent.)

DIRECTOR'S UPDATE (1:21)

Director Jason Bulger provided updates on operations and the organization, including:

- CMLP extends its gratitude to Carole Hilton, our Customer Service Manager for the past 16 years. Carole will be staying around a couple of days per week to assist with the transition to her successor, as well as work on the marketing and implementation of Time-of-Day rates.
- Jennifer Clougherty has been hired and begins at CMLP on September 3rd in the Customer Service Manager role. She has a wealth of experience managing a sizeable Customer Service team for a large technical enterprise.
- CMLP's Director met with the school's team, including the Superintendent and Assistant Superintendent about the middle school solar project. The goal here is a collaborative project where both stakeholders are happy with the results. CMLP has answered many questions through addenda to clarify requests.
- Following up on the Board's guidance regarding the landfill solar expansion and battery, CMLP has received a draft letter of intent from the developer recommended by the Board. They are looking at some costs and system limitations to ensure that both parties can agree to those terms economically, and then it will move to a legal review. If everything is contained within this non-binding letter of intent, CMLP will execute it so that the process of negotiating a contract can begin.
- Mr. Bulger mentioned that CMLP has had four outages in the last few weeks and has issued a public

[1] Minuteman Media YouTube Link: https://www.youtube.com/watch?v=lDkcMgJKCD0

statement on those to offer an explanation to customers. Two of these outages were caused by rodents, one by a transformer that caught on fire, and one by a large tree falling, which took out multiple poles. The Light Plant and the community at large appreciate the hard work and excellent response times from our Engineering team and Line crew. CMLP takes system reliability very seriously and continues to address outdated equipment while adding more monitoring and trimming trees.

- CMLP's Financial audit is hopefully wrapping up soon, with nearly everything we have submitted being approved by our auditors.

BROADBAND UPDATE (9:15)

Broadband Manager provided updates on Broadband operations and organization, including:

- Daniel Chen, Broadband's new Network Engineer, hired a couple of months ago, is performing well and making meaningful contributions.
- Progress is being made on the XGS-PON, the next-generation broadband service designed to deliver 10G symmetric offerings. Equipment is scheduled to ship at the end of August. Preparatory work includes setting up inventory for new equipment, installing 100G switches and planning for temporary power needs during the conversion period.
- LightPath, the newest Internet Service Provider (ISP) is now connected, and all internet routes have been advertised through them, as well as through our other ISPs. Testing is planned to ensure full service through LightPath, which, if successful, will allow CMLP to drop the lowest-speed and highest-cost provider, thereby increasing speed and reducing costs. Additional internet addressing has been secured from the new provider, with deployment underway even before the new equipment arrives.
- CMLP is reviewing an updated broadband model from its consultant to determine appropriate service tiers and pricing for higher-speed offerings. It includes a pricing model for the new Wi-Fi equipment.
- Next-Generation Wi-Fi Trial: A next-generation Wi-Fi trial is in progress with Calix, the broadband solution vendor. New equipment has been ordered, training received, internal testing completed, and provisioning/inventory processes worked through.
- CMLP is experiencing numerous failures in RF gateways and is actively working with Eaton, the vendor, to identify the root cause. Wi-Fi enabled meters have been configured, verified, and tested successfully on a CMLP test meter. The goal is to deploy these meters in areas where RF reads are challenging.

TIME OF DAY RATE CLARIFICATION (17:16)

Mr. Leon stated that the Board's goal was to move towards a rate hearing to accept Time of Day (TOD) rates for the new year. He mentioned that a small modification was required in the proposed rates due to an issue with previous numbers.

Assistant Director of Power Supply and Energy Management Laura Scott then explained that the previous pricing model had an assumption that weekends from 3:00 to 7:00 p.m. would be charged peak prices. She clarified that this was not the Board's intention, as the consensus was that weekends should only have off-peak and super off-peak periods (1:00 to 5:00 a.m.). She informed the Board that Utility Financial Solutions (UFS) had rerun the numbers to reflect no peaks on weekends.

Mark Beauchamp, President of UFS, quickly reviewed the financial modeling and cost of service results. He recalled the Board's direction to stay within a 2% increase or decrease bandwidth for any rate class to move toward cost of service results. He confirmed Ms. Scott's point that the intention for weekends to be off-peak

required a slight tweak to the modeling.

Mr. Beauchamp then detailed the Time of Day setup, explaining that peak hours would be from 3:00 to 7:00 p.m. (a four-hour period), a super off-peak time from 1:00 a.m. to 5:00 a.m., and off-peak for the remaining hours. He presented a two-phase approach to move toward full cost of service results:

- Phase One would adjust the off-peak rate from 21 cents down to 20 cents, further reduce the super off-peak rate, and increase the on-peak rate to approximately 25 cents (standard period to 30 cents).
- Phase Two would further decrease off-peak to about 18 cents, super off-peak to 15.5 cents, and increase on-peak to around 33 cents (with peak to 47 cents).

He also provided Phase One impact analysis, explaining the rate increases and decreases that customers would see and noting that the change from Phase 1 to Phase 2 would be less dramatic.

Mr. Foulds asked to clarify if the opt-out rate had a flat or tiered structure. Ms. Scott clarified that a past Board vote had determined the opt-out rate would be 4% higher as a disincentive and was planned with tiers. Mr. Foulds disagreed, recalling a simpler, flat rate structure with a $20 monthly fee and a $20 meter read fee. He expressed concern that a tiered opt-out rate might incentivize large customers not to participate in time of day.

Mr. Beauchamp reiterated the primary change was the elimination of the on-peak period on weekends for residential time of day rates, which required a slight adjustment to other rates to recover a million-dollar shortfall, resulting in small increases for customers.

The proposed residential TOD rates changes were very small, as shown on the screen. Mr. Foulds confirmed he had no issue with the half-cent increase to allow weekends to be a full off-peak.

The discussion then expanded to solar credits, which Mr. Foulds questioned, specifically a change from 11 cents to 12.5 cents for net metering, arguing that if TOD rates adjusted for off-peak weekends, distribution charges shouldn't change. Mr. Beauchamp explained that the 12.5-cent amount included three components: distribution costs (8.1 cents), an over market component (3.3 cents due to power costs purchased to support community interests), and RECs (~1 cent), clarifying it was not a new methodology but a more detailed breakdown.

Mr. Foulds expressed discomfort with the multiple changes and the use of different methodologies (market-driven marginal costs for credits versus embedded costs for charges), viewing it as a disincentive for solar investment. Ms. Scott clarified that the embedded costs reflect commitments made to projects like wind farms years ago, and CMLP would incur losses if it credited customers for marginal value while still paying higher embedded costs.

Mr. Beauchamp conveyed that marginal costs are intended to create a "when-when" connection between costs incurred and customer behavior. Mr. Foulds asked for more time on this topic.

After further discussion involving other Board members, Mr. Leon concluded that a rate hearing for all rates could not proceed, necessitating an additional Board meeting, particularly for the solar issue. Mr. Bulger expressed concern about the logistical impact, especially on the January Time of Day launch, due to rate interdependencies and marketing schedules. He suggested a late August meeting for solar, followed by a September rate hearing, but worried it might be too late for a January go-live. Ms. Scott asked Mr. Beauchamp if cementing TOD rates today would pose a problem if other rates, like solar, needed adjustments later. He stated it wouldn't cause major issues, though it could lead to a slight under-recovery for the utility. He also indicated

that delaying the TOD rate rollout until April 1st would not be problematic economically for the utility.

HANDLING OPT-OUT CUSTOMER REQUESTS (1:15:04)

The discussion was initiated by Mr. Bulger, who clarified that there are two distinct types of opt-out situations: opting out of the new Time-of-Day rate (which had been discussed earlier) and opting out of the advanced meter (physical equipment), the latter being the focus of this segment of the meeting.

The Board had previously established a $75 one-time fee and a $20 monthly fee for customers who choose to opt out of the advanced meter, which requires a separate meter and manual reading. Approximately 35 out of 8,500 deployed meters currently have opted-out. He then outlined three specific issues for the Board's clarification.

First Issue: Customers with Multiple Meters Located Next to Each Other

Mr. Bulger presented a scenario where a customer has two meters situated right next to each other, and they questioned why they should be charged the $20 monthly reading fee for *each* meter if both can be read simultaneously during a single truck roll. He explained that while the physical reading might be combined, the current policy charges per meter, accounting for administrative and system costs.

Mr. Leon suggested that the fee should ideally be related to the actual costs incurred by CMLP, implying an adjustment if reading two adjacent meters is indeed less expensive than reading meters at two separate addresses. Mr. Foulds countered, stating that the $20 truck roll fee was already set below the actual cost of manual meter reading, and other MLPs often charge considerably more. He emphasized that the Board had previously intended the $20 fee to be non-punitive while still contributing to cost recovery.

Ms. Scott further elaborated, confirming that the $20 fee is nowhere near the cost of a truck roll. She explained that the initial $20 fee was based on generalizations and assumptions about the number and geographical distribution of opt-out meters, making it complex to argue that reading two close meters automatically costs less.

Mr. Leon summarized the Board's choices as either maintaining the $20 per-meter charge (acknowledging it's already an under-recovery) or attempting to make an accommodation. Mr. Schaffner and Mr. Foulds both expressed concern that making accommodations would lead down a rabbit hole of scenarios and result in custom rates for many individual customers. They concluded that it would be best to stay the course and stick with the $20 per meter for now.

Second Issue: Customers with Multiple Meters Not Physically Next to Each Other

Mr. Bulger briefly mentioned a situation involving one customer with two separate meters that are not physically adjacent. This issue was quickly passed over, as the Board had already decided against making special accommodations for multiple meters, regardless of their proximity, to avoid creating custom rate scenarios.

Third Issue: Meter Replacement Refusal for Existing Meters

Mr. Bulger presented the challenge of a customer who requested an opt-out meter but insisted on retaining their existing, older meter, refusing to have it replaced with either a new AMI meter or a new non-RF opt-out meter.

Mr. Bulger outlined CMLP's concerns regarding this refusal, primarily focusing on safety and data integrity. He explained that the old drive-by reading system, including specialized field tools for remote programming and multiplier adjustments, is being decommissioned and transferred to the water department. If an old meter remains, CMLP would no longer maintain support for it, creating potential vulnerabilities where remote access tools could compromise the meter's integrity or inadvertently alter readings. For these reasons, CMLP requires customers to choose either a new non-RF opt-out meter or a smart meter.

Mr. Bulger reiterated that CMLP owns the meters and has broad authority from the Department of Public Utilities (DPU) to service, replace, and maintain them. He then proposed an escalation policy developed with legal counsel:

- An initial notification to the customer, stating they must replace their meter.
- A second, non-negotiable notice after 15 days of non-compliance.
- Escalation to the DPU for an administrative warrant, a legally binding document signed by a judge, confirming CMLP's right to access and replace the meter.
- He also mentioned that disconnection could be a last resort if the warrant cannot be executed and CMLP cannot reliably read or replace the meter, due to security and integrity concerns.

