

## Concord Municipal Light Board Minutes March 8, 2023

Pursuant to a notice duly filed with the Town Clerk, a meeting of the Municipal Light Board was held on Wednesday March 8, 2023, at 7:30 AM, via a Zoom Webinar. Present were Board Members: Brian Foulds (Chair), Wendy Rovelli, Alice Kaufman, Pam Hill, and Warren Leon. Also in attendance were David Wood, CMLP Director; Jason Bulger, Concord CIO; Carole Hilton, CMLP Customer Service Administrator; Laura Scott, CMLP Power Supply and Rates; Joe Repoff, CMLP Assistant Director; Matt Cummings, CMLP Financial Manager/Accountant; Karin Farrow, CMLP Sr. Admin; Ken Stambler, Senior Director, Energy Procurement for Energy New England; Mary Hartman, Select Board liaison; and residents: Dean Banfield, Pamela Dritt, Andy Puchrik, Mark Howell, David Allen, Christine Reynolds, Phil Thayer, Karlen Reed, and one call-in listener.

Note definitions for acronyms used in these minutes:

- **CMLB:** Concord Municipal Light Board
- **CMLP:** Concord Municipal Light Plant
- **EV:** Electric Vehicle
- **PCA:** Power Cost Adjustment
- **TOU:** Time of Use

### **CALL TO ORDER**

Mr. Foulds called the meeting to order at 7:30 AM. Meeting recording will be posted to the Minuteman Media Website as soon as it is available.<sup>1</sup>

### **MEETINGS & MINUTES**

Upcoming Meetings: March 22, 2023, April 12, 2023, April 26, 2023, May 10, 2023, May 24, 2023, June 14, 2023, July 12, 2023, August 9, 2023, September 13, 2023, October 11, 2023, November 8, 2023 & December 13, 2023

### **There were no minutes available for approval.**

Ms. Kaufman to act as Clerk for the Feb. 28, 2023, Public Forum on Solar at the Middle School.

### **DIRECTORS UPDATE** – presented by Director Wood<sup>2</sup> (Timestamp 1:50)

On Feb 16, 2023, a submersible transformer on Comm Ave., after only being in-service for two weeks, failed. We are working with the manufacturer to determine the cause, and if repair/replacement will be covered under warranty. As the availability of transformers is low, it is of concern that there is a potential that what is available is of poor quality.

On Feb. 18, 2023, a hit-and-run driver took out a streetlight on Thoreau Street. Cost ~\$3000 and as there was one in stock, replacement will occur this week.

When reviewing the rate comparisons, please be aware that our cost numbers include the \$0.059 PCA.

An article describing CMLP's heating and cooling coaching services was featured on the American Public Power website and published in a PPS e newsletter, Public Power Current.

The winter moratorium on residential service shutoffs will end on March 15. The first round of delinquent notices is scheduled for April 6 with the potential disconnect date of April 20. On the commercial side we have

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<sup>1</sup> Minuteman Media YouTube Link: [https://www.youtube.com/watch?v=G3bKiwd\\_bdY](https://www.youtube.com/watch?v=G3bKiwd_bdY)

<sup>2</sup> Addendum A: Directors Update

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one customer with a significant balance due.

**BROADBAND UPDATE** – presented by CIO Bulger (Timestamp 9:47)<sup>3</sup>

Mr. Foulds commented that the resiliency of the system is important and queried whether redundancy should be added to the system.

**G4- General Service – EV Charging Rate** - Presented by Ms. Scott<sup>4</sup> (Timestamp 20:00)

Ms. Scott explained that there is a disincentive for Small Commercial Customers to charge EVs under the G-4 (GENERAL SERVICE – ELECTRIC VEHICLE CHARGING) rate due in large part to the existence of a second meter fee. Mr. Foulds proposed removing the second meter fee from the G-4 rate, but also investigating in the next Cost of Service study whether it would be appropriate to develop a second meter fee with a lower cost to collect only for the capital and maintenance of the second meter rather than have the second meter fee collect for expenses such as CARES twice. The lower cost second meter fee could apply in the future not only to electric vehicle charging but also to customers who have second meters for other reasons.

**Ms. Rovelli moved to remove the meter fee from the G4 rate tariff as discussed today. Ms. Hill seconded the motion and with a unanimous roll call vote in favor the motion carried.**

**METER CHARGE STRATEGY** presented by Ms. Scott (Timestamp 45:45)

The Light Board must determine which of CMLP's costs should be collected in a fixed customer charge, which in a volumetric charge, and which, if appropriate, in a demand fee.

By way of reference, Mr. Foulds shared how Hingham developed their fixed customer charge in a recent Cost of Service study. Hingham came up with a roughly \$27 per month Customer Charge consisting of:

- meter operation, maintenance, and replacement costs
- meter reading costs
- billings costs
- Customer Service Department
- service into customer facilities and
- a portion of the distribution system consisting of the cost to get a wire from the sub-transmission system to the customer based on minimum sizing (if all customers only used a single kWh.)

The Board expressed concern that collection of all the fixed costs would place an unfair burden on the small-use customers and reward large-use customers.

Mr. Foulds suggested basing the meter fee on the size of the service going to the customer be researched in the next Cost of Service Study.

Discussion of which expenses should be allocated to the meter charge concluded with an agreement that Mr. Foulds and Mr. Leon would meet with Mr. Wood and Ms. Scott to come up with a proposed list of expenses to fall into the category of fixed expenses that would be included in the meter charge calculation in the next Cost of Use Study.

Citizen comments:

*David Allen* - Costs are either fixed, variable, or in a gray area. Using what other light plants do or basing the decision on feeling \$70 is too high is not rational. CMLP should use a sound logical basis to determine the fixed

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<sup>3</sup> Addendum B: February 2023- Broadband Update

<sup>4</sup> Addendum C: G4- General Service – EV Charging Rate Tariff Sheet

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fee. However, cannot hit the low volume user with a dramatically higher charge. Must make a provision for the low-volume user.

*Pamela Dritt*-To get to an ideal scenario where all energy use is electric and the supply is 100% green, behavior must be incentivized. Rate changes should be gradual. CMLP should generate more revenue than the current revenue requirement so the Light Plant can invest in projects like the Middle School solar plus storage.

**RESIDENTIAL ASSISTANCE RIDER TOU STRATEGY (Timestamp 1:23:18)**

*Background: The town has established an income-qualified Residential Assistance Rider that targets a 50% bill reduction for qualified customers. A new time-of-use base rate structure with higher fixed collection requires we consider a new approach to providing this financial support.*

*Purpose: To discuss how best to structure the Residential Assistance Rider so qualified customers receive proper financial support under the Time-of-Use rate.*

A reduction or elimination of the meter fee with a corresponding reduction to the per kilowatt hour credit was proposed. Concern was expressed for those (renters/new homeowners) that do not have control over the electrification level of their residence; a reduction of the volumetric credit may not provide the target level of assistance. A decision on the rider strategy was deferred until after the TOU rate is established and impact models with different scenarios on various credit configurations can be provided.

**TOWN MEETING WARRANT ARTICLES<sup>5</sup> (Timestamp 1:31:45)**

*Background: The 2023 Annual Town Meeting warrant consists of 46 articles*

*Purpose: To identify which articles the Light Board will take a position on.*

Director suggested the following:

Articles 5 (HRGov proposed format) and 6 (present format) both have to do with Class and Compensation with the plan being no movement on Article 5 and instead moving Article 6 (pending completion of the current Class & Comp Study.) If the consultant is not finished by Town Meeting, then Article 5 would be presented. The Board may be interested in these two Articles because they do have salary ranges for Light Plant Staff.

Article 21 is CMLP's Article for the Middle School Solar Project.

Article 22 is a citizen petition for a Solar Taskforce.

Article 24 is the Light Plant expenditures and (PILOT) payment in lieu of taxes.

Article 36 is a noise bylaw of interest because there is no specific or implied exemption for the Light Plant and it would limit the hours, CMLP staff could go out and make any needed repairs.

Article 23 concerns adoption of a specialized energy stretch code.

Board discussion on the identified articles to be addressed during any/all the three scheduled meeting prior to the Town Meeting.

**LIAISON AND PUBLIC COMMENTS (Timestamp 1:35:45)**

*Ms. Rovelli* advised the Board she would be absent from the April 12<sup>th</sup> meeting, adding that as she is the Light Board representative on the Finance Committee someone might want to take her place at the Finance Committee meeting that same week. The Light Board will also need to appoint someone to be the CMLP representative to the Finance Committee upon the expiration of her Light Board term.

*David Allen* -The Light plant can accurately identify fixed, variable and those that are semi-variable costs. On the question of graduating, the change does not change the amount collected. So, there's no reason to be graduated. What you do have to check is the impact of the change on different classes of users.

*Mary Hartman* - Stated that at the Monday night Select Board meeting we started very preliminary discussions

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<sup>5</sup> Warrant for Annual Town Meeting: [https://www.concordma.gov/DocumentCenter/View/41025/2023-ATM-Final-Warrant\\_Web-Version-v2](https://www.concordma.gov/DocumentCenter/View/41025/2023-ATM-Final-Warrant_Web-Version-v2)

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on what our recommendations would be on all warrant articles at town meeting and some of the Select Board members really want to hear Light Board recommendations, specifically on Article 22 and Article 36. Hopefully the Light Board can determine their position on these two articles at the March 22<sup>nd</sup> Light Board meeting. Ms. Hartman was glad to see that CMLB is looking at the Residential Rider because constituents want to make sure that when we go to the time of use that that is still in place.

*Mark Howell* - Suggested that on the G4 Rate it might make sense to think about the level three chargers and even possibly level two chargers having a load control switch which would permit the Light Plant to disable these devices during particularly critical periods; and that language could be included explaining how a single vehicle charging during the wrong hour at a public charger can cost the system literally 10s of 1000s of dollars in the following year, because of the incremental load when the ISO assesses the capacity charges. These devices, load control devices, even battery storage, if operating in the wrong direction at the wrong time, could be very costly for our system. Mr. Howell liked the general idea of sizing the meter charges to the service level and suggested that we need to be a little careful, as others have noted, service sizes are going to increase as electrification increases. He further suggested that the basic primary meter charge for residences also comes with a certain number of kilowatt hours baked into that fixed charge.

*Dean Banfield* - Suggested making public some sort of dataset which maps to the latest DPU filings that the Light Board has made, and provide three months' worth of actual meter bills with all the PII (the personal, identifiable information) removed so that a citizen could model it and say, if we were to do this to the base charge, and then charge this for the kilowatt, what would that do?

*Pamela Dritt* suggested that we look at what we want to have in the future and then design rates to encourage that to happen or at least to not discourage that from happening. Right now, we've got situations where utilities like CMLP, in other parts of the country, look at residential solar installations as competition, not as help. And I think that the Light Plant ought to have the same benefits of all of the locally generated solar power whether it's through us or not, as Concord's effort to decarbonize energy and, and that should be the benefit of the light plant, not just the things that actually financially benefit the Light Plant. For instance, in California, the electric utilities, in an effort to recover some of their fixed charges that they're not getting any from solar installations, have added fees that make it nearly uneconomical for residences to add solar because of the monthly charges to be connected to the grid. That's incentive not to add solar and we don't want to get to that here in Concord. We don't want to make an all-electric building cost the same for electricity as a gas guzzling McMansion. Will the new meters work to make a local virtual power plant for peoples' batteries? You need to have incentive prices for adding battery backup not just solar.

**Ms. Rovelli moved to adjourn. Ms. Kaufman provided the second and with a unanimous vote, the meeting was adjourned at 9:20.**

Respectfully submitted,  
Pam Hill, Clerk



Date: March 7, 2023  
To: Light Board  
From: David Wood, Light Plant Director  
Subject: Director's Update March 2023

**Operations:**

*Commonwealth Avenue*

Last month an outage occurred around 8 PM affecting Debra's Natural Gourmet, Reason's to be Cheerful and the old upholstery shop. The outage was caused by a failed submersible transformer. Once engineering and line personnel determined that the transformer was the cause of the outage, they promptly replaced it with a like in kind spare and restored the outage.

