



Non-RPP Class B

# Dynamic Pricing Options

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September 9, 2024

# Purpose

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## Provide information

on the development of two alternative opt-in price plans for Class B consumers that are not eligible for the Regulated Price Plans (RPP).



## Gather feedback

on price design, customer preference, potential impacts on consumer operations and implementation considerations.

# Overview of the Non-RPP Class B Pricing Initiative

## Context

The OEB has **completed work** to assess alternatives to the current commodity pricing structure for Class B consumers that are not eligible for the RPP. This work includes a 2019 research paper, conducting further research and engaging stakeholders.

## Alternative Price Plans

The OEB has identified two possible alternative price plans for this consumer group:

- **Non-RPP Time-of-Use:** Fixed Global Adjustment (GA) price depending on the period of day.
- **Real-Time Price:** Hourly GA price that correlates with Ontario demand.

## Benefit

Alternative price plans:

- Could assist these consumers in **better managing energy costs** relative to the current approach
- Enable **customer choice**
- May support the unique **nature of their business operations**

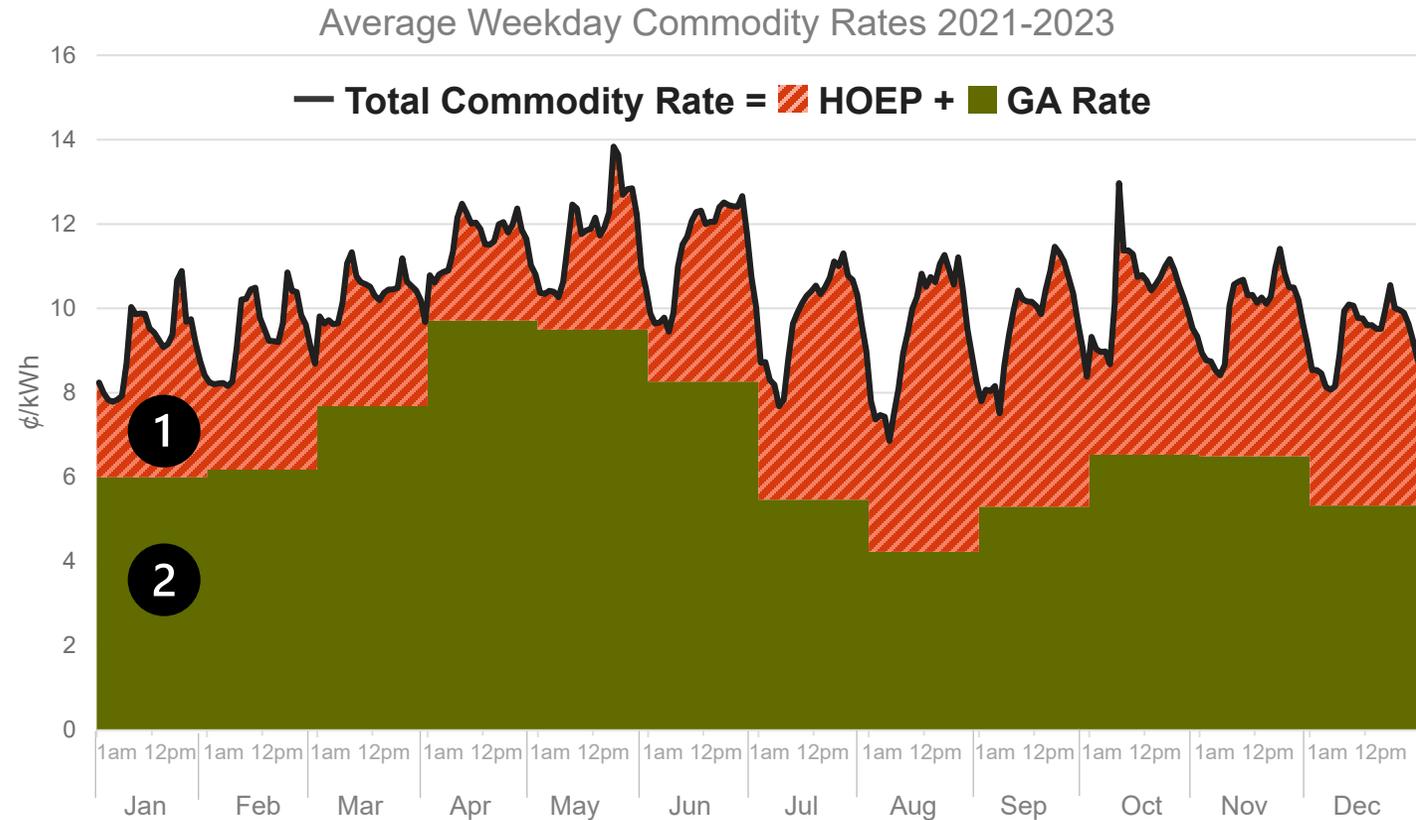
# Current GA rates for Non-RPP Class B

## Issue

Class B consumers not eligible for RPP prices pay commodity costs through two parts:

- 1 Hourly Ontario Energy Price\* (HOEP); and
- 2 Global Adjustment (GA).

Since GA is inversely related to HOEP\*, the monthly value is highest during the shoulder seasons when HOEP is low and lowest during peak months when HOEP is high.



\* HOEP will be retired and replaced by the Day-Ahead Market Ontario Zonal Price (DAM OZP) plus the Load Forecast Deviation Charge (LFDC) under the anticipated implementation of Independent Electricity System Operator (IESO) Market Renewal Program in May 2025.