Mr. Foulds confirmed that CMLP had already engaged in direct discussions with this particular customer, who was still refusing access. All Board members found the proposed policy to be appropriate reasonable. Mr. Leon underscored that the meter is CMLP's property, and the utility must have the ability to access and replace it to ensure its effective future operation and the integrity of readings.

Mr. Bulger then requested a Board vote to formally accept the proposed policy.

Mr. Schaffner moved to accept the CMLP automatic meter reading and advanced metering infrastructure opt out policy as presented. Mr. Foulds seconded the motion, and with all members present in favor, the motion carried 4-0.

LIASION & PUBLIC COMMENTS (1:34:47)

- Brad Hubbard-Nelson, a member of the Climate Action Committee, mentioned that a group has been meeting monthly to discuss networked geothermal projects. They are looking at successful projects in Framingham and Dorchester and considering where geothermal could fit in Concord, specifically within areas labeled as "non-pipeline alternatives" by National Grid as part of the Gas System Enhancement Plan (GSEP). They are interested in making a presentation to the Light Board in the next couple of meetings. In the meantime, they plan to reach out to residents and businesses in the fall to gauge interest in a geothermal network or an air-source program in a neighborhood.
- Gail Hire spoke about opting out of analog meters and associated fees, appreciating Mr. Foulds' questions about monthly charges and concerns regarding fairness. She said it would be unfair to impose an additional opt-out fee for the time-of-use rates on customers with non-emitting analog meters, as they cannot access TOU rates. She urged the Board to consider adjusting the opt-out rate for these customers. She also mentioned a large tree that took down utility lines and three utility poles off Bedford Street, reminding the Board about CMLP's undergrounding fund.
- Pamela Dritt commented that all rates, especially time of day rates, need to incentivize behavior as well as cover costs. She believes that when Concord generates its own local green energy, it will become massively cheaper for everyone, advocating for faster investment in this area. She also argued against

buying Renewable Energy Certificates because it doesn't increase local green energy and wanted to focus on fairness for the long-term power supply to everyone, with special help programs for those who cannot afford increased costs. Further, Ms. Dritt proposed that residents installing solar and batteries should receive extremely high benefits to encourage more investment, as this makes power better and cheaper for all. She concluded that all-electric heat pump heating must be made cheaper than natural gas to achieve town-wide non-emitting clean energy, suggesting special rates for all-electric heat pump buildings.

ADJOURN (1:08:16)

Mr. Foulds moved to adjourn and enter executive session without the intent to return to regular session pursuant to the Commonwealth of Massachusetts Open Meeting Law Purpose for Exemption #10, to discuss trade secrets or confidential, competitively sensitive, or other proprietary information related to power supply contracts. Mr. Schaffner offered a second, and all three remaining members voted unanimously to adjourn the regular session meeting at 9:14AM. (Mr. Dalton had left the meeting at this point.)

Respectfully submitted,
Mr. Dalton, Clerk

Concord Municipal Light Plant Updates

September 10, 2025

Contents

Organization and Industry

- **Massachusetts Clean Energy Center Funds Clean Energy Projects**
  The Massachusetts Clean Energy Center (MassCEC) announced $3.6 million in funding for 20 clean energy companies and researchers across the state. This funding is part of a broader effort by the Healey-Driscoll Administration to support the state's clean energy transition and cement Massachusetts as a hub for climate innovation. More details can be found here: https://www.masscec.com/press/masscec-awards-36-million-advance-clean-energy-and-climatetech-innovation

- **NEPPA Holds Annual Conference in Burlington, Vermont**
  The New England Public Power Association (NEPPA) held its 2025 Annual Conference from August 17-20 at the Hotel Champlain in Burlington, Vermont. The event provided an opportunity for public power professionals from across New England to network, participate in educational sessions, and discuss key issues facing the industry. CMLP's Assistant Director of Engineering and Operations Joe Repoff attended the event.

- **National Grid and Eversource Announce Basic Service Rate Increase**
  National Grid customers in Massachusetts who are on the "Basic Service" electricity supply rate saw their bills increase starting August 1, 2025. The residential rate rose from 14.672 cents per kilowatt-hour (kWh) to 15.484 cents per kWh, an increase of approximately 5.53% for the supply portion of the bill. Eversource announced that its basic electric supply rate will increase from 13.2 cents per kilowatt hour to 14.8 cents. These increases are attributed to several factors, including rising wholesale electricity prices driven by global natural gas demand and market volatility, higher summer demand for electricity, and ongoing

investments in grid infrastructure.

- **MassDEP Releases Guidance on Energy Storage and EV Chargers**
  The Massachusetts Department of Environmental Protection (MassDEP) released guidance in August on the public health, safety, and environmental impacts of electric battery storage and electric vehicle (EV) chargers. The guidance, prepared in consultation with the Board of Fire, was sent to the Joint Committee on Environment and Natural Resources and the Joint Committee on Telecommunications, Utilities, and Energy. This initiative is part of a larger state effort to facilitate the development of an equitable, interconnected, and reliable EV charging network and to modernize the electric grid.

  You can find the guidance here: https://www.mass.gov/doc/guidance-on-public-health-safety-and-environmental-impacts-of-electric-battery-storage-and-electric-vehicle-chargers/download

- **DPU Ends Utility Subsidies for New Gas Hookups**
  In a significant move that aligns with the state's decarbonization goals, the Massachusetts Department of Public Utilities (DPU) issued a ruling in early August that ends the long-standing practice of electric and gas utilities socializing the cost of new gas line extensions. The new policy requires that new customers must now cover the upfront costs of new gas hookups, with limited exceptions for commercial and industrial users who can prove there is no technically feasible electric alternative. This decision is expected to increase the cost of connecting to the gas system, potentially incentivizing electrification and reducing the risk of stranded assets as the state transitions away from fossil fuels.

- **DOER Releases Final SMART 3.0 Program Regulations**
  The Massachusetts Department of Energy Resources (DOER) has filed the final regulations for its Solar Massachusetts Renewable Target (SMART) 3.0 Program. The new regulations, which will go into effect in September, provide key details on incentive rates, available capacity, and specific adders for various types of solar projects. Notably, the program will provide increased incentives for solar projects serving low-income customers and will make it more difficult for ground-mounted solar to be installed on sensitive land, such as protected habitats or areas with high carbon sequestration value. The program is designed to drive the next phase of solar deployment in Massachusetts while promoting responsible land use.

Energy Management

- Energy Management staff worked with ENE to make Drive & Save, our EV savings and comparison tool, more user friendly. We then ran a campaign in August publicizing its availability, to see if our customers use it to compare the lifetime cost of owning an EV to the lifetime cost of owning a similar gasoline vehicle. Over 100 customers responded to publicity in our August 1st e-newsletter by opening Drive & Save. We also placed quarter page ads in the Concord Bridge on August 1st and 8th, and sent out bill inserts and bill messages, urging Concordians to try this tool. ConcordCAN featured the Drive & Save tool in their September newsletter.
- We have also updated our commercial charging station rebate program to make it more user-friendly.
- Energy Management staff have compiled suggestions for consideration by CMLP's leadership and engineering staff for streamlining the solar and battery interconnection process. The suggestions include a draft design for a database that would:
    - Allow all staff to see the status details and the interaction history with the customer and installer for each project, improving our ability to hand off management of the interconnection application (IA) process when staff members are on vacation.
    - Allow customers to see the status of their requests for approval to install and to operate at any time.
    - Improve efficiency and customer communication by sending automated emails to customers at each interconnection application review milestone.
    - Contain a document repository that would allow customers to upload documents and review the documents that have been submitted to CMLP at any time. The repository would also allow CMLP staff to see and work with all of the documents submitted, improving our ability to hand off management of the IA process as needed.

- Staff is preparing updates to our solar net metering policy acknowledgement, website and solar explainer to reflect the upcoming changes to CMLP's net metering policy with the advent of time-of-day rates. The net metering policy affects the return on investment for solar installations, so we want customers who are exploring solar to be aware of the financial implications of the new policy.

Battery Storage and Solar Project Updates

- The middle school solar Invitation for Bids are due on September 10.
- CMLP and the Town Manager continue to work with a solar and battery developer to add more solar on the landfill and add a battery to both absorb excess solar as well as shave capacity and transmission peaks to save money for ratepayers.

Finance Updates

- Due to posting on the Town side long after the end of the fiscal year, CMLP staff need to go back and work on cash reconciliation for the audit. This should be the final step.

Engineering and Operations

- Worked onsite with SEL engineer to finalize dimensional and layouts of Substation panels for SCADA upgrade project
- Finalizing plans for replacing the existing transformer with a new transformer at the Town's Wastewater Treatment Plant. This requires extensive coordination between CMLP and the operations staff at the WWTP.
- Met with Integrity Data Solutions to discuss and prioritize MOBILETRAK inventory control and barcoding system to be installed, commissioned and implemented later this year
- Installed new conductors at the Concord Middle School athletic fields to supply electric power to the new irrigation system
- Met onsite with contractors and Corrections personnel at MCI-Concord to discuss the installation of a new service to power the Wastewater Treatment Plant, and retirement of some old services
- Coordinating with NECC (prison farm) personnel for the repowering of existing solar array. CMLP's understanding is that similar wattage panels will be installed, and that the total output will remain the same.
- Working with Eaton to procure relays with solar/battery power supplies to bolster AMI communications in areas of questionable strength and limited power supply
- Began retiring and removing the old EcoNet smart grid system
- Completed monthly NEPPA safety training on capacitors
- Met with SELCO to discuss their new building designs

Power Supply

- Finalized new rates to take effect in 2026 and provided bill impact studies
- Worked with customers to provide hourly usage and rate information to those curious about time-of-day rates
- Worked with Finance team on audit requests
- Attended a PURMA webinar regarding training for Commissioners/Directors on Employment Practices Liability insurance.
- Note: CMLP will be hosting a table at Ag Day focused on advertising the Connected Homes program.

Customer Service

- We are thrilled to announce that Jennifer Clougherty has joined CMLP as the new Customer Service manager. Prior to joining the CMLP team, Jennifer spent over 25 years leading customer support and operations teams at Monster.com.

- The team continues to work with Public Works to spin up the Stormwater and Solid Waste/Recycling programs and integration with the billing system.

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August 2025 – Broadband Updates

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 should you have any questions, concerns, or feedback.

Operations

- The AMS gateways have held steady so far this past month. We have been preparing spares and taking steps to increase the resilience and field-serviceability of the units. The older EcoOne network is being decommissioned, and the network team will assist with removing and recovering ONTs from these installations.
- The network team continues to prepare for the installation of the new XGS-PON equipment, which was received in late August. This month's maintenance will allow for the transfer to the new switches after we experienced some compatibility issues during the last attempt. Town switch firmware is being upgraded methodically at all sites.
- The biannual FCC broadband filing was completed for the period ending 6/30/2025 as has the Urban Rate Survey.
- The network team is supporting an effort to migrate to a new more secure VPN solution, and have also been supporting several software upgrades and migrations, including for a fuel tracking program.
- The whole Broadband team has been working on getting network access for the Peabody school to support Town department access.