Approximately two weeks later, last Thursday morning, we received a call of no power from Debra's. The cause of this outage was once again determined to be a failed transformer. The same transformer that we had just changed out. We again changed the transformer out with a spare and restored the outage as quickly and safely as possible.

The causes of the failures are unknown, although preliminary investigation points to water intrusion. CMLP engineering will be working with the manufacturer, Howard Industries, to determine the cause and if any warranties apply. Of note, both transformers were manufactured and delivered during the middle of the pandemic.

*Thoreau Street*

CMLP received a call on Saturday morning at approximately 5 AM, indicating that a streetlight was down in the road on Thoreau Street. CPW made the initial call when a plow driver discovered damaged streetlight. CPD determined that the damaged streetlight pole was the result of a hit and run, and CMLP has verified damaged consistent with a motor vehicle collision. The streetlight was too damaged to be reused, and CMLP replaced the streetlight this week. For reference, the streetlight was the second in from Main Street.

**Residential Rate Comparisons:** Included with this report are the most recent MMWEC Commercial and Industrial rate comparisons. This is comprised of December 2022. It should be noted, the 2022 power cost adjustment is included in these comparisons.

### Energy Management:

- An article describing CMLP's [heating/cooling coaching service](#) was featured on the American Public Power Association's (APPA's) [website](#), and published in APPA's e-newsletter, Public Power Current, on February 14, 2022. CMLP received a grant from the APPA to pilot the service in 2021 and 2022.
- Customer Mary Babcock responded to an email letting her know that her EV Miles and EV Level 2 rebates had been processed for payment by saying, "Wow! That was quick! Thank you, Laura! We already have electric lawnmower, snowblower, two heat pumps, and now an EV! Next project will be solar panels if/when we need a new roof! I can't tell you how many family and friends are so, so impressed with how progressive Concord's electric company is. It surely sets an example for the rest of the country! With much appreciation for all the work you do."

### Collections:

- 3/16 – Customer Service is hosting the Residential Assistance and Collections Round Table Discussion
  - Attendees: Concord Social Services, Council on Aging, Concord Housing, Concord Carlisle Community Chest, St. Vincent de Paul, Hugh Cargill, Veterans, Water Department, & Broadband
  - Agenda topics:
    - Residential assistance and renewal process
    - End of winter moratorium and collections
    - Financial hardship, elderly protection, budget plans
    - Agency updates
- Collections – 3/15 Winter moratorium ends
  - Revisions and programming changes made to delinquent and disconnect notices
  - Each CSR manages collections for all the accounts in their billing cycle (3 cycles)
  - Residential
    - 4/06 – delinquent notices go out
    - 4/20 – first potential disconnects
  - Commercial
    - Resuming year-round collections efforts after pandemic
    - 3/09 – delinquent notices go out



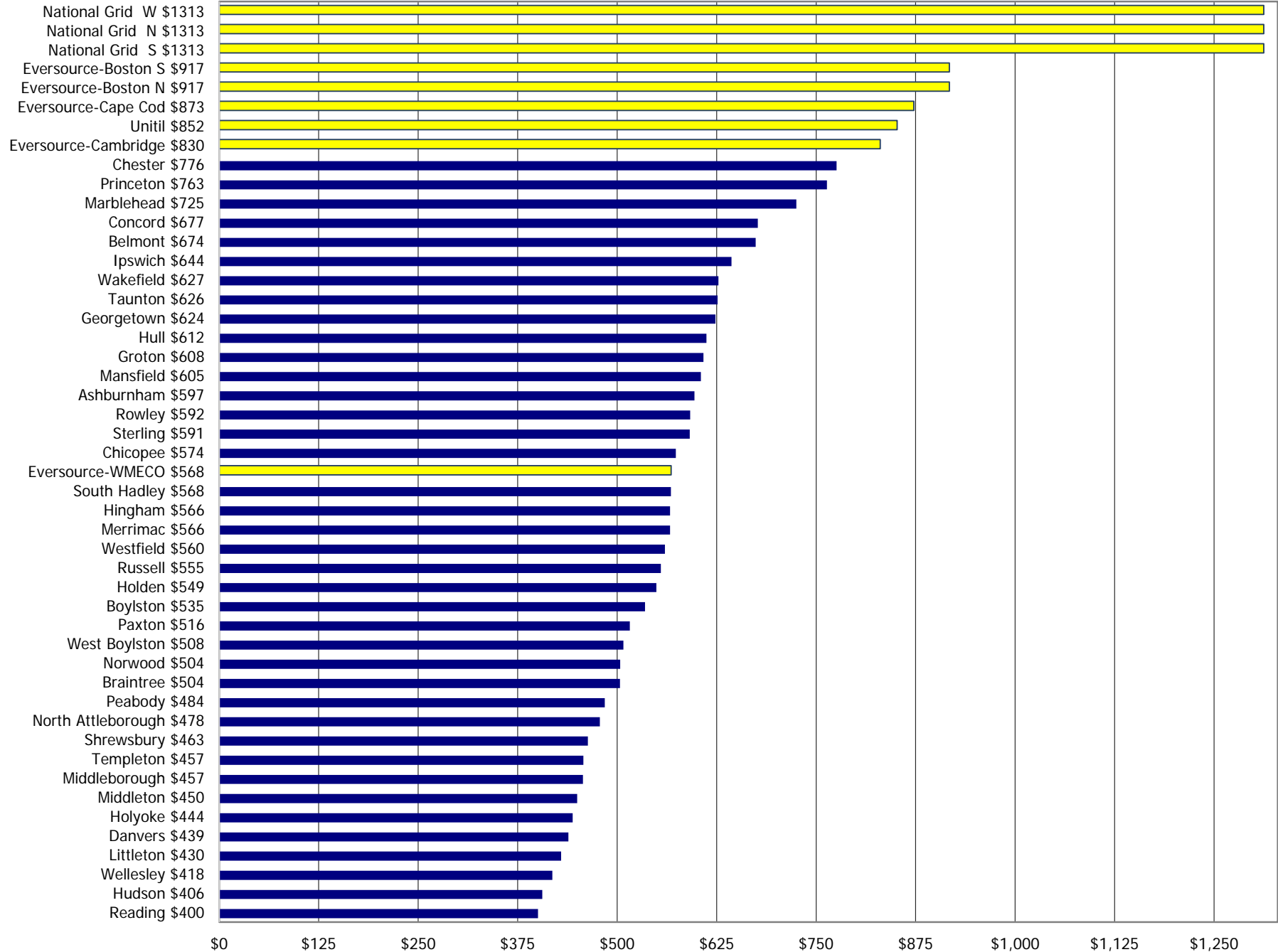
# CONCORD MUNICIPAL LIGHT PLANT

ELECTRIC | BROADBAND | ENERGY MANAGEMENT

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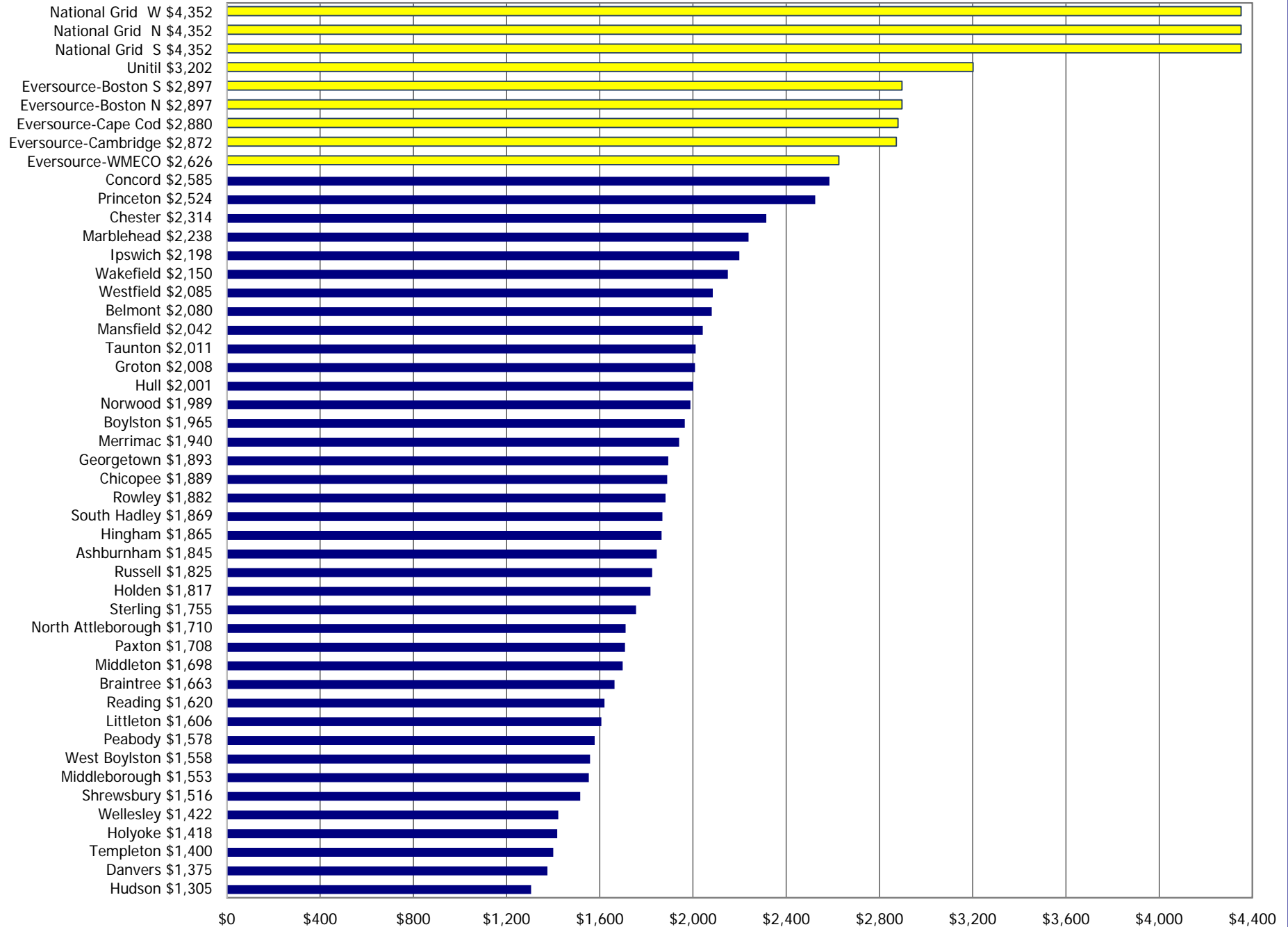
- 3/22 – first potential disconnects
- Beginning year-long review of commercial accounts for deposit requirements and contact information
- CYC 22 – one account with significant AR for electric, water/sewer
  - Total of \$97K; \$69K electric and \$28K water/sewer
  - Cannot disconnect nursing home but will request deposit or Irrevocable Letter of Credit