# Objectives of the Non-RPP Class B Pricing Initiative

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The OEB is seeking to **identify an alternative opt-in price plan** (or plans) for collecting GA from non-RPP Class B consumers that achieves the following objectives:



**Cost Reflective**

aligns consumers' prices with the costs that their electricity use imposes on the electricity system.



**Minimize Short-Term Disruption**

avoids significant bill impacts in the short term for non-RPP Class B consumers that do not choose an alternative price plan.



**Feasible Implementation**

is feasible to implement provincewide.

# Alternative opt-in price plans

Based on an analysis of **Advanced Metering Infrastructure (AMI) data** as well as input from associations representing non-RPP Class B consumers, the OEB has identified two possible alternative price plans for this consumer group in addition to the current GA rate.

## Default Option Current GA Rate

Based on the **applicable GA charge** published by the IESO.

The GA rate is lower when electricity demand is high, incentivizing consumption when it will drive higher system costs.

## Option 1 Non-RPP Time-of-Use (TOU)

Fixed GA price depending on **period of the day, set once a year**.

Conceptually similar to Time-of-Use and Ultra-Low Overnight price plans available to residential and small business customers.

## Option 2 Real-Time Price (RTP)

Hourly GA price that correlates with real-time Ontario demand, **set 24 hours in advance**, once a day.

This GA rate is higher when electricity demand is high, incentivizing efficient consumption of electricity.

# Who are Non-RPP Class B consumers?

These consumers are primarily made up of **large retail, office buildings, schools, hospitals and small manufacturers**. This is a diverse group with differing load profiles and business needs.

Description		Commodity Prices		
<b>Class A</b>	General Service >1MW*		HOEP**	GA paid via Industrial Conservation Initiative
<b>Class B</b>	RPP	Residential General Service <50kW***	Selection between Tiered, TOU or ULO rate options	
	<b>Non-RPP</b>	<b>Everyone else****</b>	<b>HOEP</b>	<b>Class B GA rate</b>