Back-to-School Internet Tips for Families

As students across Massachusetts get ready to head back to school, having reliable internet at home can make a big difference in staying organized and successful throughout the year. Between online assignments, research, streaming educational videos, and even parent-teacher communication platforms, it's common for a household to have several devices competing for bandwidth at the same time.

Here are a few ways you can make sure your home internet is ready for the busy school season:

- Check your Wi-Fi placement.

Upcoming Maintenance

A maintenance window is currently scheduled from 4-6am on Wednesday, September 10, 2025. The impact on customers should be brief as new switching equipment is utilized. This will allow for the deployment of faster and more secure/resilient equipment.

Learn more on our maintenance page here:

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

    - Routers work best when they're placed in a central, elevated spot in your home—away from walls, cabinets, or basement corners. A well-placed router helps ensure stronger connections in every room.

- Restart your equipment.
    - Restarting your equipment periodically can help increase speeds. Make sure to keep your personal networking equipment up-to-date.

- Match your service tier to your household needs.
    - A family with two kids in school and parents working remotely may need more bandwidth than a single-user household. Our customer service team can walk you through what speed tier makes the most sense.

- Set parental controls or time limits if needed.
    - Many modern routers allow parents to manage device usage, making it easier to balance homework and downtime.

A little preparation now can prevent slowdowns or interruptions once the school year is in full swing. If you'd like us to help you review your current service or equipment, give us a call—we're happy to make sure your household is ready for a smooth back-to-school season.

Storm Season and Network Reliability

New England weather keeps all of us on our toes. From fall nor'easters to heavy winter snowstorms, it's no surprise that storm season can put stress on local infrastructure. Reliable internet is more important than ever, whether you're working from home, checking in with family, or just trying to stay entertained when the weather outside is rough.

As your community-owned broadband utility, we take network resiliency seriously. Here's how we prepare and respond during storm season:

- Proactive system monitoring. Our crews use monitoring tools that alert us to issues on the network in real time, often before customers notice a problem.

- Local response teams. Because we're based right here in the community, our technicians don't have to wait for direction from out of state—they're ready to act quickly when weather causes damage or interruptions.

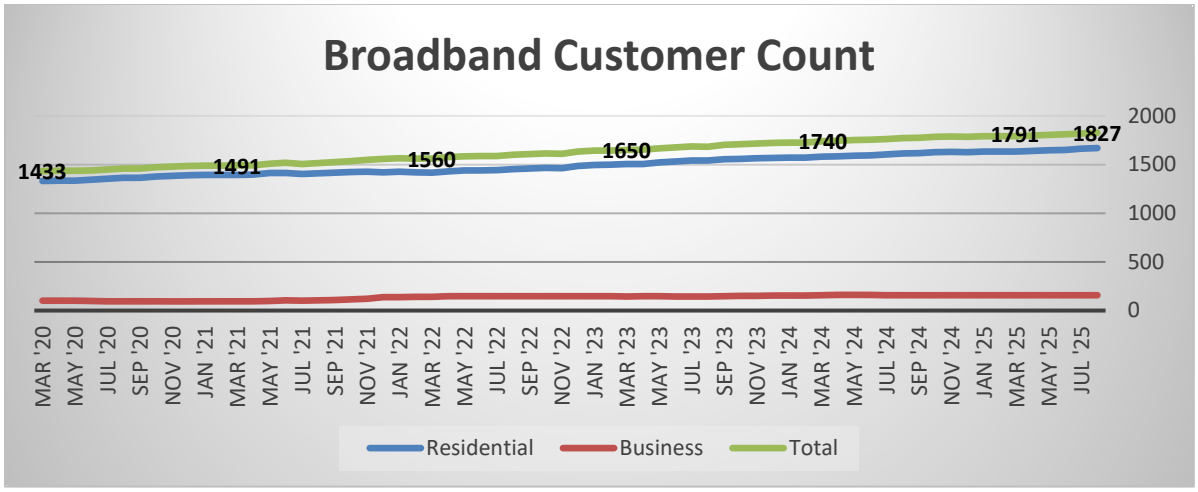
- Coordination with the electric utility. In severe storms, power outages often need to be resolved before internet service can be restored. We coordinate closely with our electric utility partners to ensure a safe and efficient restoration process.

- Regular system upgrades. Investing in stronger, more resilient infrastructure—like underground fiber where possible—helps us minimize the impact of future storms.

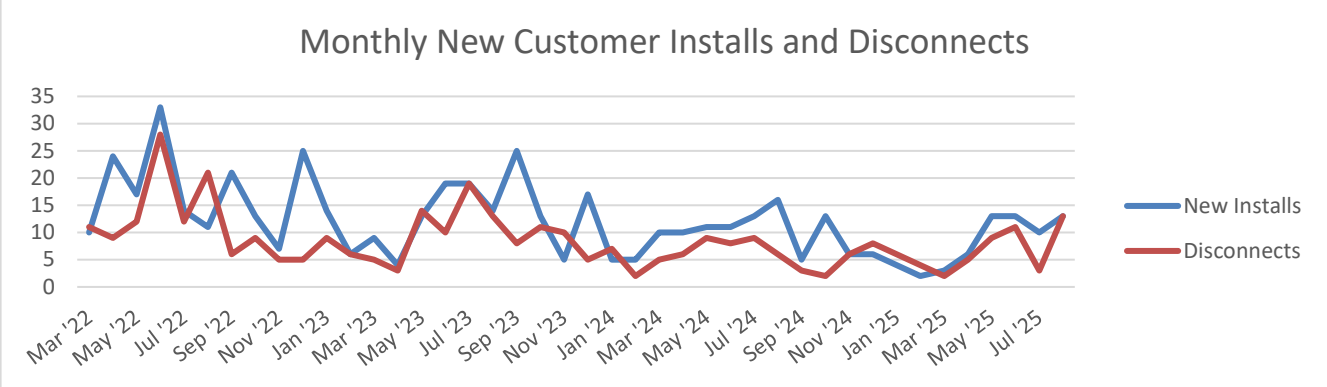
When bad weather hits, you can count on timely updates from us through our website, email alerts, and social media channels. Our crews live and work in this community, and we're committed to restoring service for our neighbors as quickly and safely as possible.

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

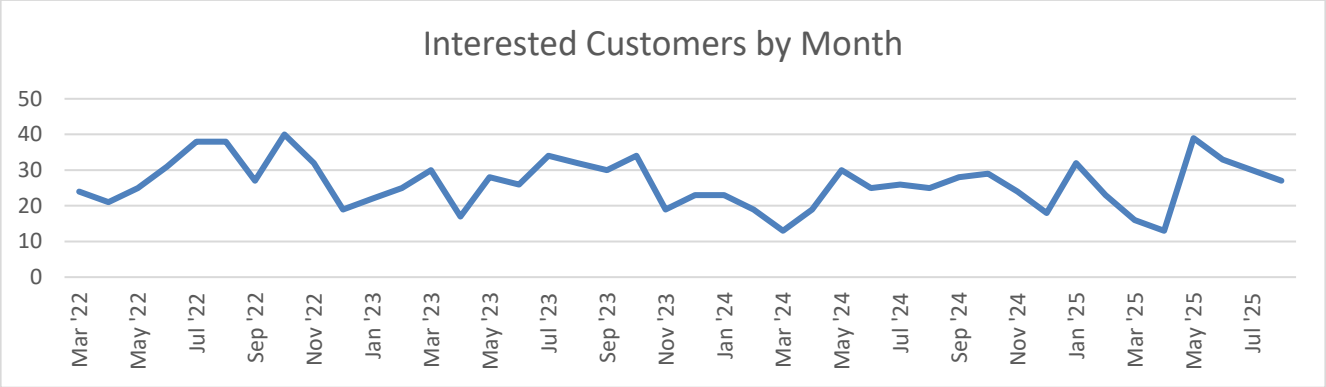
Monthly Metrics and Business Data



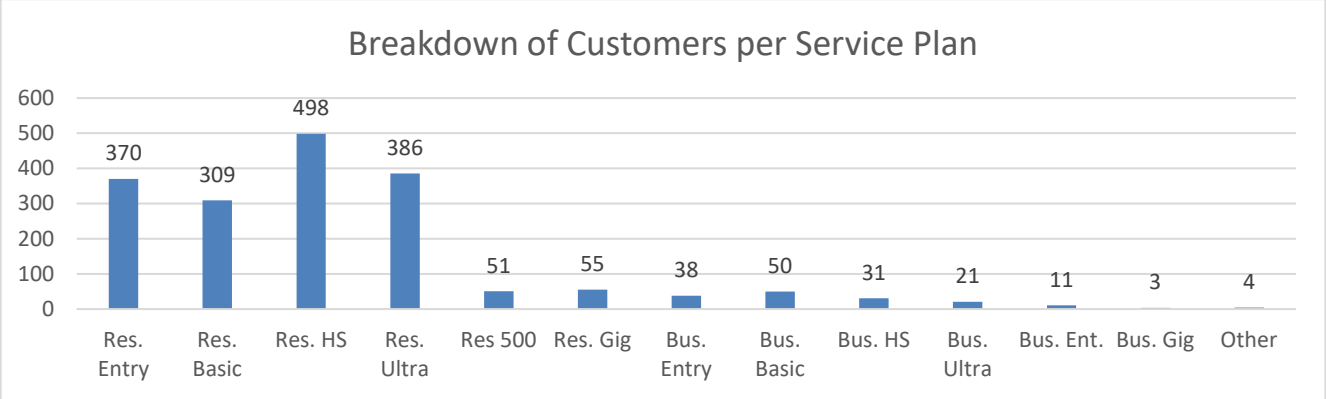
(*Customer count: March 2020 – Present*)