### Commercial Industrial Rate Comparison December 2022 - 3,000 kWh

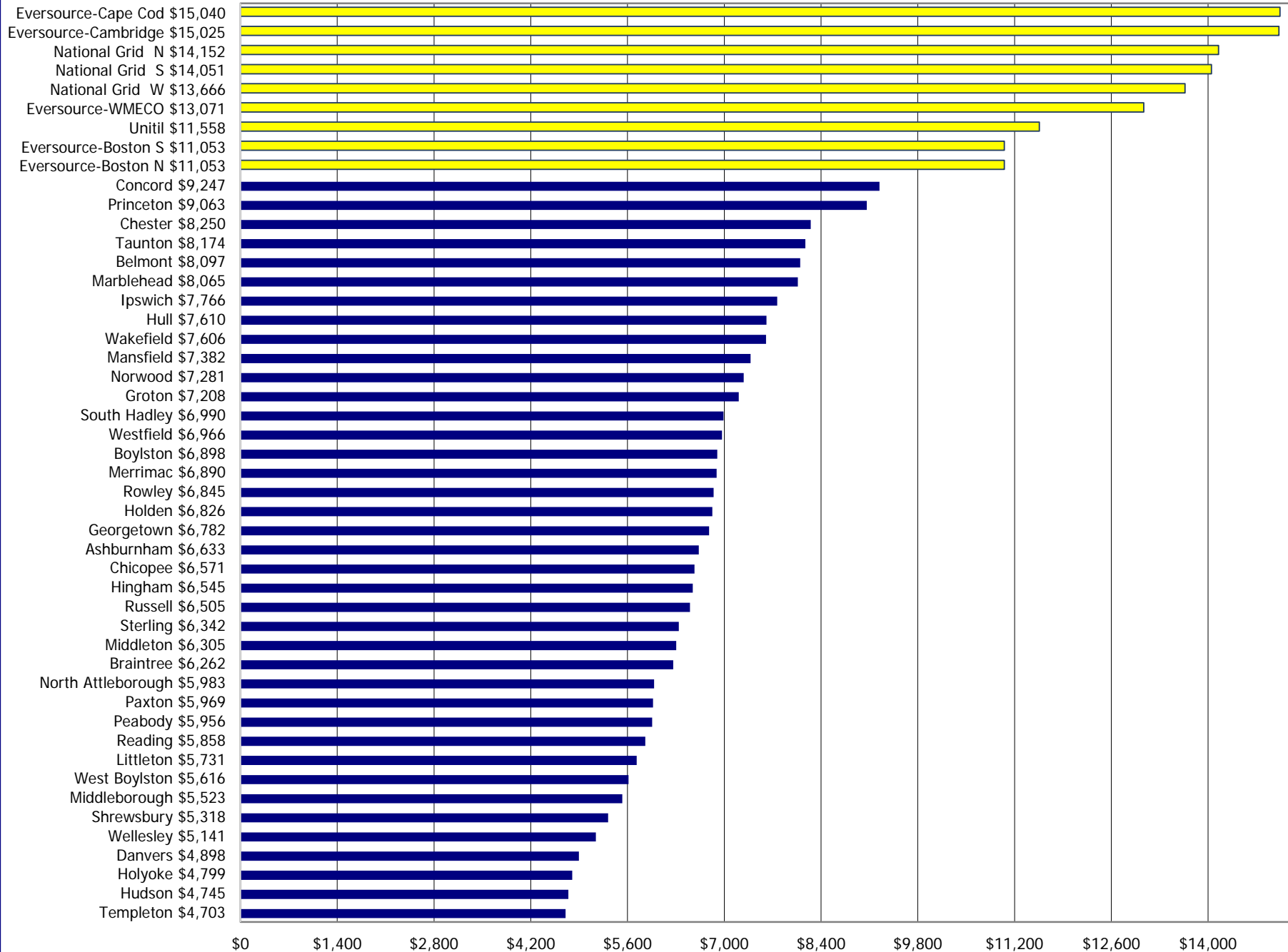




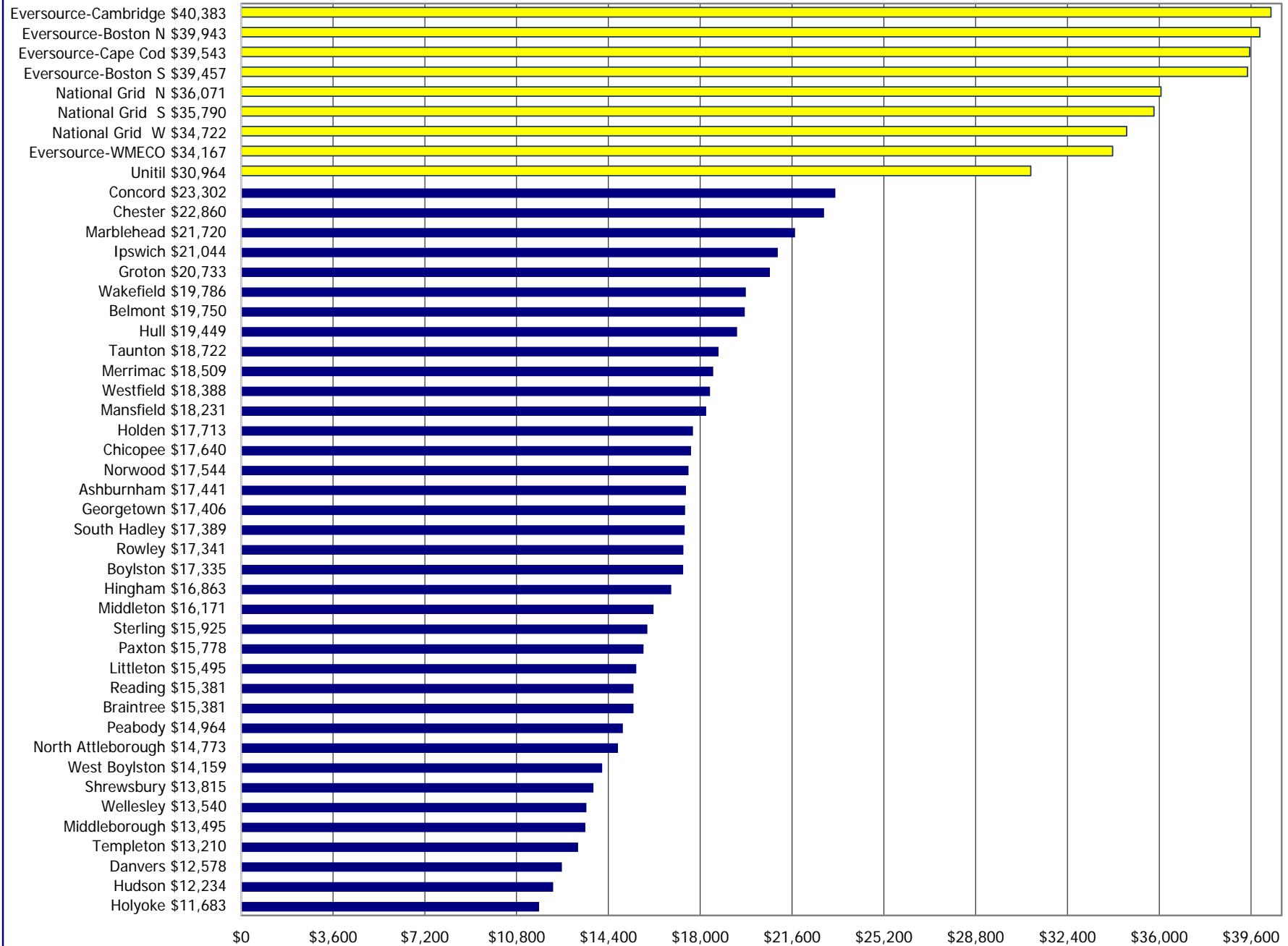
### Commercial Industrial Rate Comparison December 2022 - 40 kW 10,000 kWh



### Commercial Industrial Rate Comparison December 2022 - 150 kW 36,000 kWh



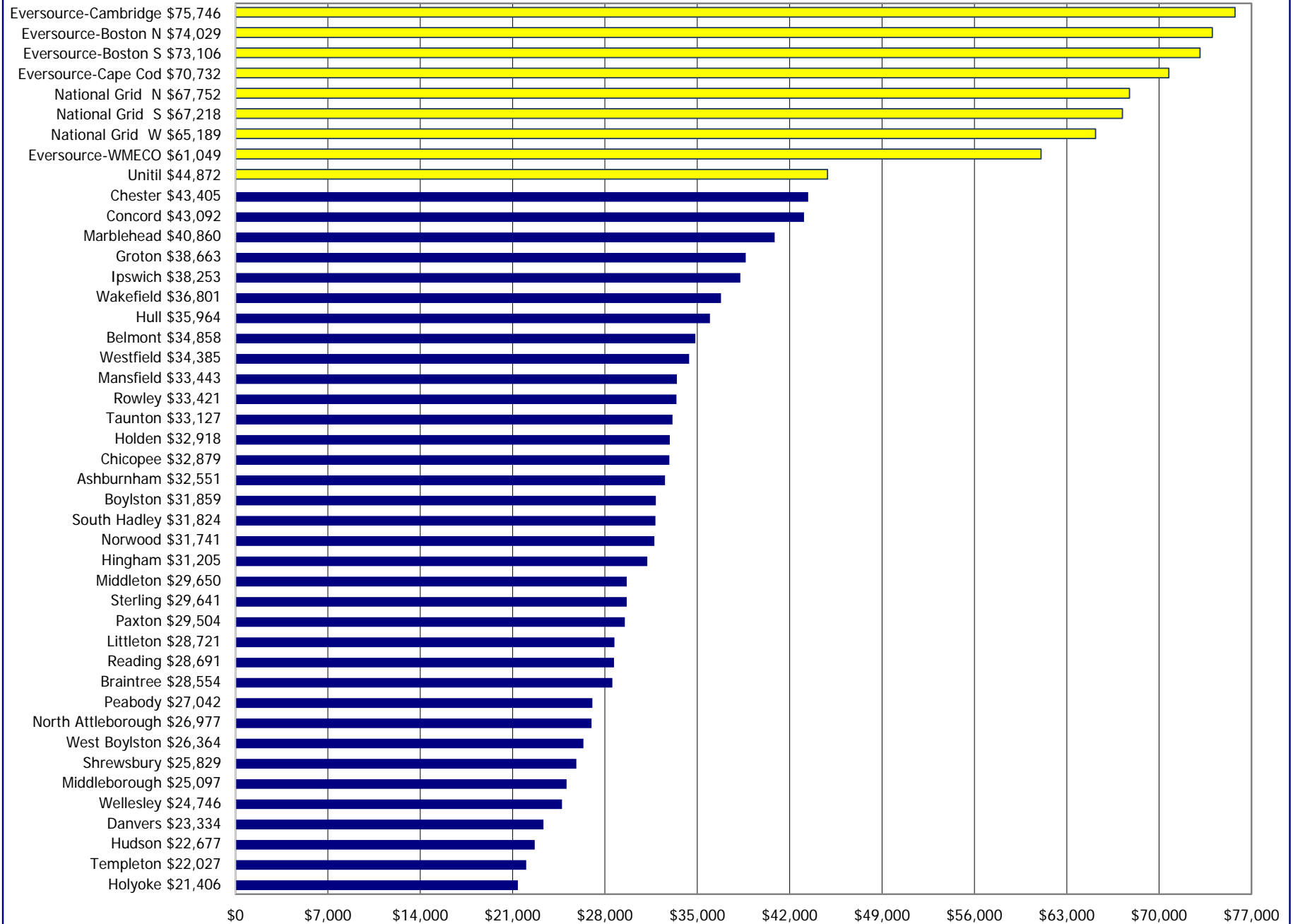
### Commercial Industrial Rate Comparison December 2022 - 300 kW 100,000 kWh



Princeton and Russell have no customers in this rate.

DISCLAIMER: The information contained in this report has been obtained from various sources. MMWEC does not guarantee the accuracy of this report.