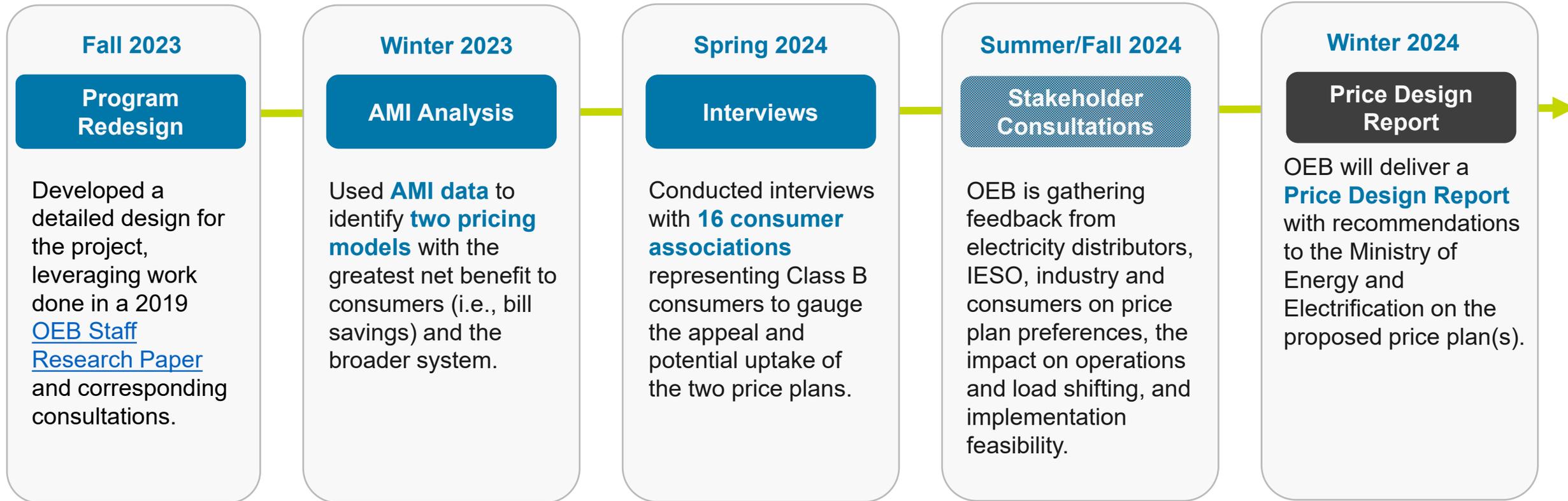
\*Consumers in select industries with an average monthly maximum hourly demand of 500kW-1MW can also opt in to Class A. See [O. Reg. 429/04](#) for details.

\*\*HOEP will be retired and replaced by the DAM OZP plus the LFDC under the anticipated implementation of IESO Market Renewal Program in May 2025.

\*\*\*See [O. Reg. 95/05](#) for more detail regarding RPP eligibility.

\*\*\*\*Typically consisting of consumers who are General Service >50kW.