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

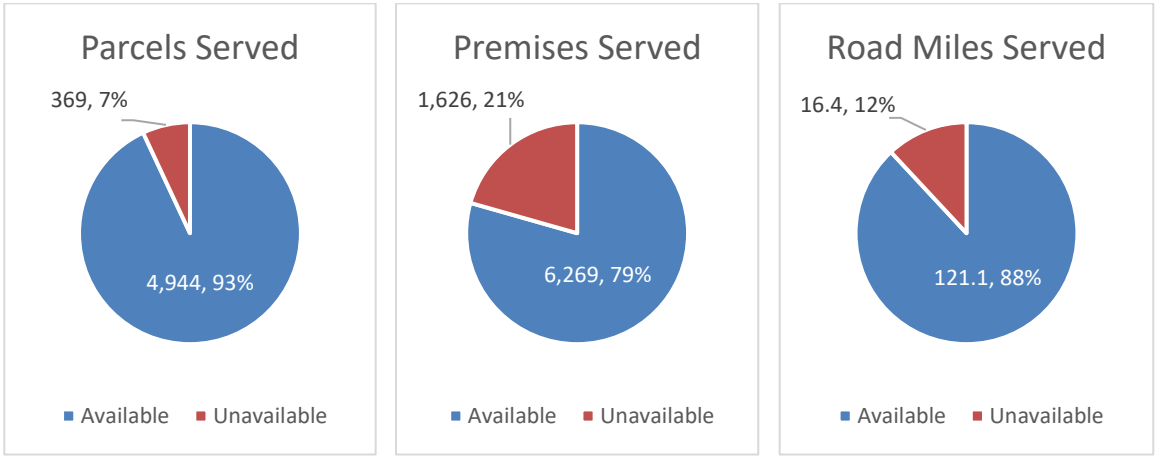


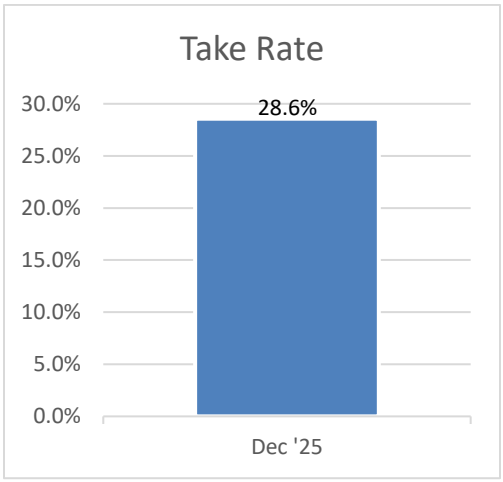
(*This is the number of individuals who submit the Broadband interest form, whether they are in the current service area or not.*)



(*This is the number of each customer on our different service plans as of 8/31/2025.)*

Other Metrics





(As of 2/15/2025)

Appendix

Fiber Broadband Completion Task Force's Report Goals

Goal	Type	Priority	Responsible Party	Additional Info.
Policies (p.39)				
• Universal Access	Policy	Highest	Select Board/Town Meeting	
• Expansion outside current territory	Policy	Low	Select Board/Town Meeting	Conversations happening
• Support Economic Vitality, Sustainability, Equity & Inclusion	Policy	High	Select Board/Light Board/TM Economic Development	Rate subsidy planned
• Affordable Housing	Policy	Medium	Select Board/Housing Groups	Rate subsidy planned; working on Concord Housing Authority properties
• Public Safety	Policy	Medium	Select Board/Town Manager	
• Education	Policy	Medium	Select Board/School Dept.	
• Government Access (PEG)	Policy	Medium	Select Board/PAAC	
Recommended metrics for tracking (p.41)				
• Parcels served	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Premises served	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Road miles served	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Subscribers	Metric	High	Town Staff/Light Board	Complete; will report monthly
• Take rate	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Churn	Metric	High	Town Staff/Light Board	Complete; included in monthly report
• Installations	Metric	Highest	Town Staff/Light Board	Complete; will report monthly
Governance (p.39)				
• Track progress against completion	Metric	Highest	Light Board/Town Staff	Working on this
• Rate of return policy	Policy	High	Light Board/Town Staff	Working on this
• Financial goals with regular reporting	Policy	High	Light Board/FinCom	Working on this
• Retained earnings and reserve policy	Policy	High	Light Board/FinCom	Working on this

Goal	Type	Priority	Responsible Party	Additional Info.
Strategic Planning Goals (p.43)				
• Marketing and growth	Metric	High	Light Board/Town Staff	Working on this
• Business return	Policy	High	Light Board/Town Staff	Working on this
Budgeting Process for Fiber Expansion (p.41)				
• 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
Capital Planning Process (p.42)				
• 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
Construction and Logistics (p.42)				
• 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 RATE SCHEDULES

RATE R TOD
RESIDENTIAL TIME OF DAY RATE

Mass DPU No. 501 — Effective: January 1, 2026
Replaces Mass DPU No. 497

The Concord Municipal Light Plant ("**CMLP**") shall charge and collect for residential service on the basis of this rate schedule. The Power Cost Adjustment Clause, the NYPA Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System"**)

Applicability
This rate schedule is applicable to all electric service required by the Customer exclusively for domestic purposes for individual (single family) private residences, condominium units, condominium common area facilities and individually metered apartment units.

This rate schedule is not applicable to businesses, licensed boarding or rooming houses, educational institutions or facilities, apartment houses including the common facility requirements, or the common facility requirements of residences also used for business purposes, evidenced by any form of advertising, which will be served under the appropriate general service rate schedule.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, single phase, at CMLP's option of the standard voltages available from the CMLP System. CMLP may, at its option, require three-phase service when individual motors rated at 5.0 horsepower or larger are connected to the CMLP System. Standby or resale service is not permitted under this rate schedule.

Monthly Rate

Meter Charge	$20.00 per month

STANDARD	**Jan-Feb; May-Sep; Dec**
On-Peak	$0.30315 per kWh
Off-Peak	$0.20432 per kWh
Super Off-Peak	$0.20117 per kWh

SHOULDER	**Mar-Apr; Oct-Nov**
On-Peak	$0.25379 per kWh
Off-Peak	$0.20230 per kWh
Super Off-Peak	$0.19644 per kWh

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The above rate per kWh will be adjusted plus or minus in accordance with the formulae specified in the Power Cost Adjustment Clause and the NYPA Power Cost Adjustment Clause. The amount computed at the Monthly Rate shall be subject to taxes, assessments or surcharges imposed by any governmental authority which is assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by CMLP.

Billing Periods

Peak	Monday through Friday	3 p.m. to 7 p.m.
Off-Peak	Monday through Sunday	5 a.m. to 3 p.m. and 7 p.m. to 1 a.m.
Super Off-Peak	Monday through Sunday	1 a.m. to 5 a.m.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge and all applicable rate adjustments.

Terms
The Monthly Rates are net and bills are due on presentation. Bills will be rendered monthly.

Effective Date
This rate schedule is effective for all consumption on or after the effective date shown above.

Interruption of Service
CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RATE OPT OUT
RESIDENTIAL SERVICE

Mass DPU No. 502	Effective: January 1, 2026
Replaces Mass DPU No. 496	

The Concord Municipal Light Plant ("**CMLP**") shall charge and collect for residential service on the basis of this rate schedule. The Power Cost Adjustment Clause, the NYPA Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all electric service required by the Customer exclusively for domestic purposes for individual (single family) private residences, condominium units, condominium common area facilities and individually metered apartment units.

This rate schedule is not applicable to businesses, licensed boarding or rooming houses, educational institutions or facilities, apartment houses including the common facility requirements, or the common facility requirements of residences also used for business purposes, evidenced by any form of advertising, which will be served under the appropriate general service rate schedule.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, single phase, at CMLP's option of the standard voltages available from the CMLP System. CMLP may, at its option, require three-phase service when individual motors rated at 5.0 horsepower or larger are connected to the CMLP System. Standby or resale service is not permitted under this rate schedule.

Monthly Rate

Meter Charge (Single Phase)	$20.00 per month
Capacity and Transmission Charge:	
First 657 kWhs	$0.03931 per kWh
Next 178 kWhs	$0.05240 per kWh
All in excess of 835 kWhs	$0.07757 per kWh
Distribution Charge	$0.09183 per kWh
Energy Charge	$0.07903 per kWh

The above rates per kWh will be adjusted plus or minus in accordance with the formulae specified in the Power Cost Adjustment Clause and the NYPA Power Cost Adjustment Clause. The amount computed at the Monthly Rate shall be subject to taxes, assessments or surcharges imposed by any governmental authority which is assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by CMLP.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge and all applicable rate adjustments.

Terms
The Monthly Rates are net, and bills are due on presentation. Bills will be rendered monthly.

Effective Date
This rate schedule is effective for all consumption on or after the effective date shown above.

Interruption of Service
CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RESIDENTIAL SERVICE RIDER– NET BILLING RATE

Mass DPU No. 513	Effective: January 1, 2026
Replaces Mass DPU No 472	

The Concord Municipal Light Plant (the "**CMLP**") shall pay for energy delivered to the CMLP system from eligible, small scale generating sources including: solar, wind, and micro-turbine units which simultaneously generate electricity and recover heat.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all small-scale generation facilities with a net output of less than one hundred sixty-seven (167) kilowatts of alternating current capacity as determined by CMLP.

This rider is only available for residential service.

Rates and Credits
All kilowatt hours delivered by CMLP to the Customer under this rate will be billed at the Residential Time of Day Rate according to the hours in which the energy is delivered. All kilowatt hours delivered by the Customer to CMLP under this rate will be credited the appropriate Residential Time of Day Rate minus the rate charged for Distribution shown in rate tariff OPT OUT.

Rate charged for all energy delivered by CMLP to the customer

STANDARD	**Jan-Feb; May-Sep; Dec**
On-Peak	$0.30315 per kWh
Off-Peak	$0.20432 per kWh
Super Off-Peak	$0.20117 per kWh
SHOULDER	**Mar-Apr; Oct-Nov**
On-Peak	$0.25379 per kWh
Off-Peak	$0.20230 per kWh
Super Off-Peak	$0.19644 per kWh

Rate credited for all energy delivered by the customer to CMLP

STANDARD	**Jan-Feb; May-Sep; Dec**
On-Peak	$0.21132 per kWh
Off-Peak	$0.11249 per kWh
Super Off-Peak	$0.10934 per kWh
SHOULDER	**Mar-Apr; Oct-Nov**
On-Peak	$0.16196 per kWh
Off-Peak	$0.11047 per kWh
Super Off-Peak	$0.10461 per kWh

Billing Periods

Peak	Monday through Friday	3 p.m. to 7 p.m.

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Off-Peak	Monday through Sunday	5 a.m. to 3 p.m. and 7 p.m. to 1 a.m.
Super Off-Peak	Monday through Sunday	1 a.m. to 5 a.m.

Terms
Credits for energy delivered by the Customer to CMLP will be applied to the customer's account each month.

Effective Date
The Customer shall notify CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RATE R-EV SM
RESIDENTIAL SERVICE – ELECTRIC VEHICLE CHARGING SEPARATE METER

Mass DPU No. 509	Effective: January 1, 2026
Replaces Mass DPU No. 500	

The Electric Vehicle Charging Separate Meter rate (R-EV SM) is an optional residential rate for customers with a separate meter installed for the sole purpose of charging one or more electric vehicles. Customers choosing Rate R-EV SM will pay the Time of Day charges in Rate R TOD, but will pay a lower meter fee for the second meter. The Power Cost Adjustment Clause, the NYPA Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all electric service required by individual (single family) private residences, condominium units, condominium common area facilities and individually metered apartment units exclusively for electric vehicle charging for domestic purposes, measured using a separate, secondary meter.

This rate schedule is not applicable to businesses, licensed boarding or rooming houses, fraternity or sorority houses advertised as such, educational institutions or facilities, apartment houses including the common facility requirements, or the common facility requirements of residences also used for business purposes, evidenced by any form of advertising, which will be served under the appropriate general service rate schedule.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, single phase, at CMLP's option of the standard voltages available from the CMLP System. CMLP may, at its option, require three-phase service when individual motors rated at 5.0 horsepower or larger are connected to the CMLP System. Standby or resale service is not permitted under this rate schedule.