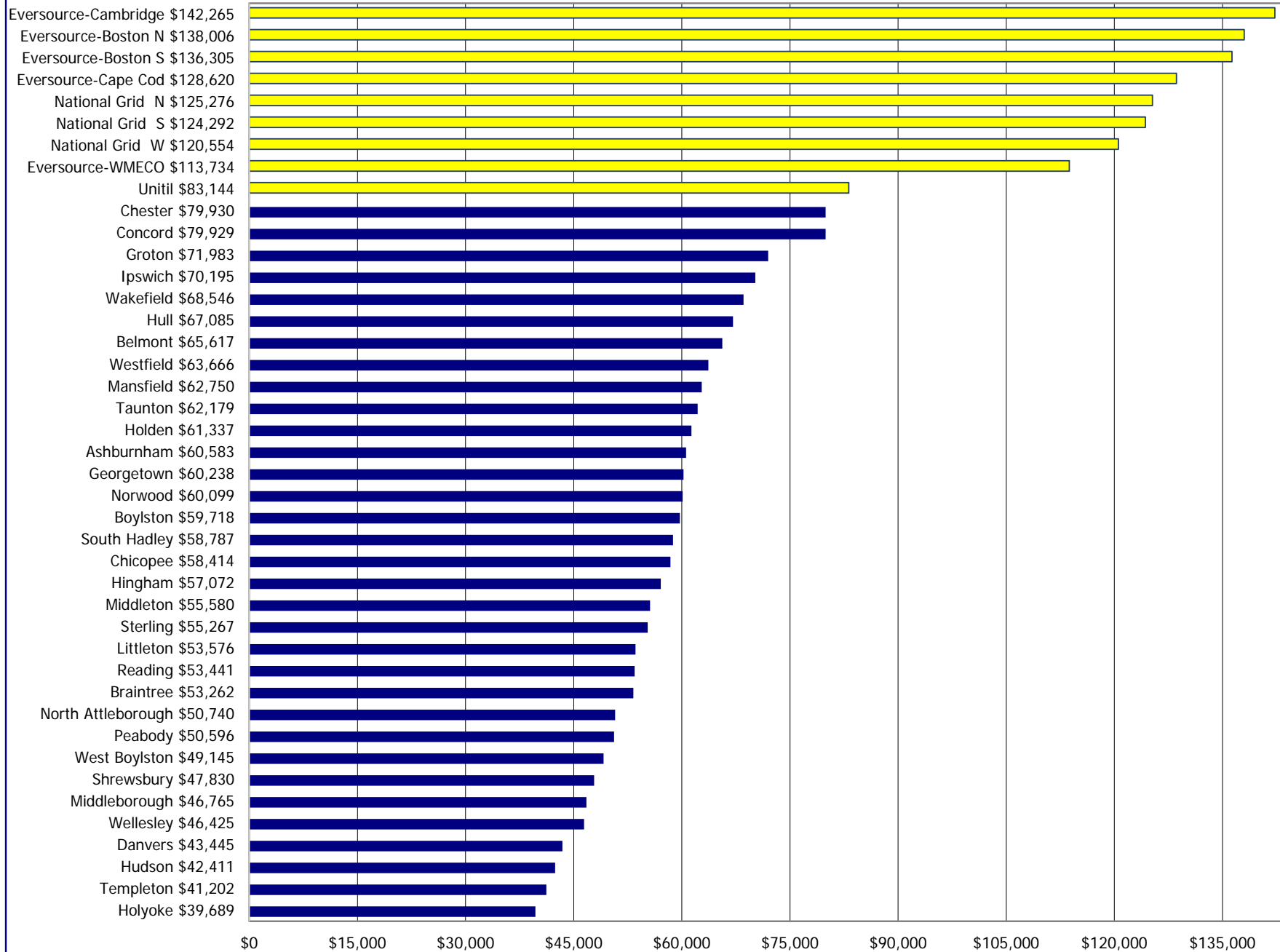
### Commercial Industrial Rate Comparison December 2022 - 500 kW 190,000 kWh



Princeton, Georgetown, Merrimac, and Russell have no customers in this rate.

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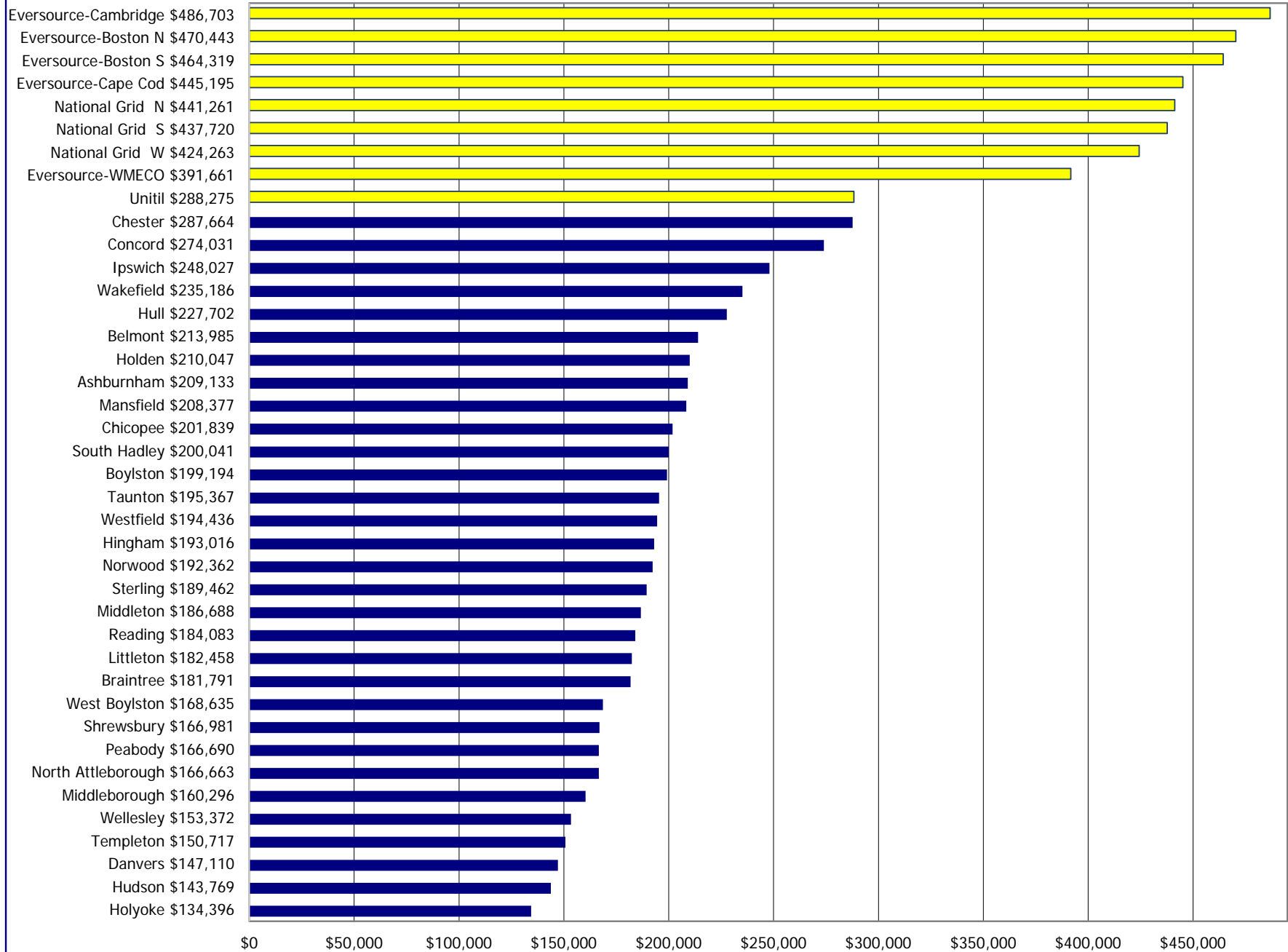
### Commercial Industrial Rate Comparison December 2022 - 1,000 kW 350,000 kWh



Princeton, Marblehead, Merrimac, Paxton, Rowley, and Russell have no customers in this rate.

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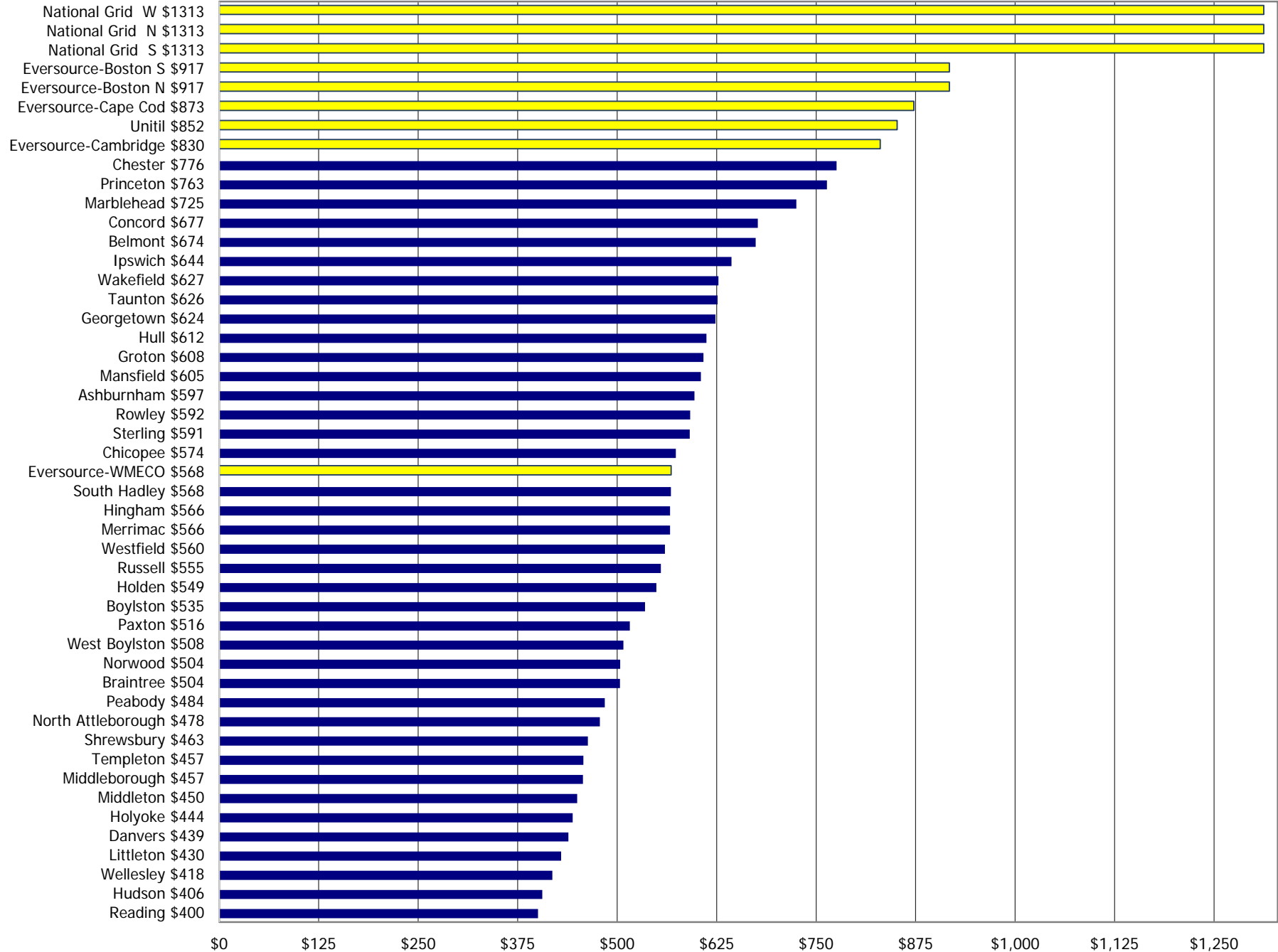
### Commercial Industrial Rate Comparison December 2022 - 2,500 kW 1,260,000 kWh



