
Time-of-Use Rates for Delivery and Standard Offer

Reply Comments

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INTRODUCTION

On August 28, 2024, the Maine Public Utilities Commission (Commission) issued its Notice of Inquiry (NOI) in Docket No. 2024-00231 regarding time of use (TOU) standard offer and delivery rates for residential and small business customers and the possible use of demand charges for residential customers.¹ On September 12, 2024, the Commission issued a request for comments and reply comments on a number of topics related to its investigation into TOU rates and demand charges.

The Maine Office of the Public Advocate (OPA) retained Synapse Energy Economics, Inc. (Synapse) to respond to the Commission's questions and to other parties' initial comments. On behalf of the OPA, below we provide reply comments in response to parties' initial comments filed on October 2, 2024.

Our reply comments focus on strategies for most effectively achieving the Commission's objective of reducing peak demand in order to lower electricity rates by avoiding future generation and grid infrastructure investments, while avoiding customer backlash and substantial bill increases for vulnerable populations. We urge the Commission to consider all of the methods for achieving peak load reductions while avoiding negative impacts of customers, including:

- Aggressive marketing of opt-in TOU rates with significant on-peak to off-peak price differentials to encourage meaningful load shifting;
- Introducing alternative rates with the potential to produce greater load reductions, such as critical peak pricing (CPP) tariffs; and
- Testing opt-out TOU rates through a pilot to:
 - Determine how much load reduction can be expected from a mild opt-out TOU rate,
 - Assess customer acceptance of opt-out TOU rates,
 - Measure potential bill impacts on vulnerable customers,
 - Develop strategies for mitigating adverse bill impacts, and
 - Determine whether to proceed with opt-out TOU rates more broadly.

I. It is Premature to Implement Opt-Out (Default) TOU Rates

In their October 2, 2024 initial comments, parties took varying positions regarding the appropriateness of opt-out (default) TOU rates. Several parties, including Synapse on behalf of the OPA, opposed default

¹ Maine Public Utilities Commission. Docket No. 2024-00231, Notice of Inquiry, August 28, 2024, at 1.



TOU rates. Several parties also supported default TOU rates, for reasons including the effectiveness of enabling peak load and GHG reductions, concern about pilot programs being a slow and costly alternative,² and assumptions about the “ubiquitous nature of smart devices” for enabling energy shifting.³

While Synapse noted that it may be reasonable to transition customers to default TOU rates at some point in the future, we continue to caution against near-term default TOU due to the potential for adverse bill impacts on vulnerable customers and customer confusion and backlash. Further, we note that Maine does not currently have a clear understanding of the load reduction potential from opt-in or opt-out TOU rates, as these impacts have not been adequately studied. However, evidence from numerous time-varying rate programs across the country and in Canada indicate that opt-out TOU rates generally achieve much lower load reductions per participant than opt-in rates, and that CPP tariffs typically provide three times more load reductions per participating customer, as we discuss more below.

In these reply comments, we clarify our recommendations for the implementation of standard-offer (SO) and distribution TOU rates in Maine.

EDCs Should Implement TOU Rates Gradually

Synapse’s Near-Term TOU Implementation Proposal

In the near-term (e.g., the next 3-5 years), we recommend a two-pronged approach for implementing TOU rates for SO and distribution service in Maine:

- 1) Each EDC should offer an **opt-in** TOU rate with a meaningful price differential between on-peak and off-peak periods. We generally support the Acadia Center’s recommendation that the TOU periods for this **opt-in** rate should have an average price differential between on-peak and off-peak of approximately 3:1.⁴ Further, this rate should be accompanied by substantial marketing, education, and outreach activities. It should also include an evaluation to quantify the load reduction impacts from opt-in TOU.
- 2) Simultaneously, we recommend that the Maine electric distribution companies **pilot a default (opt-out) TOU rate**. This pilot should have a lower price ratio to mitigate negative impacts for those unable to shift their energy. This default (opt-out) TOU pilot is critical to:
 - a) Understand and mitigate impacts on vulnerable customers,

² Acadia Center Initial Comments.