# Project plan



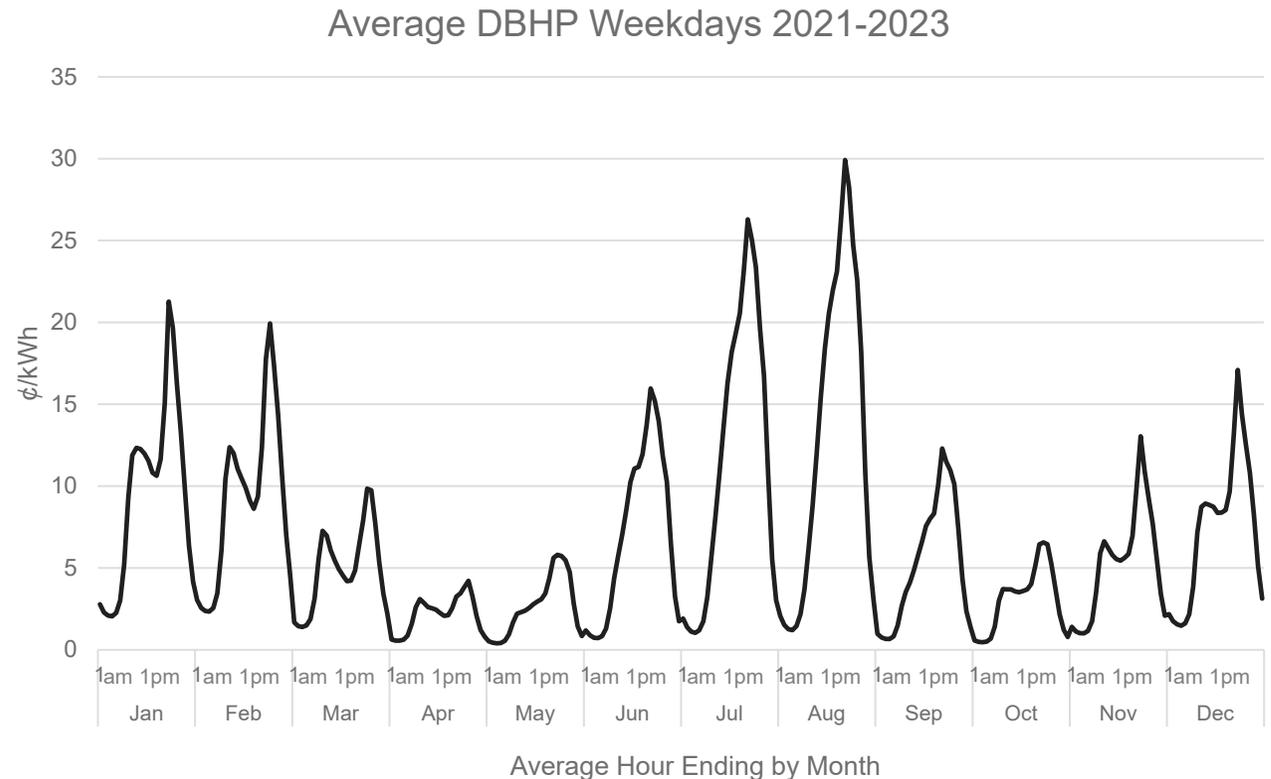
# Developing alternative price plans

The basis of all alternative price plans considered is the Demand Based Hourly Price (DBHP).

The DBHP was developed from the demand-shaped prototype described in a 2019 [OEB Staff Research Paper](#). This paper examined various price plans to recover GA from non-RPP Class B consumers.

$$\text{DBHP} = \text{coeff} * \text{demand}^w$$

The DBHP incentivizes demand shifting (avoiding capacity costs incurred) while maximizing consumer benefit (the value of electricity to customers) by concentrating dollars to periods of high provincial electricity demand.