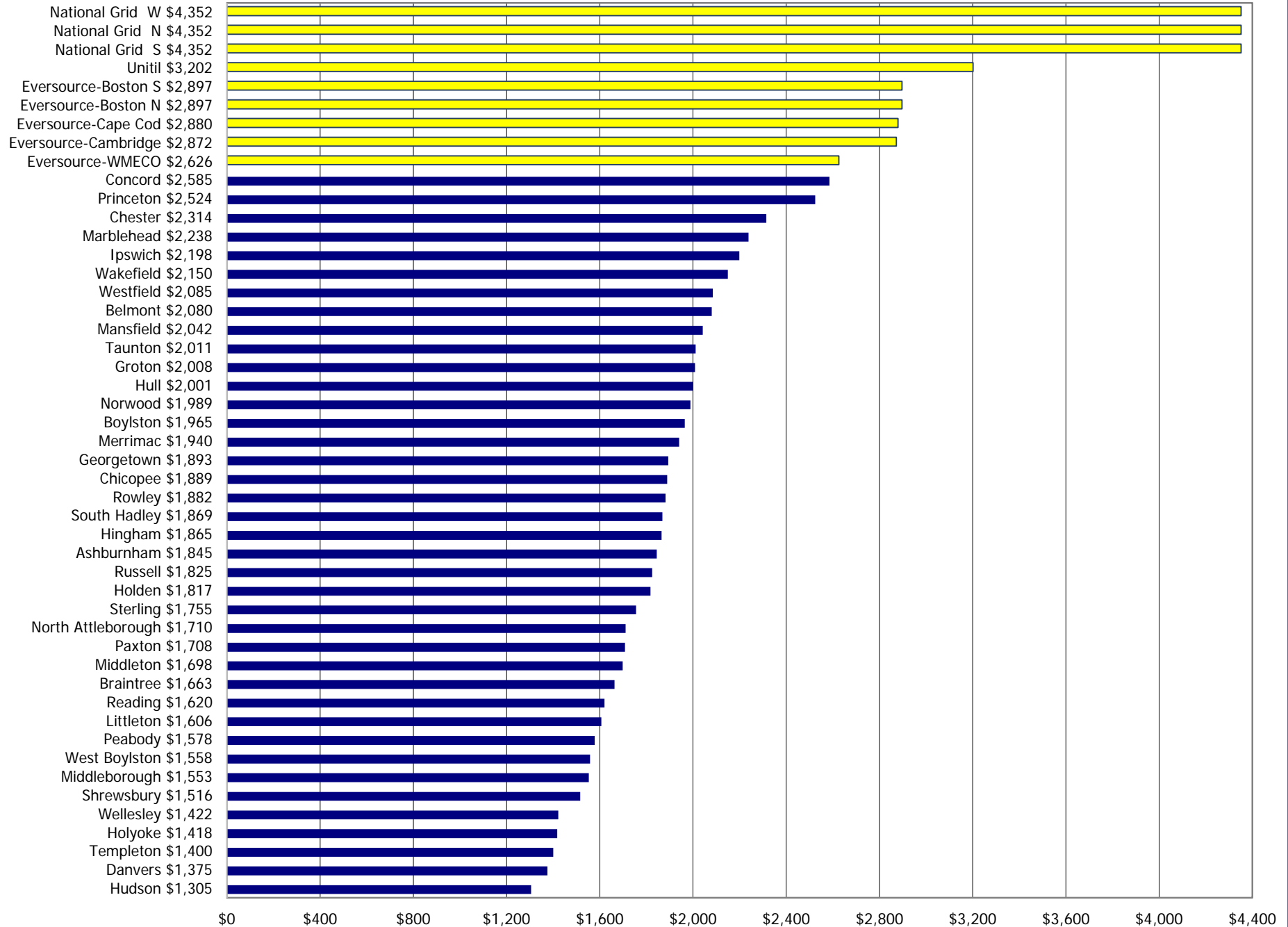
Princeton, Merrimac, Marblehead, Groton, Paxton, Georgetown, Rowley, and Russell have no customers in this rate.

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### Commercial Industrial Rate Comparison December 2022 - 3,000 kWh

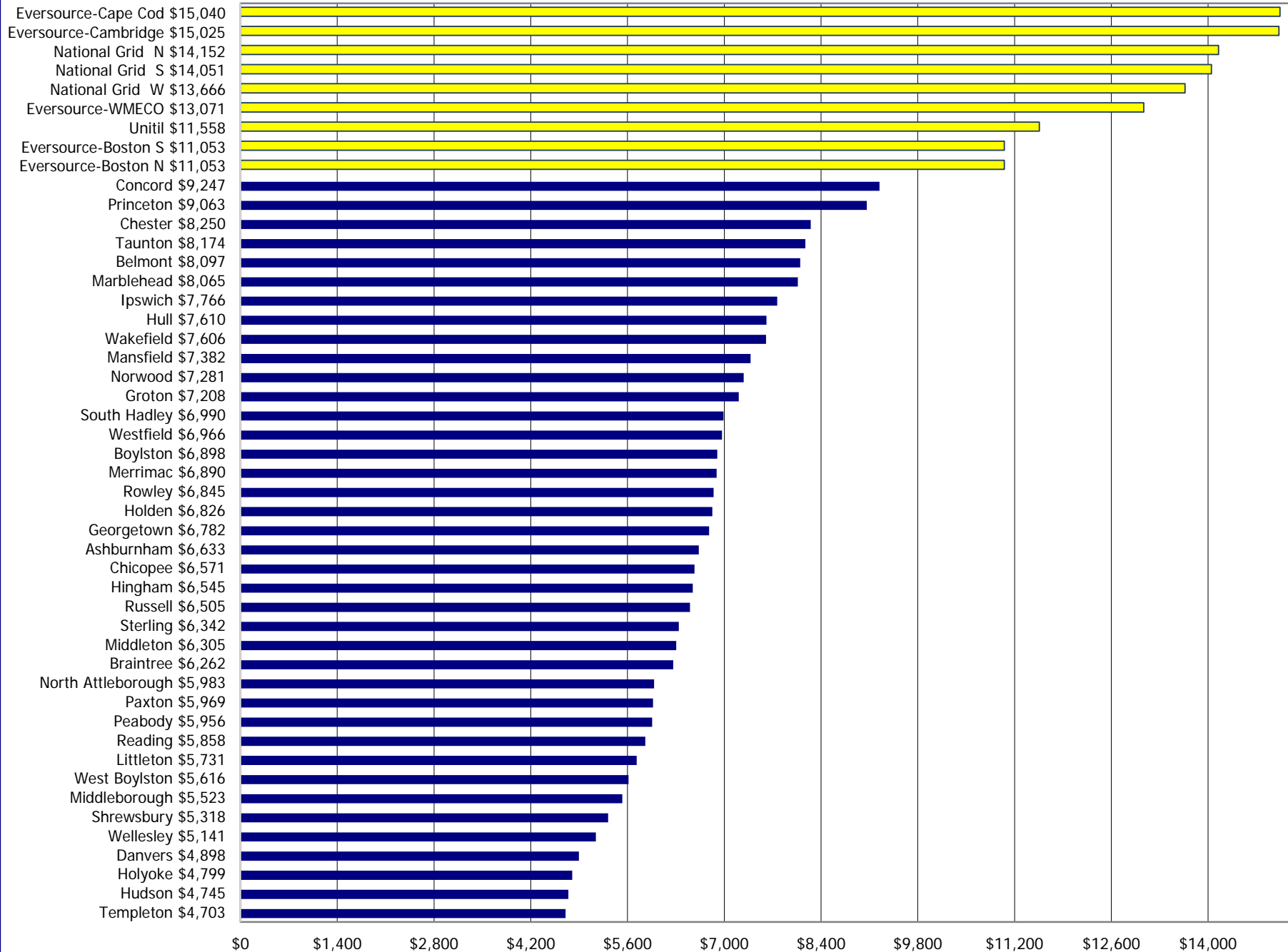


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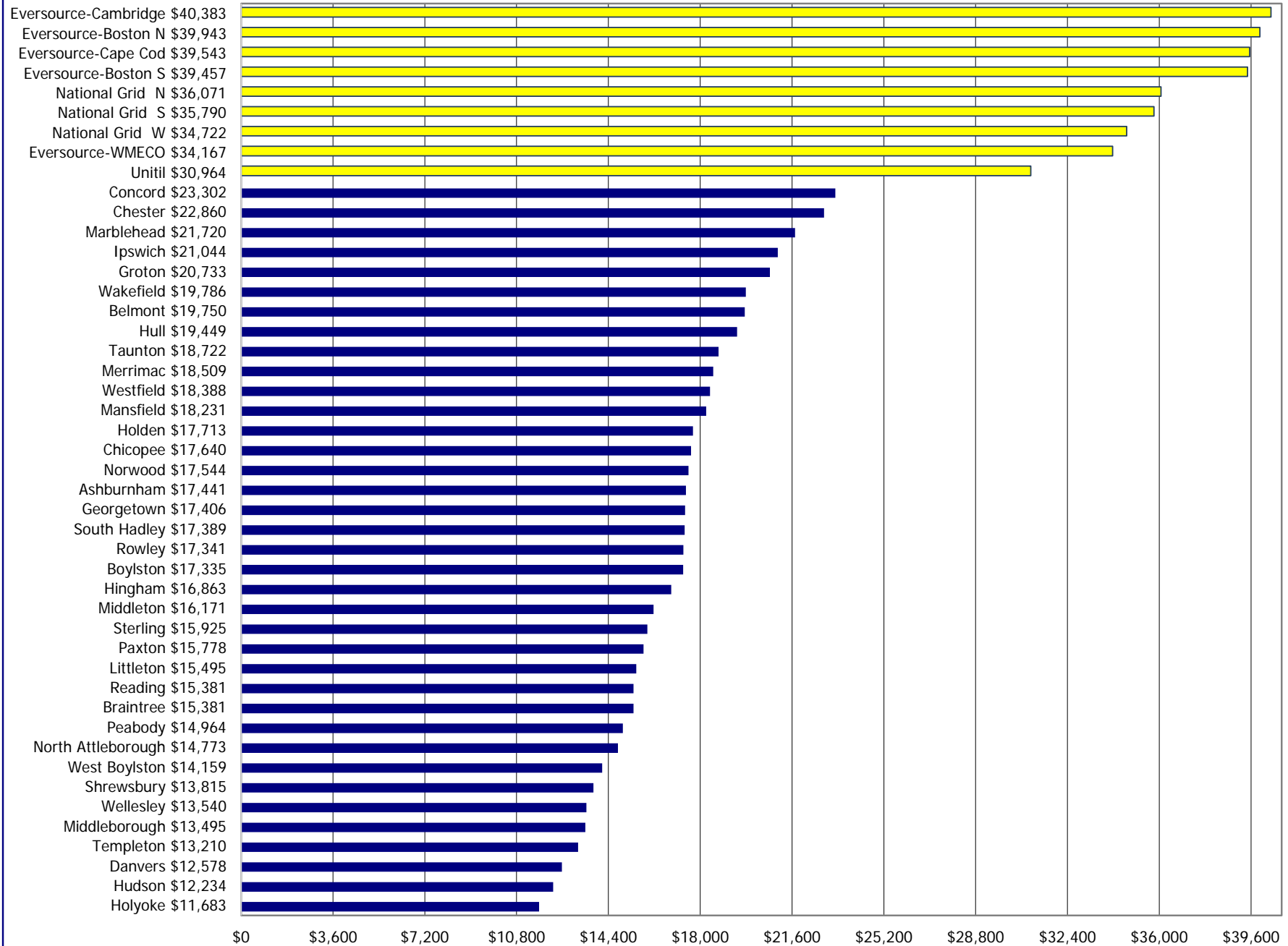