³ NRG Initial Comments.

⁴ Initial Comments of the Acadia Center. Docket No. 2024-00231. October 2, 2024, at 3.



- b) Quantify the load reductions that would be achievable through a default (opt-out) rate,
- c) Fine-tune education and outreach campaigns,
- d) Avoid backlash against hasty TOU implementation, and
- e) Inform a future decision regarding the most effective strategy for reducing peak demand in Maine.

After implementing the default TOU pilot, the Commission should review the evidence regarding peak demand reductions from the opt-in rates versus the default pilot; customer bill impacts (particularly for vulnerable customers); customer satisfaction and understanding of the rates; and any other salient information. After considering the evidence, the Commission should determine whether to move forward with default (opt-out) TOU rates.

Mitigating Impacts on Vulnerable Customers

As noted in our initial comments, we encourage the Commission to follow California’s approach to default TOU implementation, which involved robust data collection and discussion among stakeholders regarding how to mitigate impacts on vulnerable customer populations.⁵ Before implementing default TOU in Maine, significant effort is needed to identify the customers who may experience disproportionate hardship on TOU rates and to implement mitigation measures against unnecessary hardship. Even parties whose initial comments supported default TOU also recommended that the Commission consider “advanced identification of ‘structural losers’” and “design targeted outreach to those customers with tailored solutions for conserving and shifting load.”⁶ We agree with this goal, and are concerned that subjecting structural losers to default TOU rates without such outreach and load shifting strategies risks these customers experiencing substantial bill increases that the Commission and EDCs could have anticipated and prevented.

The Need for a Default TOU Pilot

California’s robust data collection efforts included default (opt-out) TOU pilots, the purpose of which was “to study aspects of TOU that are directly impacted by the self-selection bias, and to fine-tune customer education and test system operability prior to full rollout of default TOU.”⁷ The utilities used a random encouragement design to estimate TOU load impacts, which involved selecting a group of customers to default onto the rate, and comparing the usage of those customers to a control group.⁸

⁵ Synapse Initial Comments on behalf of OPA. Docket No. 2024-00231. October 2, 2024.

⁶ NRCM Initial Comments. Docket No. 2024-00231. October 2, 2024.

⁷ California Public Utilities Commission. Decision 15-07-001. July 13, 2015, at 170.

⁸ Christensen Associates. Load Impact Evaluation of Pacific Gas and Electric Company’s Residential Default Time-Of-Use Pricing Pilot. Filed in R.12-06-013. Report dated March 16, 2020, filed on April 1, 2020.

We urge the Commission to test default TOU rates in Maine as well, as it is unclear whether a default TOU deployment is optimal for achieving the desired peak load reductions. Additional time-varying rate options (including opt-in TOU and opt-in CPP) and their peak reduction potentials are discussed below.

Customer Education and Outreach Under Opt-In versus Opt-Out

While parties have expressed concern that increasing enrollment on opt-in TOU rates requires a significant amount of customer marketing, outreach, and education,⁹ a similarly significant amount of marketing and outreach is likewise necessary under opt-out TOU rates. Opt-out rates would require a vast amount of education and outreach to inform customers about their rate options, educate them sufficiently to achieve load shifting, and to ensure that vulnerable customers are adequately prepared for the rate or successful in opting out of the rate. Again, it is far less risky – and likely more effective – to use the marketing campaign to inform engaged, responsive customers through an opt-in rate than use it to attempt to identify and reach vulnerable populations in the implementation of an opt-out rate.

The Commission Should Consider Other Rate Designs to Achieve Peak Load Reductions

Synapse recommends that Maine’s EDCs should immediately begin investigating, developing, and offering other rate options that could potentially provide similar, or even greater, load shifting results without requiring a transition to default TOU rates.

As noted in our initial comments, aggressively marketed opt-in rates may be able to achieve a similar, or even greater levels of peak load reductions as default TOU. For example, critical peak pricing (CPP) tends to produce much greater load-shifting than TOU rates, requiring fewer participating customers to achieve load reductions. For example, Nova Scotia Power’s recently-filed evaluation report¹⁰ showed that opt-in CPP customers achieved more than *four times* as much peak load reductions as opt-in TOU customers, as shown in the table below.

