CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC | BROADBAND | ENERGY MANAGEMENT

Date: February 15, 2023

To: Municipal Light Board: Brian Foulds (Chair), Wendy Rovelli, Alice Kaufman, Pamela Hill, Warren Leon

From: David Wood, Director

Subject: Agenda for Virtual Light Board Meeting **February 22, 2023, 7:30 A.M.** (Zoom link on page 2)

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

7:30 AM 2. **Meetings and Minutes** 5 Minutes Chair

March 8, 2023, March 22, 2023, April 12, 2023, April 26, 2023, May 10, 2023, May 24, 2023, June 14, 2023, June 28, 2023, July 12, 2023, August 9, 2023, September 13, 2023, October 11, 2023, November 8. 2023 & December 13, 2023.
Concord Middle School Solar Project Public Forum- February 28 @ 6:30PM – Town Hall Hearing Room

7:35 AM 3. **Time of Use Opt-out Rate** 40 Minutes Director
Discussion

Background: The Light Board has already voted in favor of offering an Opt-Out rate to those residential customers who do not wish to participate in the new Time of Use rate. Customers wishing to opt out will be required to notify CMLP of their intentions to opt out. Should the Opt-Out rate look like the current R-1 rate with capacity prices that differ based on the total volume of kWh used during the month or should the Opt-Out rate be a flat rate that does not differ with usage quantity?
Purpose: To establish a rate philosophy that the staff can use to create a Time of Use Opt-Out rate for Light Board approval.

8:15AM 4**. R-7 Rate - Heat Pump Rate** 40 minutes Director
Discussion

Background: The R-7 Electric Resistance & Heat Pump Heating Systems/Domestic Hot Water rate was adopted several years ago. The rate is for heat pump customers who install a separate meter to measure their heat pump use. The special rate allows the customer to pay the lowest tier R-1 rate for all the heat pump use recorded by the separate meter during the winter months, October 1st through April 30th.
Purpose: To determine if the R-7 rate will be eliminated and if all the customers on the rate will be transitioned to the new Time of Use rate or to the Time of Use Opt-Out rate.

8:55AM 5. **Liaison & Public Comments** 5 Minutes Chair

9:00AM 6. **Adjourn**

Distribution: Select Board (1 copy)

Kerry Lafleur	Carole Hilton	Joe Repoff	Matt Cummings
Laura Scott	Chris Carmody	Jan Aceti	Dale Hartling
Jason Bulger	Mary Hartman		

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Join by Zoom

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Link to Meeting Agenda and Meeting materials: Click Here

Link to view recordings of previous Light Board Meetings: Click Here

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Agenda Item #4

CONCORD MUNICIPAL LIGHT PLANT
ELECTRIC | BROADBAND | ENERGY MANAGEMENT

Date: September 30, 2022 (updated 1/4/2023)

To: Concord Municipal Light Board

Via: David Wood, Light Plant Director

From: Laura Scott, Power Supply & Rates Administrator

Subject: The Effect of Time of Use Pricing on Heat Pump Customers

In order for you to consider whether to eliminate the Residential Service – Electric Resistance & Heat Pump Heating Systems rate (R-7) in favor of a Time of Use structure, it would be helpful to understand the potential economic impact of such a move on the R-7 customers. The following study has been prepared to quantify those impacts.

There are 36 customers who take service under the R-7 rate schedule as of 9/1/2022. Of those, 22 customers have AMI meters that store hourly usage data. The remaining 14 have AMR meters that record only monthly total usage. Hourly usage data is needed to quantify the impact of the TOU rate on R-7 customers.

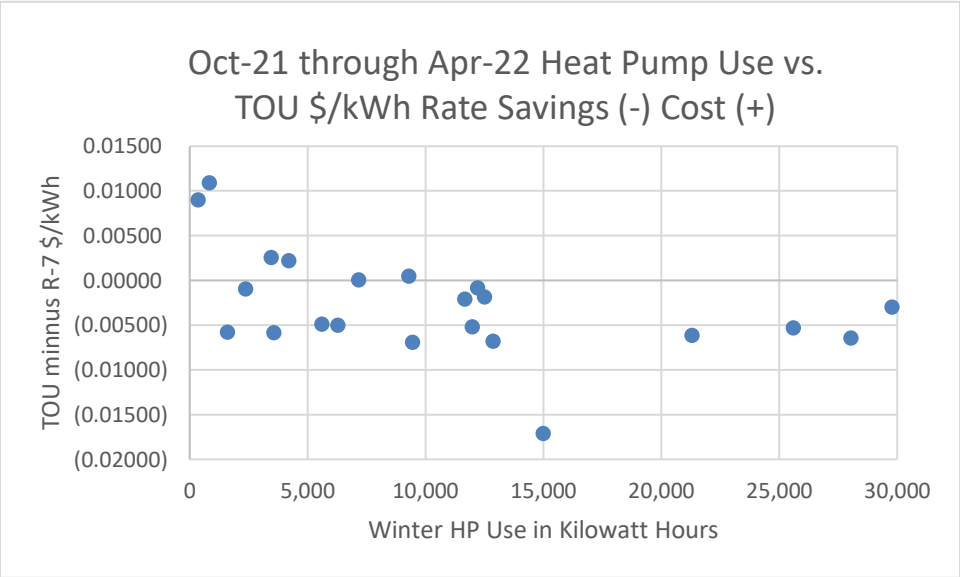
Hourly usage data was gathered for the 22 customers with AMI meters over the study period October 1, 2021 through April 30, 2022. Those are the months when R-7 customers pay the lowest tier pricing for all of the electricity usage recorded on their heat pump(s) and is also the time period when most heat pump usage occurs. From May 1 through September 30, any usage recorded on the heat pump meter is added to the usage recorded by the house meter and billed under the Rate R-1 according to the tier pricing.