### Commercial Industrial Rate Comparison December 2022 - 150 kW 36,000 kWh



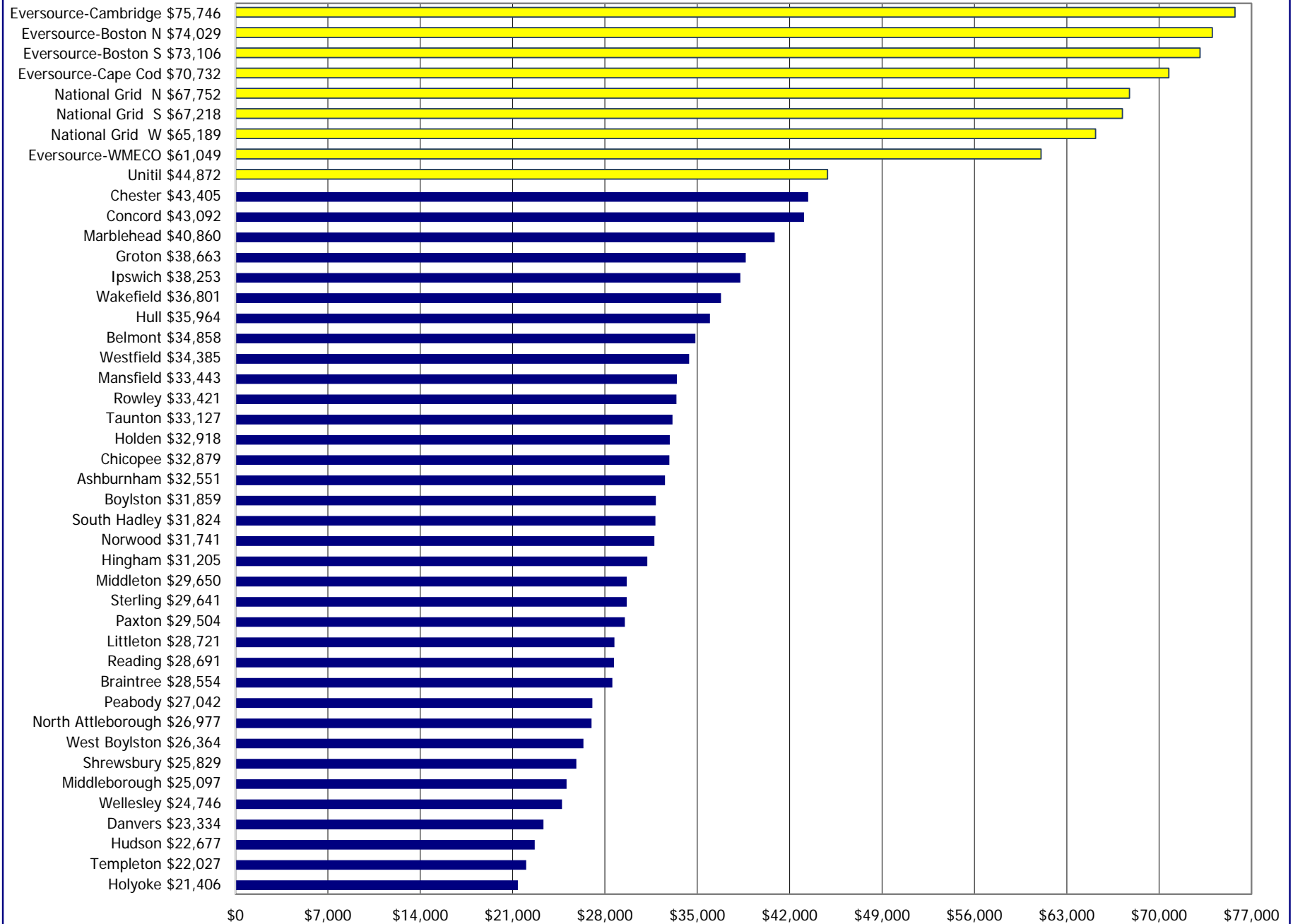
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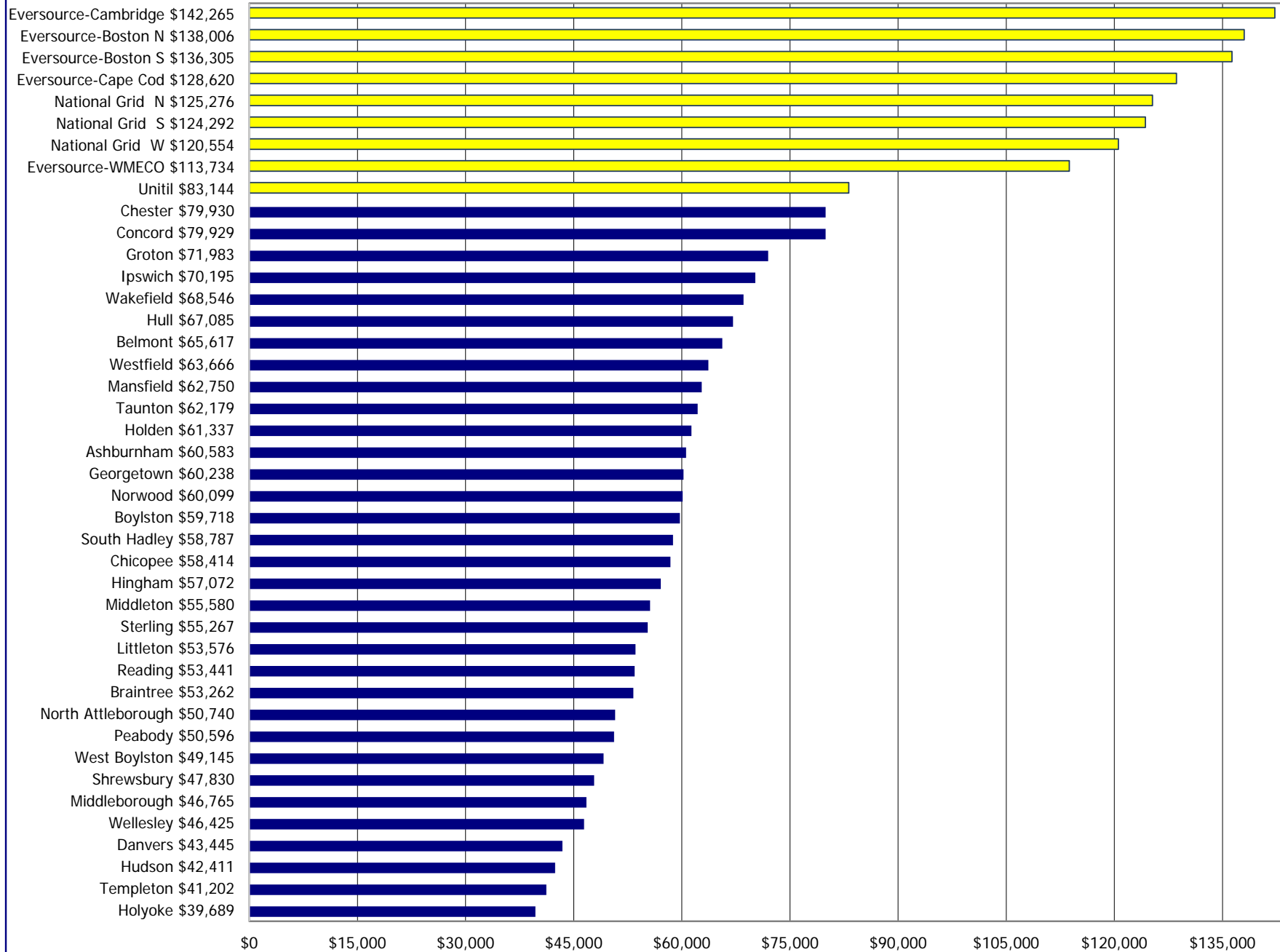
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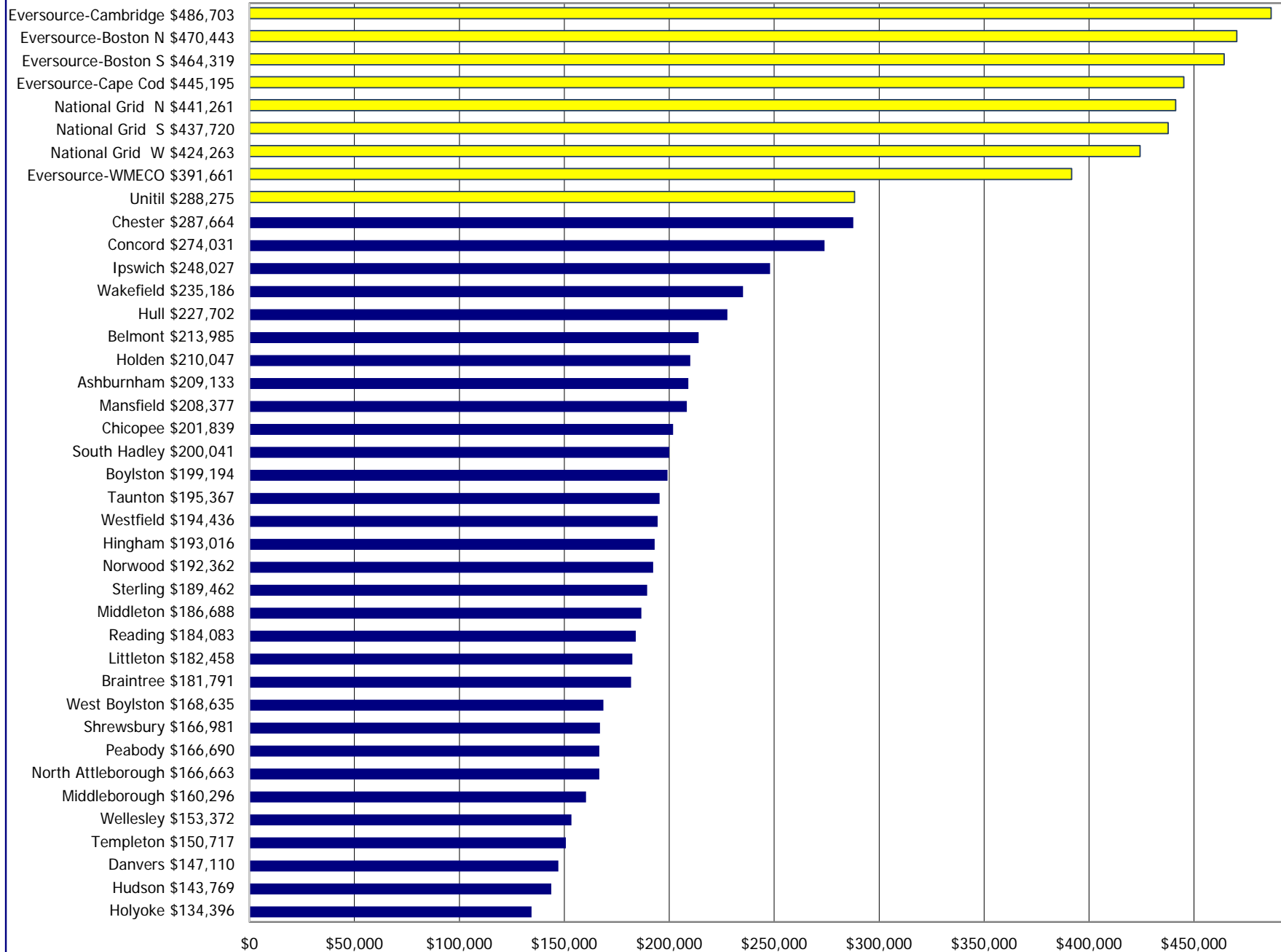
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### Commercial Industrial Rate Comparison December 2022 - 2,500 kW 1,260,000 kWh



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## February 2023 – Broadband Updates

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

### Operations

We are pleased to announce that the recruitment of the Telecom Technician is coming to a close soon with an offer expected in the coming days. We have had a great response to this posting and are glad to be at this phase. The only remaining vacancy is a Network Engineer position.

In networking news, our Network Engineer is just wrapping up a network expansion at Keyes Road to provide connectivity for security cameras and a Town-wide wireless access point replacement project. At the end of 2021, the Town was awarded an \$89,000 grant for the purpose of replacing wireless access points in Town buildings.

### February Network Interruption

In early February, we identified a customer that was not able to get advertised speeds on their network. We worked with Calix, our hardware vendor, to troubleshoot this, going through several steps and making changes to the equipment. They asked that we move that customer to a different port on our network equipment, but that did not remedy the situation. They asked us to move that customer (and those sharing the same fiber) to another piece of equipment entirely, and that work was performed on the morning of February 14th.

Initially those customers came back and seemed to be unaffected, but soon after we received reports that many people were experiencing erratic connections, slow speeds, or no service at all.