Monthly Rate

Meter Charge	$9.00 per month
STANDARD	**Jan-Feb; May-Sep; Dec**
On-Peak	$0.30315 per kWh
Off-Peak	$0.20432 per kWh
Super Off-Peak	$0.20117 per kWh
SHOULDER	**Mar-Apr; Oct-Nov**
On-Peak	$0.25379 per kWh
Off-Peak	$0.20230 per kWh

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Super Off-Peak $0.19644 per kWh

The above rates per kWh will be adjusted plus or minus in accordance with the formulae specified in the Power Cost Adjustment Clause and the NYPA Power Cost Adjustment Clause. The amount computed at the Monthly Rate shall be subject to taxes, assessments or surcharges imposed by any governmental authority which is assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by CMLP.

Billing Periods

Peak	Monday through Friday	3 p.m. to 7 p.m.
Off-Peak	Monday through Sunday	5 a.m. to 3 p.m. and 7 p.m. to 1 a.m.
Super Off-Peak	Monday through Sunday	1 a.m. to 5 a.m.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge and all applicable rate adjustments.

Terms
The Monthly Rates are net, and bills are due on presentation. Bills will be rendered monthly.

Effective Date
This rate schedule is effective for all consumption on or after the effective date shown above.

Interruption of Service
CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

CONTROLLED WATER HEATING CREDIT RIDER

Mass DPU No. 510	Effective: January 1, 2026
Replaces Mass DPU No. 488	

Applicability
This rate schedule is applicable to Residential and General Service electric service required by the Customer, where the Customer uses electricity as the sole means of heating water for domestic purposes. The only supplemental means of heating water permitted under this rate is solar.

Service to electric water heaters for domestic purposes under this rate rider will be available for a minimum of 18 hours each day.

The electric water heating equipment installed must be approved and controlled by the CMLP and used exclusively for domestic purposes.

Discount Program Rider
A credit of $7.31 shall be applied for each month the Customer meets the requirements listed in the Applicability section above.

Term of Contract
Credits under this rider are subject to termination at any time upon the CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RATE G-1
SMALL GENERAL SERVICE

Mass DPU No. 503	Effective: January 1, 2026
Replaces Mass DPU No. 491	

The Concord Municipal Light Plant (the "**CMLP**") shall charge and collect for small general service on the basis of this rate schedule. The Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all electric service required by commercial and municipal customers (the “Customer”) for lighting, power and any other purpose, other than residential service as defined in Rate R Schedules, where the Customer's maximum metered demand is less than 20.0 k W. If the Customer's monthly metered energy exceeds 4,000 kilowatt-hours for four consecutive months, the CMLP may install demand metering equipment. If the maximum metered demand is 20.0 kW or greater for any two months during any twelve month period, the CMLP will transfer the Customer to the then applicable general service rate schedule.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, single phase, at the CMLP's option of the standard voltages available from the CMLP System. The CMLP may, at its option, require three-phase service when individual motors rated at 5.0 horsepower or larger are connected to the CMLP System. Standby or resale service is not permitted under this rate schedule. Customers receiving three phase service will be assessed three times the single phase Meter Charge.

Monthly Rate

Meter Charge (Single Phase)	$24.00 per month
Customers requiring three phase service shall pay a one-time fee of $200 to cover additional meter costs	
Capacity and Transmission Charge:	$0.05353 per kWh
Distribution Charge	$0.08302 per kWh
Energy Charge	$0.06514 per kWh

The above energy rate will be adjusted plus or minus in accordance with the formula specified in the Power Cost Adjustment Clause. The amount computed at the Monthly Rate shall be subject to taxes, assessments or surcharges imposed by any governmental authority which is assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by the CMLP.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge and all applicable rate adjustments.

Terms
The Monthly Rates are net and bills are due on presentation. Bills will be rendered monthly.

Effective Date

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This rate schedule is effective for all consumption on or after the effective date shown above.

Interruption of Service
The CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of the CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of the CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify the CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by the CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon the CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RATE G-2
MEDIUM GENERAL SERVICE

Mass DPU No. 504	Effective: January 1, 2026
Replaces Mass DPU No. 492	

The Concord Municipal Light Plant (the "**CMLP**") shall charge and collect for medium general service on the basis of this rate schedule. The Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all electric service required by commercial and municipal customers (the "Customer") for lighting, power and any other purpose, other than residential service, where the Customer's maximum metered demand is equal to or greater than 20 kW, but less than 200 kW, for any two months during any twelve month period.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, of the standard voltages available from the CMLP System. Standby or resale service is not permitted under this rate schedule.

Monthly Rate

Meter Charge	$90.00 per month
Demand Rate	$10.56 per billing kW
Capacity and Transmission Charge	$0.04554 per kWh
Distribution Charge	$0.07417 per kWh
Energy Charge	$0.06370 per kWh

The above energy rate will be adjusted plus or minus in accordance with the formula specified in the Power Cost Adjustment Clause. The amount computed at the Monthly Rate shall be subject to taxes, assessments or surcharges imposed by any governmental authority which is assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by the CMLP.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge the monthly demand charge for the minimum demand and all applicable rate adjustments.

Determination of Billing Demand
The monthly Billing Demand shall be the greater of:

a) the highest metered kilowatt demand established during any 15 minute interval during the month;
b) 95% of the greatest metered or calculated kVA during the month; or
c) 20 kW.

Power Factor Adjustment

The monthly metered kilowatt demand may be adjusted to an equivalent 95.0% lagging power factor for the purpose of establishing the monthly Billing Demand when the power factor measured at the point of delivery to the Customer is determined to be less than 95.0%. Such adjustment may be deferred for six (6) months at a new point of delivery to allow for corrective action by the Customer.

Terms
The Monthly Rates are net and bills are due on presentation. Bills will be rendered monthly.

Effective Date
This rate schedule is effective for all consumption on or after the effective date shown above.

Interruption of Service
The CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of the CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of the CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify the CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by the CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon the CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service. Any Customer, whose service has been changed from Small General Service to this rate schedule at the Customer's request, will be required to remain on this rate schedule for a minimum period of 12 months.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RATE G-3
LARGE GENERAL SERVICE

Mass DPU No. 506 Effective: January 1, 2026
Replaces Mass DPU No.494

The Concord Municipal Light Plant (the "**CMLP**") shall charge and collect for large general service on the basis of this rate schedule. The Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all electric service required by commercial and municipal customers (the "Customer") for lighting, power and any other purpose, other than residential service, where the Customer's maximum metered on-peak kilowatt demand is equal to or greater than 200 kW at a single metered location. If the metered demand does not exceed 200 kW for a one-year period, the Customer may request assignment to the Medium General Service rate schedule.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, three phase, of the standard voltages available from the CMLP System. Standby or resale service is not permitted under this rate schedule.

Monthly Rate

Meter Charge	$600 per month
Demand Rate	$9.57 per billing kW
Transmission and Capacity Charge	$0.03645 per kWh
Distribution Charge	$0.07011 per kWh
Energy Rate	$0.06200 per kWh

The above energy rate will be adjusted plus or minus in accordance with the formula specified in the Power Cost Adjustment Clause. The amount computed at the Monthly Rate shall be subject to taxes, assessments or surcharges imposed by any governmental authority which are assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by the CMLP.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge, the monthly demand charge for the minimum demand and all applicable rate adjustments.

Terms
The Monthly Rates are net and bills are due on presentation. Bills will be rendered monthly.

Effective Date
This rate schedule is effective for all consumption on or after the effective date shown above.

DRAFT

Determination of Billing Demand:
The monthly Billing Demand shall be the greater of:

a) the highest metered kilowatt demand established during any 15 minute interval during the month;

b) 95% of the greatest metered or calculated kVA during the month; or

c) 200 kW

When welding equipment is installed, the excess demand placed on the CMLP system to supply this welding load may be added to the Customer's measured demand.

Power Factor Adjustment
The monthly metered kilowatt demand will be adjusted to an equivalent 95.0% lagging power factor for the purpose of establishing the monthly Billing demand when the power factor measured at the point of delivery to the Customer is determined to be less than 95.0%. Such adjustment may be deferred for six (6) months at a new point of delivery to allow for corrective action by the Customer.

Primary Service Adjustment
Where service is metered at primary voltage, a discount of two (2) percent of the demand and energy charges (after discount for equipment ownership and exclusive of the purchased power adjustment charge) will be allowed.

Transformer Ownership
If the Customer furnishes, installs, owns and maintains at the Customer's expense, all protective devices, transformers and other equipment required for primary voltage service as specified by CMLP, the monthly demand charge will be reduced by $0.12 per kilowatt of billing demand.

Interruption of Service
The CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of the CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of the CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify the CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by the CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon the CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

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CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

RATE G-4
GENERAL SERVICE – ELECTRIC VEHICLE CHARGING

Mass DPU No. 507 Effective: January 1, 2026
Replaces Mass DPU No. 487

The Concord Municipal Light Plant ("**CMLP**") shall charge and collect for general service on the basis of this rate schedule. The Purchased Power Cost Adjustment Clause, the Underground Utilities Charge and the CMLP Rules and Regulations are incorporated by reference as a part of this rate schedule.

Availability
This rate schedule is available throughout the entire territory served by the CMLP Electric System (the "**CMLP System**").

Applicability
This rate schedule is applicable to all electric vehicle charging service required by a Customer already taking service under a General Service tariff and offered by CMLP. The electrical connection of any equipment installed so as to use energy under this rate must be inspected and approved by CMLP.

This rate schedule is only available for general service.

Character of Service
Service under this rate schedule shall be alternating current, 60 Hertz, single phase, at CMLP's option of the standard voltages available from the CMLP System.

A second, separate meter will be installed by CMLP which will record the usage of the electric vehicle charging system. Use recorded on this meter will be billed at the rate indicated below.

Monthly Rate

Meter Charge	none	per month
Demand Rate	$4.00	per billing kW
STANDARD	**Jan-Feb; May-Sep; Dec**	
On-Peak	$0.47985	per kWh
Off-Peak	$0.18336	per kWh
Super Off-Peak	$0.17390	per kWh
SHOULDER	**Mar-Apr; Oct-Nov**	
On-Peak	$0.33178	per kWh
Off-Peak	$0.17730	per kWh
Super Off-Peak	$0.15971	per kWh

The above rate per kWh will be adjusted plus or minus in accordance with the formula specified in the Purchased Power Cost Adjustment Clause. The amount computed at the Monthly Rate

shall be subject to taxes, assessments or surcharges imposed by any governmental authority which is assessed on the basis of revenues from electric service or volumes of electricity purchased or sold by CMLP.

Billing Periods

Peak	Monday through Friday	3 p.m. to 7 p.m.
Off-Peak	Monday through Sunday	5 a.m. to 3 p.m. and 7 p.m. to 1 a.m.
Super Off-Peak	Monday through Sunday	1 a.m. to 5 a.m.

Minimum Charge
The monthly minimum charge shall be the sum of the Meter Charge, the monthly demand charge, and all applicable rate adjustments.