Table 1. TOU versus CPP Load Shifting in Nova Scotia’s Time-Varying Pricing Pilot, Year Three

Tariff	Average Absolute Reduction per Household		Average Percentage of Total Household Load Reduction	
	Morning Peak	Evening Peak	Morning Peak	Evening Peak
TOU	0.154 kW	0.153 kW	7.4%	7.0%
CPP	0.768 kW	0.943 kW	27.0%	32.2%

Source: Nova Scotia Power. *Evaluation of the Time-Varying Pricing Pilot, Phase 3. Matter M11823. July 23, 2024.*

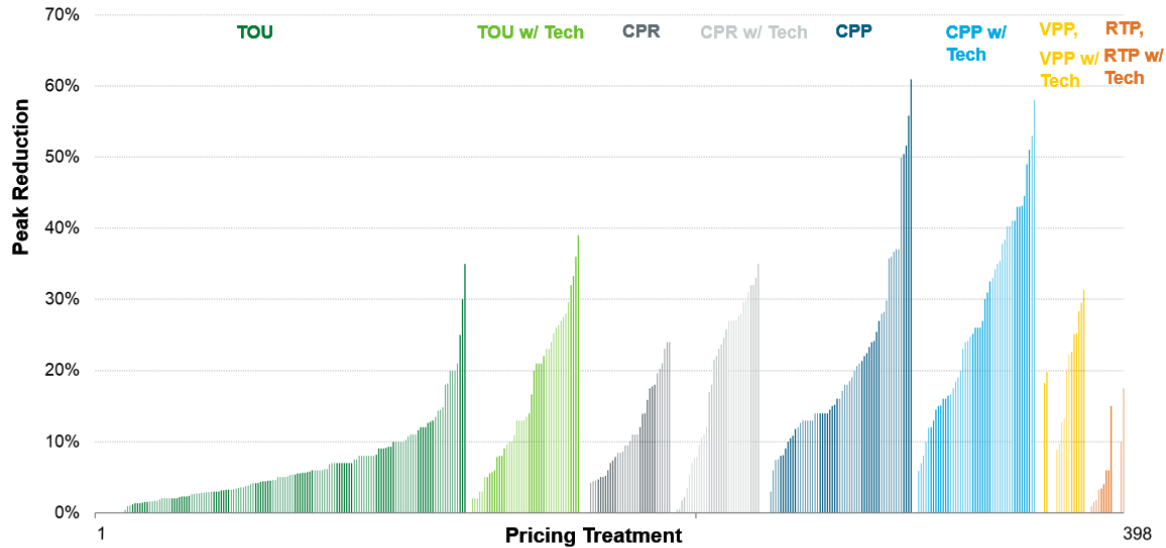
⁹ NRG Initial Comments. Docket No. 2024-00231. October 2, 2024.

¹⁰ Nova Scotia Power. *Evaluation of the Time-Varying Pricing Pilot, Phase 3. Matter M11823. July 23, 2024.* Available at <https://uarb.novascotia.ca/fmi/webd/APP/connector/0/855/dl/20240731+NSPI+to+NSUARB+TVP+Pilot+Program+Year+Three+Evaluation+Report.pdf>.



These results are consistent with the data provided by Dr. Sergici from Brattle in her October 8, 2024 presentation in this proceeding. Specifically, Dr. Sergici provided the following figure, which shows that the median TOU pilot achieved peak load reductions of approximately 7-8%, while the median CPP rate produced peak load reductions of 20-25%.