By applying the appropriate TOU rate to each hour of actual usage by each of the 22 customers over the last winter, we can determine what those customers would have paid under the TOU rate and compare that against what they paid under the existing R-7 rate.

Results

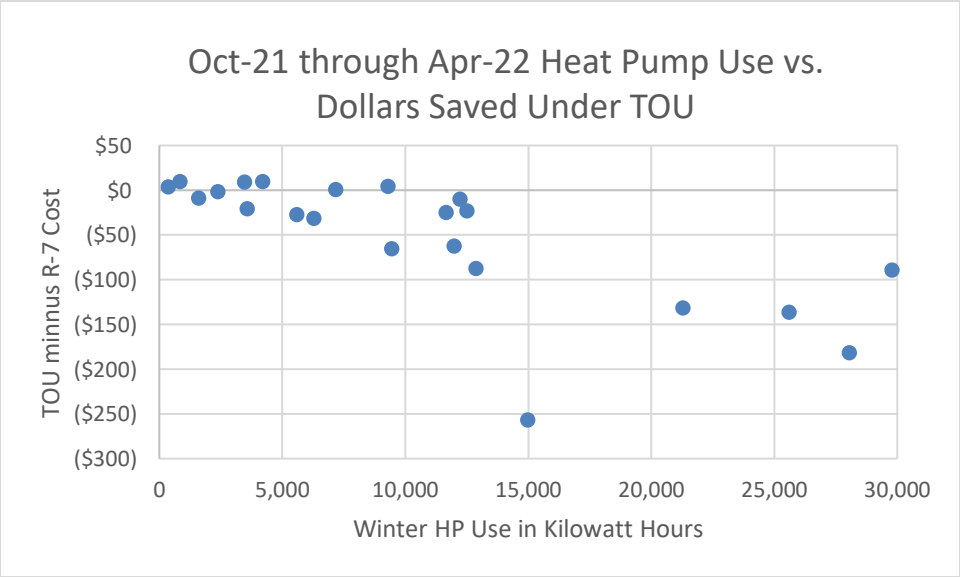
On average the 22 customers saved $0.0050/kWh under the TOU rate, although the financial impact ranged from a savings of $0.0172 to a cost of $0.0109/kWh. The customers for whom TOU was more expensive tended to be the smaller volume users. So, for even the worst-off customer, who paid $0.0109/kWh more, the cost in dollars was only $9 for the whole winter.

In the chart below the 22 customers' financial impact in $/kWh is plotted against the total use by each customer for the winter in kWh. A positive $/kWh means that TOU was more expensive for the customer. A negative $/kWh means that TOU was cheaper for the customer.



All customers using more than 10,000 kWh saw a savings.

In the chart below the 22 customers' financial impact in dollars is plotted against the total use by each customer for the winter in kWh.



The list below shows the most amount of money saved was $257 by a customer who used 14,989 kWh. The largest bill savings resulted from the largest kWh users. The worst financial impact was a $9 cost borne by the smaller users.

Customer Savings (-)/Cost (+) from TOU

Cust #	kWh	$ TOU-R7
11	14,989	($257)
6	28,055	($182)
8	25,602	($137)
16	21,301	($132)
5	29,798	($90)
22	12,883	($88)
4	9,456	($66)
20	11,987	($63)
14	6,295	($32)
10	5,609	($28)
12	11,676	($25)
7	12,510	($24)
17	3,583	($21)
15	12,224	($11)
2	1,614	($9)
1	2,388	($2)
13	7,174	$0
19	365	$3
18	9,297	$4
3	3,474	$9
9	841	$9
21	4,214	$9

Study Assumptions

The default R-7 rate used in the study was $0.16131/kWh. There were 2 billing periods for the TOU rate. An off-peak price of $0.13495 was applied between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and during all hours on weekends. All other hours were charged a rate of $0.19023/kWh.

There are 5,088 hours between midnight on October 1st 2021 and midnight on May 1st 2022. None of the 22 AMI data sets had meter readings for all 5,088 hours. The meter with the greatest number of readings was missing 3 hours, or .1%. The meter with the most missing hours was missing 696 hours, or 14%.

Customer #	Missing Hours (10/1/21-4/30/22)	Missing % (10/1/21-4/30/22)
19	3	0.1%
6	4	0%
18	6	0%
13	16	0%
16	21	0%
15	46	1%
7	67	1%
4	71	1%
2	76	1%
14	77	2%
1	79	2%
22	93	2%
12	115	2%
3	126	2%
5	129	3%
9	162	3%
10	177	3%
11	179	4%
17	204	4%
20	218	4%
8	287	6%
21	696	14%

Statistical methods were used to “fill in” the missing hours with data so that all 22 customer data sets contained 5088 values.