Terms
The Monthly Rates are net, and bills are due on presentation. Bills will be rendered monthly.

Effective Date
This rate schedule is effective for all consumption on or after the effective date shown above.

Determination of Billing Demand:
The monthly Billing Demand shall be the greater of:

a) the highest metered kilowatt demand established during any 15-minute interval during the month; or

b) 95% of the greatest metered or calculated kVA during the month

Power Factor Adjustment
The monthly metered kilowatt demand will be adjusted to an equivalent 95.0% lagging power factor for the purpose of establishing the monthly Billing demand when the power factor measured at the point of delivery to the Customer is determined to be less than 95.0%. Such adjustment may be deferred for six (6) months at a new point of delivery to allow for corrective action by the Customer.

Interruption of Service
CMLP will make reasonable provisions to assure satisfactory and continuous service, but does not guarantee a continuous supply of electric power and energy from the CMLP System facilities and shall not be liable for damage occasioned by interruptions of service or failure to commence delivery caused by acts of God, or the public enemy, or for any cause reasonably beyond the control of CMLP, including, but not limited to, the failure or breakdown of facilities, floods, fire, strikes, or actions or orders of any agency having jurisdiction in the premises, or for interruptions which are necessary for inspection, repair, or changes in the equipment and facilities of CMLP or the bulk power supplier(s) to the CMLP System.

The Customer shall notify CMLP immediately of any defects, troubles or accident which may in any way affect the delivery of electric service by CMLP from the CMLP System.

Term of Contract
Service under this rate schedule is subject to termination at any time upon CMLP's receipt of written notice from the Customer, subject to the provisions of the Rules and Regulations for Electric Service.

DRAFT

CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC RATE SCHEDULES

POWER COST ADJUSTMENT CLAUSE
Rate Schedule PCA

Mass DPU No. 511 Effective: January 1, 2026
Replaces Mass DPU No. 495

The Power Cost Adjustment calculated pursuant to this rate schedule is applicable to all energy delivered by the Concord Municipal Light Plant ("**CMLP**"), other than the energy supplied for municipal street lighting service, and private area lighting service. The prices for the above energy assume a base cost for power supply including expenditures for Renewable Energy Certificates of $0.12969 per kWh. Revenue adjustments are made through the PCA factor to reflect the difference between the actual cost of power supply and the base cost. The PCA factor is applied, as required, in order to equate actual power supply costs with revenues collected through the base rate while maintaining a reserve balance to cover short term power supply costs fluctuations.

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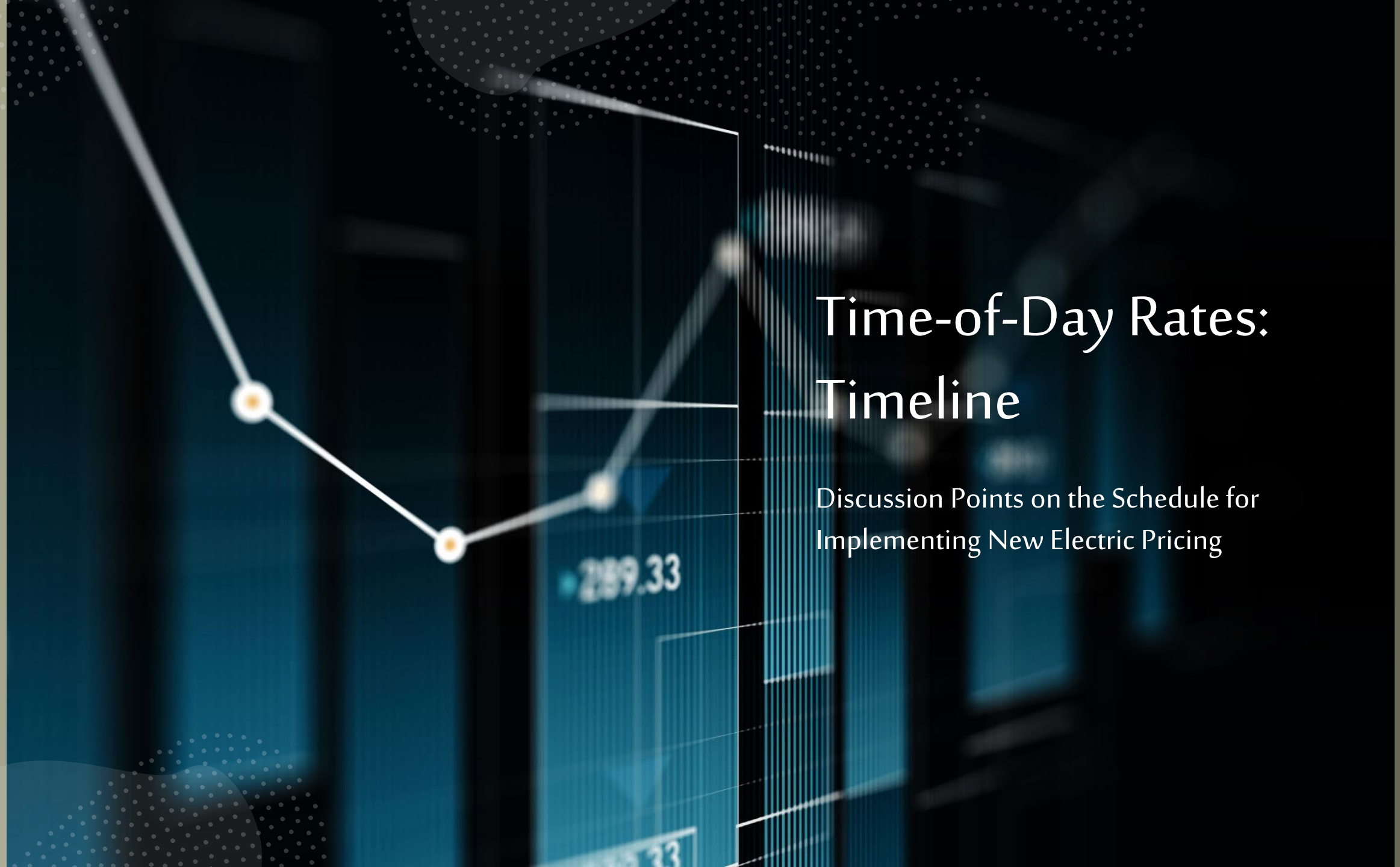


Time-of-Day Rates: Timeline

Discussion Points on the Schedule for Implementing New Electric Pricing

Agenda Items

- Overview of Time-of-Day Electric Rates
- Customer Outreach and Education
- Meter Data Management System Integration
- Bill Print Configuration
- Final Preparations and Go-Live Readiness

Definition and Benefits of Time-of-Day Rates

Understanding Time-of-Day Rates

Time-of-day rates vary based on electricity demand at different times, encouraging consumers to use energy during off-peak hours.

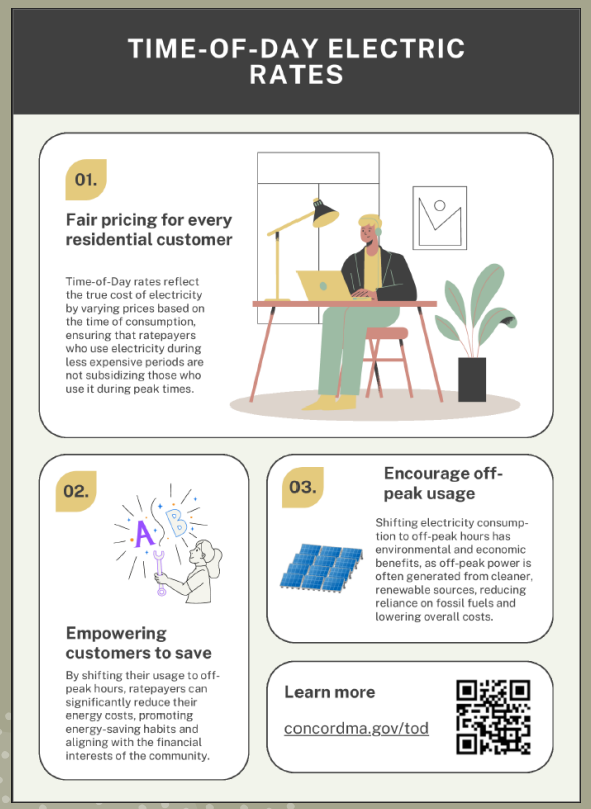
Benefits to Consumers

One major benefit is fairer and lower energy costs for consumers, as they can shift usage to cheaper off-peak times.

Environmental Impact

Time-of-day rates contribute to environmental benefits by promoting a more balanced energy grid and reducing peak demand.

Remaining Steps: Customer Outreach and Education



Customer marketing needs:

- Email and social campaign
- Direct mail or bill inserts
- Tools and Calculators
- Landing pages with information
- Interviews and videos
- Presentations
- Internal team training

Meter Data Management System Integration

Data Integration Needs

- We need to address any coverage or data gaps
- Meter data is fed into the MDM
- Bill calculations need to be tested and proofed
- The process of building rates normally takes about 3 weeks; TOD will likely take twice that.

Bill Print Configuration

Billing needs:

- Email and social campaign
- Direct mail or bill inserts
- Tools and Calculators
- Landing pages with information
- Interviews and videos
- Presentations
- Internal team training

Risks

- We have 3.5 months prior to go-live; our messaging goal originally was closer to 6 months.
- Stormwater & Solid Waste/Recycling billing integration for Customer Service, billing, and bill print.
- We are relying on a new marketing vendor.
- NISC bill print updates typically take 6 months to perfect.
- Our meter system has some known issues.
- Staff transitions on onboarding
- Miscommunicating go-live can break trust

Rolling Out a Pilot Program Before Full Launch

Real-World Testing

A pilot program enables real-world testing to evaluate new rates in a controlled environment and gather valuable feedback.

Gathering Insights

Insights gathered during the pilot phase are crucial for identifying potential improvements and adjustments before the full rollout.

Fine-Tuning the Process

The pilot program provides an opportunity to fine-tune processes based on actual user experiences and outcomes.

Proposed Timeline (1/1/2026 Go-live)

September	October	November	December
Communicate to Marketing firm our go-live date	Start 90-day campaign; include bill inserts	Start 60-day campaign; include bill inserts	Start 30-day campaign; include bill inserts
Vet marketing materials and planned schedule	Additional community outreach	Additional community outreach	Additional community outreach
Training materials preparation	Internal staff training	Internal staff training	After-hours call center training
Finalize bill print work (while Stormwater/Solid Waste begins)	Bill print design	Bill print design/testing	Final bill print testing
Documenting meter gaps	Addressing remaining communication issues	Install and test communication equip.	