We contacted Calix, and they worked with us on troubleshooting. In the end, certain devices needed to be fully rebooted to bring everything back to normal. Concord Broadband's network design is a ring topology with multiple connections to/from each data center, but this ring relies on software to ensure the proper flow of data. Glitches like this can result from a bug in the software running on each device or from a hardware failure. Since the first such event in October of 2022, Calix has tried unsuccessfully to determine the root cause. After several discussions, they are sending a senior engineer on site to conduct a forensic analysis on the devices to attempt to discover the root cause.

### Maintenance

On February 14, 2023 at 6am, Concord Broadband staff worked with Calix, our hardware vendor, to perform maintenance at our primary data center. The purpose of the maintenance was to troubleshoot unexpected speed caps seen by a single customer.

The maintenance seemed to work, and the impacted customers all came back online. Unfortunately, the change led to unexpected results.

You can read more about the work and what we have done to address it on page 1 of this update.

We apologize to our customers for any impact on service they may have experienced that day, and we assure you that we are doing everything in our power to ensure the highest level of availability with these devices.

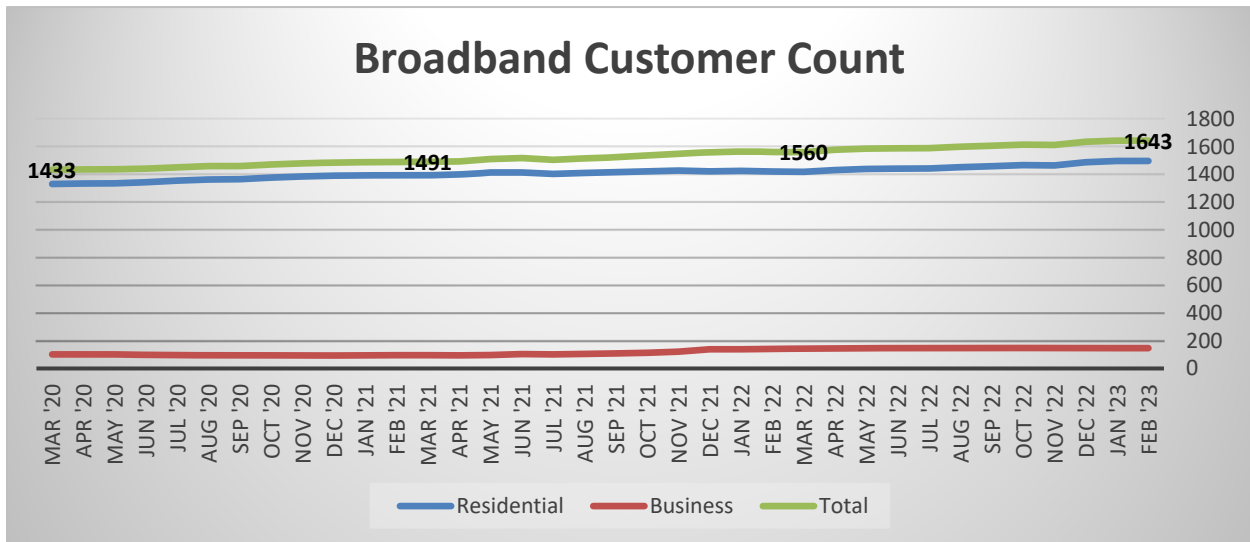
In 2023 we will be transitioning to the next generation of switching equipment capable of 10Gb/s symmetrical speeds on each fiber (up from 2.5Gb/s down and 1.25Gb/s up today). We will update the Board and the public when we begin to utilize this equipment.

### Upcoming Rate Subsidies

Concord Broadband is pleased to announce that we have received a waiver from the FCC to be eligible to apply for the Affordable Connectivity Program (ACP). We then submitted a formal application to participate in the program, and that application is pending with the USAC, the agency that oversees the implementation. We hope to have word soon on our acceptance to the program.

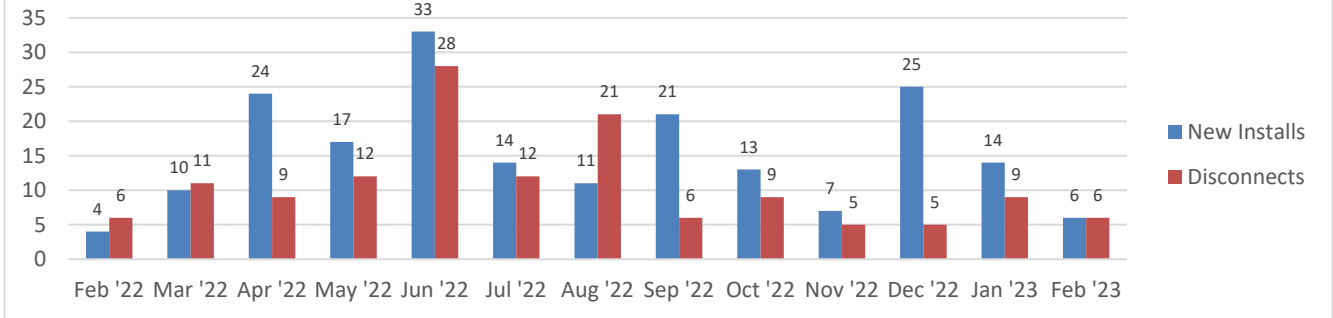
Those curious about the program and its eligibility requirements can review the website at <https://www.fcc.gov/acp>.

### Monthly Metrics and Business Data



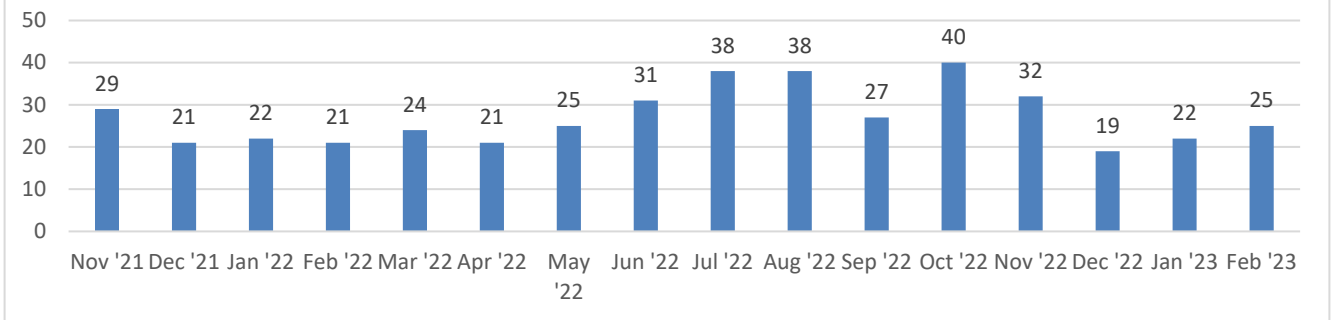
(Customer count: March 2020 – February 2023)

### Monthly New Customer Installs and Disconnects



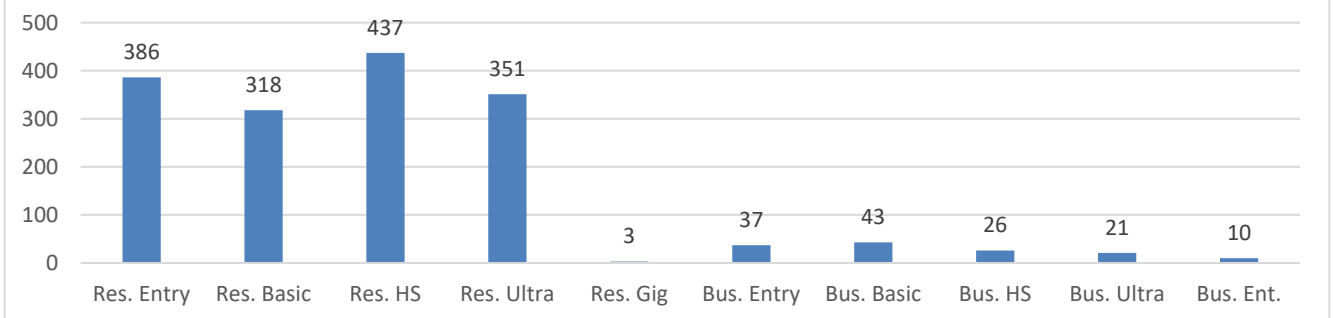
(The number of new installations and disconnects completed each month.)

### Interested Customers by Month



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

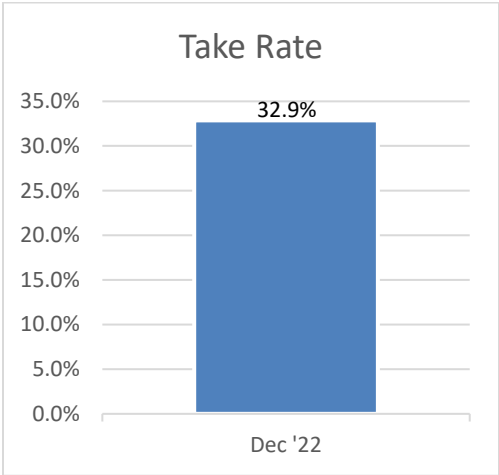
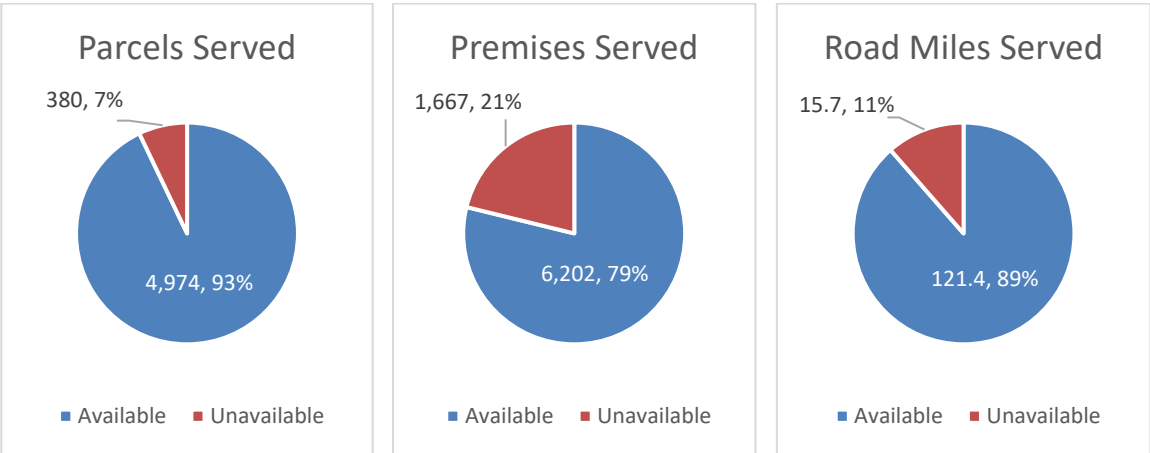
### Breakdown of Customers per Service Plan



(This is the number of each customer on our different service plans as of 2/28/2023.)