Figure 1. Brattle Peak Reduction Evidence from ~400 Treatments by Rate Type¹¹

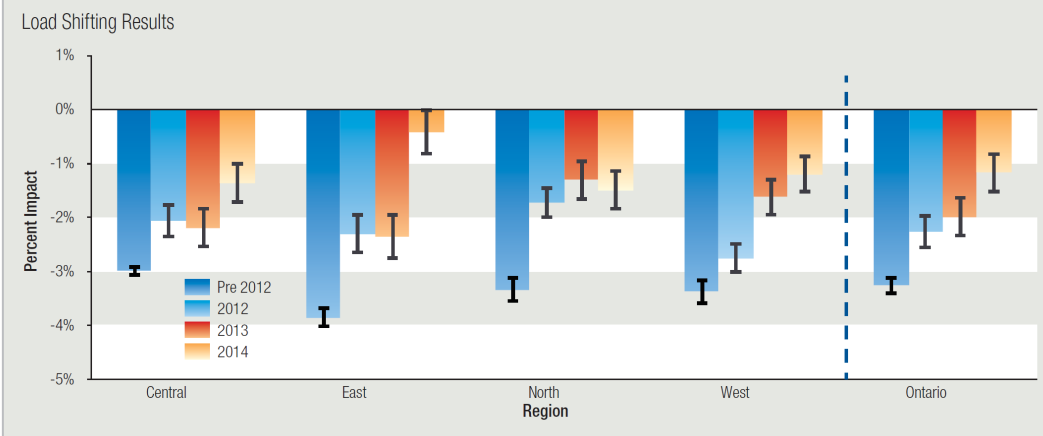


Further, Dr. Sergici’s prior research also shows that opt-out (default) rates tend to produce very low levels of load shifting because a large portion of customers remain unengaged, even though they are enrolled in the rate. These customers may be unwilling or unable to shift load, or they may lack awareness of the fact that prices vary by time of day. Further, these load impacts may decline over time. The following figure shows Brattle’s estimates for peak load reductions from Ontario’s default TOU rate. In the initial years (pre-2012), the opt-out TOU rate produced peak load reductions of approximately 3 percent. By 2014, these results had declined to approximately 1 percent.¹²

¹¹ Sergici, Sanem. Time-of-Use Rate Design and Roll-out: Learnings from Other Jurisdictions. Docket No. 2024-00231. October 8, 2024, slide 5.

¹² Lessem, N., Faruqi, A., Sergici, S., and Mountain, D. The Impact of Time-Of-Use Rates in Ontario. *Public Utilities Fortnightly*. February 2017, at 59.

Figure 2. Brattle TOU Load Shifting Results for Ontario¹³



Because opt-in rates generally achieve greater customer peak load reduction than default rates and CPP rates produce more peak load reduction than TOU rates,¹⁴ an opt-in CPP tariff with enrollment levels of approximately 10% of residential customers could potentially provide greater load shifting than a default TOU tariff in Maine.

II. If the Commission Proceeds with Opt-Out (Default) TOU Rates, Precautions are Necessary

If the Commission proceeds with implementing opt-out TOU rates, we urge that the Commission to require the EDCs to incorporate several protections in consideration of vulnerable populations and of others who may react negatively to the rate and in doing so, undermine the entire objective.

Specifically, we recommend:

- Any opt-out rate design should have a mild price differential, to mitigate the impacts on vulnerable customers, avoid rate shock, and allow customers time to develop familiarity with the rate and with load shifting strategies.
- Low-income, medically-reliant, and any other identified cross-section of vulnerable customer populations should be exempted, and instead only moved to a TOU rate if the customer affirmatively opts in. As noted above, identifying such customers requires thoughtful process and stakeholder engagement which should begin immediately. In the meanwhile, the EDCs should utilize all available information for identifying low-income

¹³ *Ibid.*

¹⁴ Wenjie Wang, Takanori Ida, Hideki Shimada, Default effect versus active decision: *Evidence from a field experiment in Los Alamos*, *European Economic Review*, <https://www.sciencedirect.com/science/article/abs/pii/S001429212030129X>. “The option to opt into an intervention may result in a limited number of participants, while the subsequent outcomes for these participants may be large because of the attention triggered by the active decision-making process.”

customers, such as the expanded eligibility criteria for Maine’s Low Income Assistance Program.¹⁵

¹⁵ MPUC Order in Docket No. 2022-00037. June 7, 2022.