Proposed Timeline (4/1/2026 Go-live)

September	October	November	December
Communicate to Marketing firm our go-live date	Familiarize with content library	Build landing pages and integrations	Consolidate lists of target audience
Vet marketing materials and planned schedule	Work on bill print explainer/calculator	Work on bill print explainer/calculator	Additional community outreach
Training materials preparation	Internal Staff focus on Stormwater/SWR	Internal Staff focus on Stormwater/SWR	Internal staff training
Finalize bill print work (while Stormwater/Solid Waste begins)	Bill print design	Bill print design	Bill print design
Documenting meter gaps	Addressing remaining communication issues	Addressing remaining communication issues	

Proposed Timeline (4/1/2026 Go-live con't)

January (2026)	February	March	April 1, 2026
Start 90-day campaign; include bill inserts	Start 60-day campaign; include bill inserts	Start 30-day campaign; include bill inserts	Go-live!
Publicize tools	Additional community outreach	Additional community outreach	
Internal staff training	Internal staff training	After-hours call center training	
Bill print testing	Bill print pilot	Final bill print testing	
Install and test communication equip.	Prove all data availability		

Final Preparations and Go-Live Readiness

Conclusion

Customer Education

Educating customers about new time-of-day rates is essential for a successful transition and maximizing benefits.

System Integration

Ensuring seamless integration of systems is critical for implementing new electric rates effectively and efficiently.

Thorough Testing

Conducting thorough testing before launching is vital to identify and resolve any potential issues that may arise.

Networked Geothermal and the Concord Municipal Light Plant

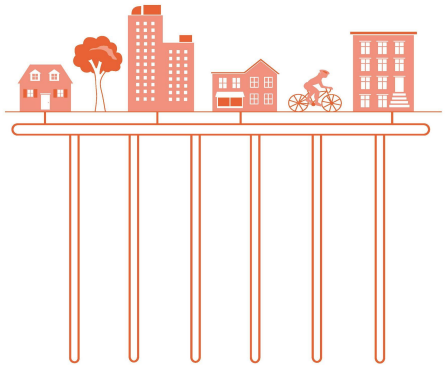
Presentation for the CMLP Light Board
September 10, 2025

———————————————

Brad Hubbard-Nelson
Concord Climate Action Committee

Networked Geothermal (a.k.a. Thermal Energy Networks)

- This concept for district heating and cooling has been pioneered and promoted by the nonprofit organization HEET (see material on their website & also CESA webinar)
- Instead of providing gas to buildings, a utility could provide a thermal network, a pipe from which heat can be extracted or inserted by each building with a geothermal (ground-source) heat pump.
- The network includes a number of wells (300-500’ depth) with the capacity to heat and cool all the buildings at the coldest and hottest temperatures expected.
- Buildings benefit from the very high efficiency of geothermal that is independent of outdoor temperature (unlike ASHP).
- Utility benefits from providing a new service instead of gas.

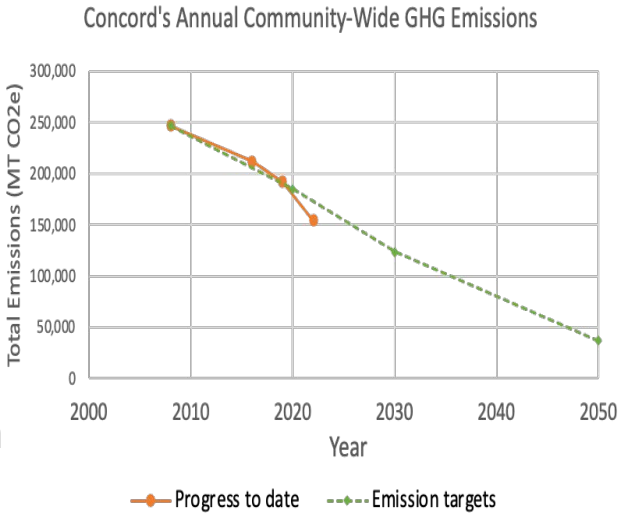


Motivation: Climate Action Perspective

Concord has adopted a GHG emissions reduction goal of 85% by 2050 to address the climate emergency.

- Buildings are the largest sector of Concord's GHG emissions, particularly heating.
- To meet our goals, all buildings will need to be *electrified* with heat pumps in the next 25 years.
- Customer adoption has been slow, as retrofitting individual houses with heat pumps is generally challenging and expensive.
- District heating and cooling with Networked Geothermal can accelerate adoption on a neighborhood basis through:
  - Streamlined procurement,
  - Higher system efficiency (COP) = low operating cost,
  - Economics of scale,
  - Capital costs reduced up-front and spread over time,
  - Longer-term financing

District heating & cooling with Networked Geothermal is a promising and necessary solution to meet our climate goals.



Concord has made good progress! Further reductions will be **more challenging** now that CMLP electricity is emission free.

Motivation: CMLP & Customer Perspective

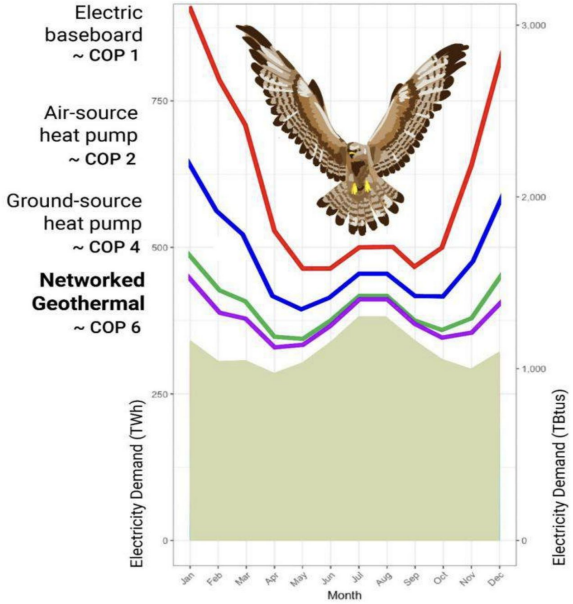
Geothermal networks will help CMLP avoid peak costs and moderate customer rates over time:

- Geothermal networks with ground-source heat pumps will lead to lower peaks, better system load factors and lower electric rates than over-reliance on air-source heat pumps,
- Ground-source heat pumps and networks can adjust better to peak-price periods given higher efficiency,
- Underground pipes and many other components of geothermal networks have very long lifetimes and can be financed over longer terms, with utility debt or credit support (e.g., long-term thermal purchase contracts)
- So, CMLP could avoid future costs and moderate customer rates over time by investing in the early years to support & accelerate geothermal network development

CMLP customers will appreciate benefits:

- Lower rates and lower overall energy costs,
- Support from a professional transition process with neighborhood-scale planning,
- Complete boiler and furnace replacement.

Projected electricity demand by month
(national total, 100% electrification scenarios)



Month: J F M A J J A S O N D

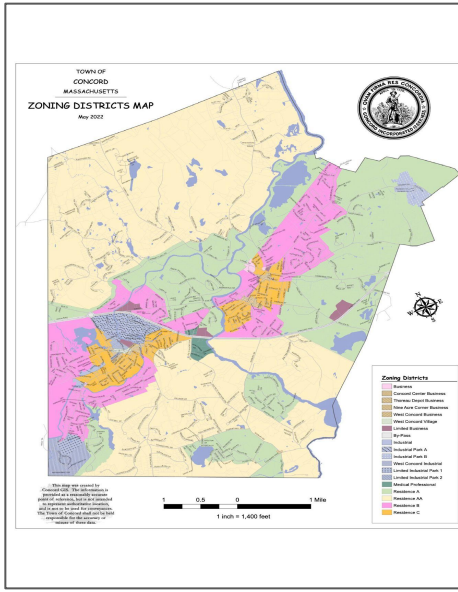
2020 usage in green

Other Networked Geothermal Advantages

- **A new business for gas utilities**: National Grid will lose a key business, a concern for management, and the unions. But, these utilities are capable of installing and maintaining underground networks, which could occupy the under-street right-of-way that the gas lines currently occupy.
- **Solution for aging gas infrastructure and the ‘last-in’ problem**: Maintaining the gas infrastructure will get more difficult with time, as customers transition away from natural gas. The remaining customers, including those who couldn’t afford to switch, would have to shoulder the growing maintenance expense.
- **Conversion of buildings in a neighborhood all-at-once**: Geothermal networks will be planned for economics of scale, and so that all home- and business-owners could install new equipment at the right time, with provisions made for temporary equipment in case heating systems fail beforehand.
- **Combining residential & commercial energy uses improves efficiency** (COP): heat can move from one end use to another on the network.

A vision for Concord's electrification

- 2025-6: Investigate technology and business model for geothermal networks with CMLP in collaboration with National Grid
- 2027-8: Design and implement a pilot project at a suitable site involving retrofits & new construction
- 2027-30: Design and implement a geothermal network for MCI Concord
- 2031-35: Plan and implement several geothermal networks, including multifamily housing and commercial districts
- 2036-40: Implement networks throughout Residence C zones,
- 2041-50: Implement networks throughout Residence B and eventually AA zones. Most of Concord residences covered.



This vision has the scale required to meet our emissions goal. It would reduce electric rates and save residents retrofit and operating costs (compared to ASHPs) with hopefully manageable public investment, and could strengthen CMLP's business in the long term.

Potential Initial Projects 2026-2029 (in addition to MCI)

1. Thoreau Depot (GSEP potential NPA)
    - Includes commercial, multifamily and residential properties - a favorable situation for networked geothermal
    - Could expand over time (e.g., Concord center, CCHS, other large buildings)
2. Crescent St (Residence B zoning) or Pond St (Residence C zoning)
    - Both GSEP potential NPAs, small enough for pilot,
    - Select Board has already approved pipe replacement plans, but National Grid has listed both as potential NPAs
3. Concord Greene
    - Perhaps relatively easy for building retrofits given ductwork and existing A/C
    - Possible without involving street infrastructure
    - Potential to include nearby commercial buildings, River as source
4. Emerson Hospital &/or Newbury Court (subject to Fossil-Free Bylaw)
    - Emerson Hospital planning $100M building upgrades
    - Newbury Court planning new residential development

Roles for NGrid and CMLP working together

Both utilities could be involved, providing the services suiting their capabilities.

For example:

- National Grid could build and run the underground network (geothermal wells and “distribution loop”) and sell energy (flowing either direction) to end customers;
  - If the gas utility is not ready, CMLP could invest &/or partner with an energy service provider.
- CMLP, in addition to selling the electricity, could manage the above-ground procurement & installation of equipment in homes: selecting contractors, negotiating bulk discounts and providing on-bill financing.
- Customers should see lower overall energy bills than fossil or air-source heat pump systems, reliable service and high level of comfort.

Clearly for this to work out, it needs to be financially workable for all parties. Analyzing the economics would be a task for the coming year.

Motivation: Avoid unnecessary spending on gas pipes

The MA governor, legislature and DPU view this as an opportunity for implementing non-emitting alternatives to meet commonwealth climate goals (net zero by 2050)

- Gas companies currently spend ~ $1.5B/year to install new gas pipes in MA.
- GSEP (Gas System Enhancement Program) is financing mechanism for utilities recovering these costs from customers.
- Multi-year GSEP plans filed with communities & DPU each November.
- 2024 Climate Bill allows GSEP to pay for pipe retirement or repair, and directs DPU and gas companies to consider which projects could use "**Non-Pipeline Alternatives" (NPAs)**. See Updated GSEP Fact Sheet from Mothers Out Front.