### Quarterly Metrics



*(As of 9/30/2022; updated numbers will come in a future update)*

## Appendix

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

Goal	Type	Priority	Responsible Party	Additional Info.
<b>Policies (p.39)</b>				
• Universal Access	Policy	Highest	Select Board/Town Meeting	
• Expansion outside current territory	Policy	Low	Select Board/Town Meeting	
• Support Economic Vitality, Sustainability, Equity & Inclusion	Policy	High	Select Board/Light Board/TM Economic Development	Rate subsidies in progress; update expected soon
• Affordable Housing	Policy	Medium	Select Board/Housing Groups	Rate subsidies in progress; update expected soon
• Public Safety	Policy	Medium	Select Board/Town Manager	
• Education	Policy	Medium	Select Board/School Dept.	
• Government Access (PEG)	Policy	Medium	Select Board/PAAC	
<b>Recommended metrics for tracking (p.41)</b>				
• 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	Working on this; update expected soon
• Installations	Metric	Highest	Town Staff/Light Board	Complete; will report monthly
<b>Governance (p.39)</b>				
• Track progress against completion	Metric	Highest	Light Board/Town Staff	Working on this; update expected soon
• Rate of return policy	Policy	High	Light Board/Town Staff	
• Financial goals with regular reporting	Policy	High	Light Board/FinCom	
• Retained earnings and reserve policy	Policy	High	Light Board/FinCom	

Goal	Type	Priority	Responsible Party	Additional Info.
<b>Strategic Planning Goals (p.43)</b>				
• Marketing and growth	Metric	High	Light Board/Town Staff	
• Business return	Policy	High	Light Board/Town Staff	
<b>Budgeting Process for Fiber Expansion (p.41)</b>				
• Expand to fill existing opportunities	Planning	High	Light Board/Town Staff	
• External funding sources	Research	Medium	Light Board/Town Staff	Working on this
• ARPA Relief Funds Allocation, incl. Lost Revenue	Finance	Highest	Select Board/Town Manager	Working on this
• Review/Confirm Internal Loan Findings	Finance	Highest	Financial Audit Comm/Staff	Complete
• Review and Rescind PILOF to MMN	Finance	High	Select Board/Town Manager	Complete
<b>Capital Planning Process (p.42)</b>				
• Review/Revise Debt financing schedule	Policy	Highest	Light Board/Town Staff	Working on this; update expected soon
• Quantifying cost of expansion	Planning	Medium	Town Staff	Working on this
• How to fund expansion	Planning	Medium	Light Board/Town Staff	
• Revise/refine methods for computing ROI	Planning	Medium	Light Board/Town Staff	
<b>Construction and Logistics (p.42)</b>				
• Vibratory plow – direct buried fiber cables	Operations	Medium	Town Staff	Working on this
• Revise/Refine Communication conduit construction standards and guidance	Policy	Medium	Town Staff	
• 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 G-4  
GENERAL SERVICE – ELECTRIC VEHICLE CHARGING

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 Mass DPU No. 475

Effective: January 1, 2023

 Replaces Mass DPU No. 463
 

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The Concord Municipal Light Plant (the "**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 the Customer and offered by the CMLP. The electrical connection of any equipment installed so as to use energy under this rate must be inspected and approved by the 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 separate meter will be installed by the 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

The monthly Meter Charge shall be		per month
waived for approved sub- or multi-metered	\$18.50	for demand <20 kW
loads associated with an account already	\$54.60	for demand $\geq$ 20 kW, but <200 kW
taking service under a General Service	\$441	for demand $\geq$ 200 kW
tariff		

Demand Rate

\$1.83 per billing kW

Transmission and Capacity Charge

Peak	\$0.21500	per kWh
Mid-Peak	\$0.06200	
Off-Peak	\$0.00600	

Distribution Charge

\$0.06033 per kWh

Energy Rate

\$0.08980 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 the CMLP.

### **Billing Periods**

Peak	Monday through Friday	4 p.m. to 8 p.m.
Mid-Peak	Monday through Friday	6 a.m. to 4 p.m.
Off-Peak	Monday through Friday	8 p.m. to 6 a.m.
Off-Peak	Saturday and Sunday	All day

### **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**

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**

Rate G-4 EV Charge

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.

# **CMLP Fixed and Variable Electric Costs**

April 13, 2022 Light Board Meeting

# CMLP's 2021 Electric Expenses

- In 2021 CMLP's unaudited electric expenses, including depreciation but excluding a return on ratebase, were \$30.6 million.
- How many of these expenses are fixed in nature, meaning they do not change with the amount of electricity delivered?
- How many of these expenses correlate directly with the amount of electricity delivered?
- How should CMLP collect for these expenses and how much should each customer class pay?



# Expense Types

CP-1	\$4,900,363
CP-12	\$4,510,523
Customer	\$901,038
Cust-Sec	\$43,244
Cust-wgt	\$1,035,845
Direct.ETS	\$602
Direct.HWH	\$1,491
Direct.SL	\$19,486
Energy	\$13,160,629
Expense	\$4,303,356
NCP-Input	\$1,694,935
NCP-Sec	\$64,865
<b>Grand Total</b>	<b>\$30,636,376</b>

<u>Allocator</u>	<u>Description</u>
CP-1	Average of customer peak with system annual peak.
CP-12	Average of customer peaks with system peaks during each month of the year.
Customer	Total number of customers in each class.
Cust-Sec	Weighted average number of customers served at the secondary voltage level
Cust.Wgt	Number of customers in each class adjusted by a weighting factor to compensate for the additional time and expense to serve each customer class
Energy	Total energy used by each customer class.
Expense	Blended allocator based on all non-fuel expenses
NCP-Input	Peak of each customer class, adjusted for system losses.
NCP-Sec	Peak of each customer class, adjusted for losses occurring in the secondary distribution system.

# CP-1 Expenses

<b>CP-1</b>	<b>\$4,900,362.92</b>
NBV - CP-1	\$96,224
Braintree Watson capacity & fixed costs	\$1,198,157
Hydro/Pasny capacity & fixed costs	(\$6,105)
NextEra capacity & fixed costs	\$237,240
Spot Market FCM (capacity)	\$3,374,847

# CP-12 Expenses

<b>CP-12</b>	<b>\$4,510,523</b>
Non-ISO Transmission	\$44,858
ISO/NEPOOL Transmission	\$4,228,550
Eversource Category B	\$3,264
NBV - CP-12	\$88,569
PPWR Hydro/Pasny transmission	\$145,281

# Customer Expenses

<b>Customer</b>	<b>\$901,038</b>
CARES expenses	\$675,907
Cool Concord Rebate CMLP	\$302
Customer Education	\$14,021
Customer Service and Informational	\$49,346
Electric Vehicle Level 2 Expense	\$10,750
Electric Vehicle Miles Expense	\$23,089
Energy New England-Other Power Supply Customer	\$67,995
Exp Deferred-Power Supply	\$952
Informational & Instructional	\$41,001
NBV - Customer	\$17,674

# Cust-wgt Expenses

<b>Cust-wgt</b>	<b>\$1,035,845</b>
Accounting, Collection Expense	\$251,620
Dist - Meters	\$32,251
Distr Svs - Conversions	\$13,374
Distribution - Services	\$44,250
Distribution JO Anchors & Guys	\$3,490
Distribution Line Xformer	\$51,608
Distribution Station Equipment	\$9,928
Distribution UG Conduit	\$161,664
Maint of Customer LTD Mgt Switches	\$1,965
Maint of EV Charging Stations	\$2,239
Maint of Station Equipment - Eversource customer	\$24,464
Maint OH Lines - Tree Trimming Customer	\$56,167
Maintenance of Meters	\$511
Maintenance of Overhead Lines Customer	\$73,814
Maintenance of Station Equipment Customer	\$13,343
Maintenance of Transformers Customer	\$225
Maintenance of Underground Lines Customer	\$54,997
Meter Expense	\$9,604

# Cust-wgt Expenses (Cont'd)

<b>Cust-wgt</b>	<b>\$1,035,845</b>
Meter Reading	\$15,707
NBV - Cust-wgt	\$11,939
Overhead Conductors & Devices	\$48,195
Overhead Line Expense Customer	\$3,954
Poles, Towers & Fixtures	\$19,633
SG - Maint OH lines Customer	\$7,279
SG - Maint St Lights	\$61
SG - Maint UG Lines	\$115
SG - Meter Expense	\$5,959
SG - Meter Reading	\$7,685
Small Balance Write Off	(\$9)
Station Expenses Customer	\$796
Supervision	\$44,866
Trans Station Expense customer	\$18,436
UG Conductors/FO	\$43,244
Uncollectable Accounts	\$2,266
Uncollectable Accounts - MR	\$204

# Energy Expenses

<b>Energy</b>	<b>\$13,160,629</b>
Energy New England	\$67,995
Exp Deferred-Power Supply	\$952
Exp-NEHT oth Power Supply	\$36,080
NBV - Energy	\$213,984
PILOT	\$451,500
PPWR - Projects	\$7,153,480
PPWR Spot Market Ancillary	\$5,559
PPWR Spot Market Energy	\$1,867,337
Purchase of RECs	\$3,363,741

# General Expenses

<b>Expense</b>	<b>\$4,303,356</b>
Administration & General Salaries	\$1,576,665
Contribution to the Town	(\$13,062)
Employee Benefits Training	\$62,646
Employee Injuries & Damages	\$31,794
Employee Pension & Benefits	\$1,085,552
Employee Sick Leave	\$124,249
Employee Vacation & Holiday	\$416,891
G & A IS Dept Transfer	\$145,883
G & A Town House Transfer	\$266,822
Interest on Bonds & Notes	\$95,160



# General Expenses (Cont'd)

<b>Expense</b>	<b>\$4,303,356</b>
Inventory Adjustment	\$13,385
Maint General Plant	\$120,669
Misc General Expense	\$28,730
Misc Outside Services	\$193,496
Office Supplies & Expenses	\$64,582
Outside SVS Legal	\$20,949
Property Insurance	\$50,654
SG - Maintenance	\$7,500
SG - Outside SVS	\$6,987
Transportation Expense	\$3,805

# NCP Expenses

<b>NCP-Input</b>	<b>\$1,694,935</b>
Distr Svs - Conversions	\$5,732
Distribution - Services	\$18,964
Distribution JO Anchors & Guys	\$5,236
Distribution Line Xformer	\$77,412
Distribution Station Equipment	\$14,891
Distribution Structures & Improvements	\$20,064
Distribution UG Conduit	\$242,496
Line and Station Supplies and Expenses	\$207,330
Maint of Station Equipment - Eversource demand	\$36,697
Maint OH Lines - Tree Trimming Demand	\$84,251
Maintenance of Overhead Lines Demand	\$110,722
Maintenance of Station Equipment Demand	\$20,015
Maintenance of Transformers Demand	\$3,533
Maintenance of Underground Lines Demand	\$82,495
Maintenance Supervision	\$132,202
Misc Intangible Plant	\$62,592
NBV - NCP-Input	\$14,793
Overhead Conductors & Devices	\$72,292

# NCP Expenses (Cont'd)

<b>NCP-Input</b>	<b>\$1,694,935</b>
Overhead Line Expense Demand	\$5,931
Poles, Towers & Fixtures	\$29,449
Rent Expense - MBTA	\$12,545
SG - Maint OH lines Demand	\$10,918
SG - Maint St Lights	\$92
SG - Maint UG Lines	\$172
Station Expenses Demand	\$1,194
Subtrans - Station Equipment	\$10,272
Subtrans - Structures & Improvement	\$6,423
Subtrans - Underground Conductors	\$60,013
Subtrans - Underground Conduit	\$84,900
Trans Load Dispatching	\$3,078
Trans Station Equipment	\$85,583
Trans Station Expense demand	\$27,653
Trans Structures & Improvements	\$54,631
Trans Underground Conductors	\$14,632
Trans Underground Conduit	\$10,866
UG Conductors/FO	\$64,865



# Recommendation

	Total Expense	R-1 Expense Ratios	R-1			
			Fixed	Variable	Demand	Total
CP-1	\$4,900,363	49%			\$2,424,210	\$2,424,210
CP-12	\$4,510,523	41%			\$1,861,944	\$1,861,944
customer	\$944,281	78%	\$740,978			\$740,978
cust-wgt	\$1,035,845	69%	\$719,498			\$719,498
energy	\$13,160,629	39%		\$5,094,479		\$5,094,479
NCP input	\$1,759,801	41%	\$722,926			\$722,926
Expense	\$4,303,356	65%	\$2,793,222			\$2,793,222
Direct	\$21,578	0%	\$0			\$0
<b>Total</b>	<b>\$30,636,376</b>		<b>\$4,976,623</b>	<b>\$5,094,479</b>	<b>\$4,286,153</b>	<b>\$14,357,256</b>
billing determinants			77,572	69,725,439	20,116	
units			\$/mo	\$/kWh	\$/kW	
unit charge			\$64.15	\$0.073	\$17.76	

## Sample Monthly Bill

volume	1	835	2.1	Total
cost	\$64.15	\$61.01	\$37.68	\$162.84

# Thank You!

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