Concord has 3 potential NPA projects for 2026-2029

Description (street/segment)	NPA Opportunity	LPP Footage
3-46 POND ST, CON	Yes - Potential NPA	425
4-195 THOREAU ST, CON	Yes - Potential NPA	3,590
42-138 CRESCENT RD, CON	Yes - Potential NPA, entire scope	4,055

Framingham/Eversource geothermal network pilot project

Project Overview

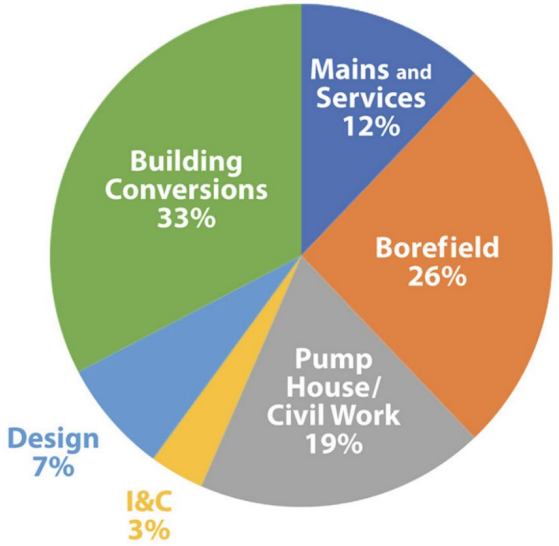
- One main and two recharge borefields
- Primarily Environmental Justice Community
- Mix of loads for system balancing
- 1+ mile of ambient loop piping
- Six outside stakeholders to integrate

Proposed in 2022
Completed in 2024

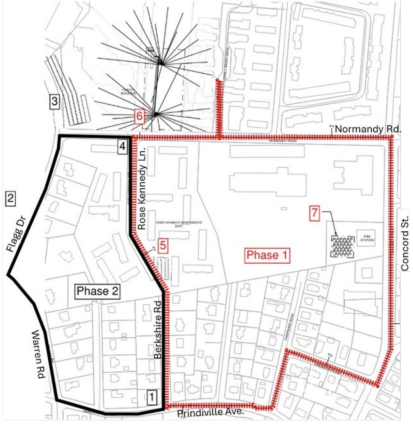
Framingham/Eversource geothermal network

- First-in-nation pilot project, summarized here (3/2025).
- Phase 1 operational since 2024.
- Includes 9 housing authority buildings, 5 commercial and 24 residences.
- 100% participation (Eversource paid full retrofit costs for residences and commercial buildings).
- 375 Tons total heating capacity from 113 boreholes
- Average home retrofit cost ~ $40K.

Current Pilot Cost Breakdown



Phase 2 proposal to extend network, DOE funded



Some potential Concord pilot projects

1. Thoreau Depot (GSEP potential NPA)
    - Includes commercial, multifamily and residential properties - a favorable situation for networked geothermal
2. Crescent St (Residence B zoning) or Pond St (Residence C zoning)
    - Both GSEP potential NPA, but which Select Board has already approved pipe replacement plans.
3. Emerson Hospital/Newbury Court
    - Emerson Hospital planning $100M building upgrades
    - Newbury Court planning new residential development
4. Concord Greene
    - Perhaps relatively easy for building retrofits given ductwork and existing A/C
    - Possible without involving street infrastructure
    - Potential to include nearby commercial buildings

MCI Concord Redevelopment

Promising large site for a geothermal network:

- Fossil free new construction required.
- Mix of commercial and residential buildings boosts efficiency.
- Waste water treatment plant and/or river are good thermal resources, lowering cost as less wells would be needed.
- Energy consultant Buro Happold experienced in the technology
    - See GeoMicroDistrict Feasibility Study

Concord could propose a geothermal network in the MA Environmental Bond Bill.

Summary

- Networked Geothermal can be a promising climate solution with benefits to CMLP and Concord residents.
  - New concept using mature technology.
- Understanding the technology and business considerations for utilities working together is important in the near future.
  - Can collaborate with other MLPs, assisted by MAPC, HEET and other groups.
- We ask that CMLP and the Light Board support this work:
  - Consider how networked geothermal would most benefit CMLP and residents.
  - Assist with business and technology modeling in the coming year.
  - Work actively with MCI Concord development planning towards a geothermal network.

Thank you for the opportunity to speak today!

Additional slides to follow, if useful for Q&A

Other ongoing or proposed networked geothermal projects

1. Boston Housing Authority + National Grid - under construction
    - Electrify Franklin Fields apartments in Dorchester, serving 129 families.
    - Design in 2024, construction starting 2025.
    - Previous NGrid project in Lowell cancelled earlier this year.
2. Salem MA “Heaven and Earth” proposed project
    - Community owned network proposed by San Pedro Episcopal Church (Reverend Nathan Ives)
    - Heating and cooling for the downtown area, including public housing, shops, and city buildings.
    - ~1 mile loop under streets with ~450 boreholes under Salem Common
    - Draft feasibility study April 2025

Larry Lessard (Achieve Renewable Energy) and Rev. Nathan Ives

The Case for Networked Geothermal in Concord

Brad Hubbard-Nelson, Concord Climate Action Committee
Revised: September 5, 2025

Background

At the 2024 Annual Town Meeting, Concord citizens adopted the climate goal of reducing emissions from energy use by at least 85% by 2050, in recognition of the urgent situation facing society. Since the three largest emission contributions are residential buildings, commercial buildings and vehicle transportation, this means all three of these sectors will need to be electrified almost completely in the next 25 years. Technical solutions exist, specifically electric-powered heat pumps and electric vehicles, that can take care of most of this job using emissions-free electricity. However, for the building sector, economic issues and technical realities may pose insurmountable challenges. Networked geothermal, a model for district heating and cooling, is one promising technology to address many of these challenges as described below.

What is Networked Geothermal?

Geothermal heating[1], a mature technology, can be the most efficient and lowest operating cost heating and cooling option for buildings in this climate. The high cost of installation prevents widespread adoption, though for certain buildings with appropriate ducting, it can be cost effective coupled with local and federal incentives. Networked geothermal is a new concept for neighborhood-level heating/cooling, in which a utility operates a loop network of geothermal wells, to which residential, commercial and municipal buildings can be connected. This year in Framingham, Eversource has built a first-in-the-nation pilot network (phase 1 completed in Summer 2024)[2], and National Grid is building a geothermal network in Dorchester,[3] after cancelling an earlier project in Lowell.

Fig 1: Geothermal network connecting buildings along street.

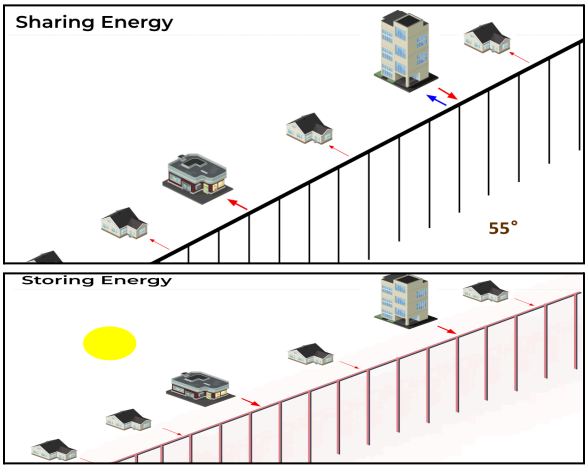
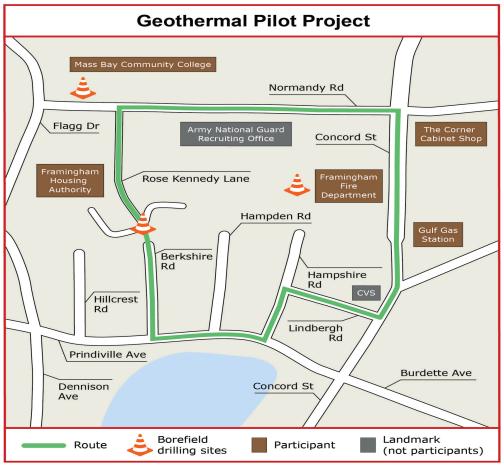


Fig 2: Eversource Framingham pilot project



[1] Not to be confused with Geothermal Energy, used for electricity generation in locations where geology includes magma close to the surface.

[2] Eversource website reference to Framingham pilot project

[3] Boston's first networked geothermal project will electrify 7 public housing buildings

Similar privately-operated geothermal networks are in operation at some college campuses, and also in Europe. In Massachusetts and the US, Networked Geothermal has been promoted by the nonprofit organization HEET[4], pointing out a number of advantages as we transition from fossil fuels to electricity:

- **A new business for utilities to replace natural gas**: National Grid and other gas utilities will lose a key business, which the management, and the unions, would oppose. These utilities are capable of installing and maintaining such underground networks, which could occupy the under-street right-of-way that the gas lines currently occupy.
- **Aging gas infrastructure and the 'last-in' problem**: Maintaining the gas infrastructure will get more difficult with time, as customers change away from natural gas. The remaining customers, including those who couldn't afford to switch, would have to shoulder the growing maintenance expense.
- **Conversion of buildings in a neighborhood all-at-once**: Geothermal networks would be planned so that home- and business-owners could install new equipment at the right time, with provisions made for temporary equipment in case heating systems fail beforehand.
- **Mitigating winter and summer electricity peaks**: Compared with air-source heat pumps, which lose efficiency in very cold or hot weather, geothermal heating maintains high efficiency, reducing the size of the expected winter electricity peak. This can save a capacity and transmission charge costs for all ratepayers if significant fractions of geothermal are installed.

Networked Geothermal Study Group and Collaborations

For networked geothermal to be feasible in Concord, we need to demonstrate a business case where utilities and ratepayers can benefit, with participating residents and businesses reducing operating costs. In this case the separate electric and gas utilities would need to collaborate with defined roles, if both were involved. Last year the Climate Action Committee formed a subcommittee to investigate the technology and business models for installing and operating networks, and advise the Town on whether and how to adopt the technology. Our intention was to obtain grant funding to hire a consultant, but the subcommittee was not continued.

This year, the work has been continued by a study group including Mothers Out Front and other community volunteers. Mothers Out Front has undertaken a statewide campaign to promote neighborhood electrification (networked geothermal or otherwise), in coalition with Gas Transition Allies. This campaign aims to engage communities and residents to advocate for non-pipeline alternatives for GSEP (Gas System Enhancement Program) projects.

Other communities, including several MLP communities, are planning for networked geothermal in early stages. The organizations HEET and MAPC are facilitating a Multi-Town Gas Leaks Initiative, with a focus on networked geothermal. Also the Massachusetts Light Commissioners Association has been discussing networked geothermal projects in quarterly meetings.

[4] HEET.org (Home Energy Efficiency Team) has good resources about networked geothermal, and has funded some planning efforts through its Kickstart grant program.