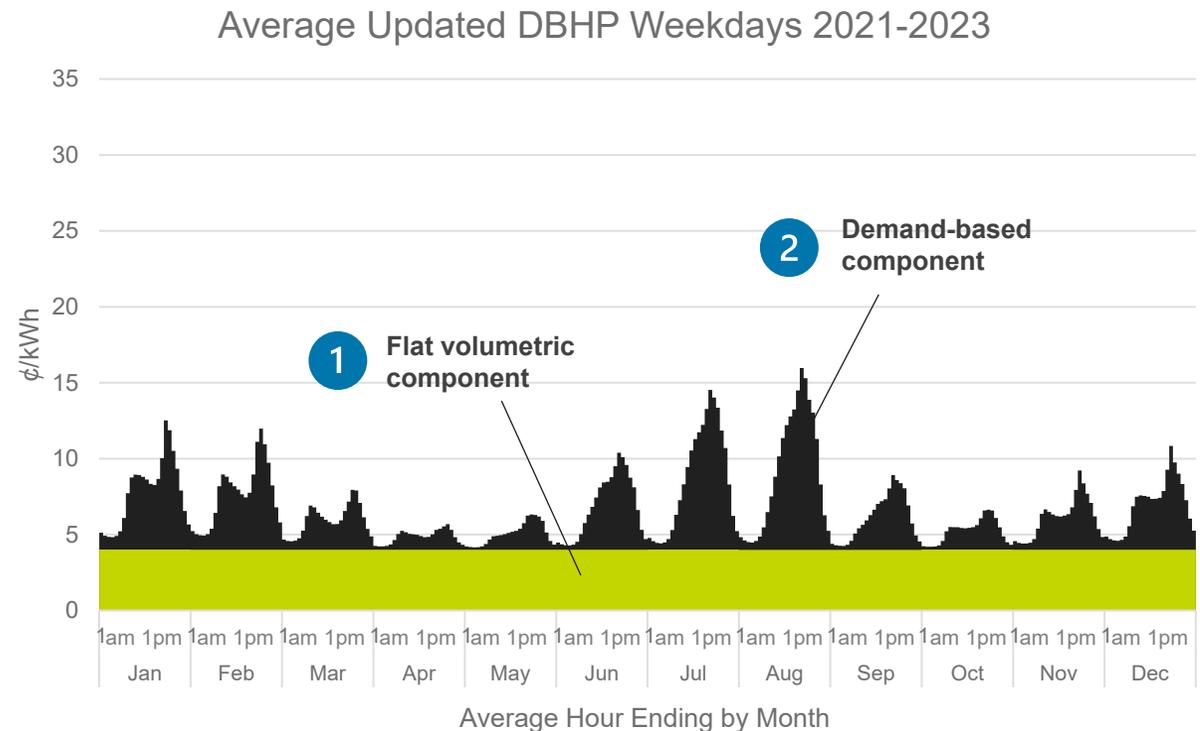
# Developing alternative price plans

The DBHP was updated to ensure that consumers appropriately contribute to fixed system costs. The resulting rate is less volatile and more cost reflective.

The updated DBHP consists of two components:

- 1 a **flat volumetric charge** (\$/kWh) to recover fixed costs based on total energy consumed.
- 2 a **demand-based component** to recover capacity costs based on customer contribution to periods of higher provincial energy demand.

Using the marginal cost of new capacity, the updated DBHP distributes 40% of GA according to the demand-based component and 60% of total GA based on total energy consumed (flat volumetric rate).



# Developing alternative price plans

Based on the updated DBHP, the OEB developed the following price structures:

## Time-of-Use (TOU)

The price in each period is based on the average DBHP during that period.

## Real-Time Price (RTP)

The price in each hour is based on the DBHP in that hour.

**TOU1**

Off:Mid:On  
ratio of  
1:3:4  
based on  
DBHP

**TOU2**

Off:Mid:On  
ratio of  
1:3:10  
based on  
DBHP and  
RPP Pilots

**TOU1-  
CPP**

TOU1 with  
critical  
peak  
pricing  
events

**TOU2-  
CPP**

TOU2 with  
critical  
peak  
pricing  
events

**RTP100**

100%  
demand-  
based rate

**RTP50**

50%  
demand-  
based,  
50% flat  
volumetric

**RTP40**

40%  
demand-  
based,  
60% flat  
volumetric

**RTP30**

30%  
demand-  
based,  
70% flat  
volumetric

Note that all TOU price plan periods are based on previous load studies and do not vary by season. Periods are defined the same as current Ultra-Low Overnight (ULO) price plan periods without a separate overnight price period (weeknights and weekends are both off-peak). Based on [Design of an Optional Enhanced Time-of-Use Price \(oeb.ca\)](https://www.oeb.ca/design-of-an-optional-enhanced-time-of-use-price)

# Developing alternative price plans

All price plans were shown to have minimal short-term disruption. **TOU1** and **RTP40** were chosen for further analysis and discussion with stakeholders since they best align consumer prices with system costs and have the potential to maximize long-term benefits.

<b>TOU1</b>	<b>TOU2</b>	<b>TOU1-CPP</b>	<b>TOU2-CPP</b>	<b>RTP100</b>	<b>RTP30</b>	<b>RTP40</b>	<b>RTP50</b>
Off:Mid:On ratio of 1:3:4 based on DBHP	Off:Mid:On ratio of 1:3:10 based on DBHP and RPP Pilots	TOU1 with critical peak pricing events	TOU2 with critical peak pricing events	100% demand-based rate	30% demand-based, 70% flat volumetric	40% demand-based, 60% flat volumetric	50% demand-based, 50% flat volumetric

# Price plan options

The OEB is seeking input on the design of these optional plans for non-RPP Class B consumers.

## Default Option Current GA Rate

**Only option** currently for non-RPP Class B consumers.

- Based on the applicable GA charge published by the IESO

## Option 1 – TOU1 Non-RPP TOU

Non-RPP TOU is a simplified and predictable version of **daily demand conditions**.

- Fixed GA price depending on period of the day, set in advance
- Aligns higher prices with periods of higher demand (on average)
- Fixed prices provide certainty to consumers
- Predictable price periods allow for scheduling of programmable load

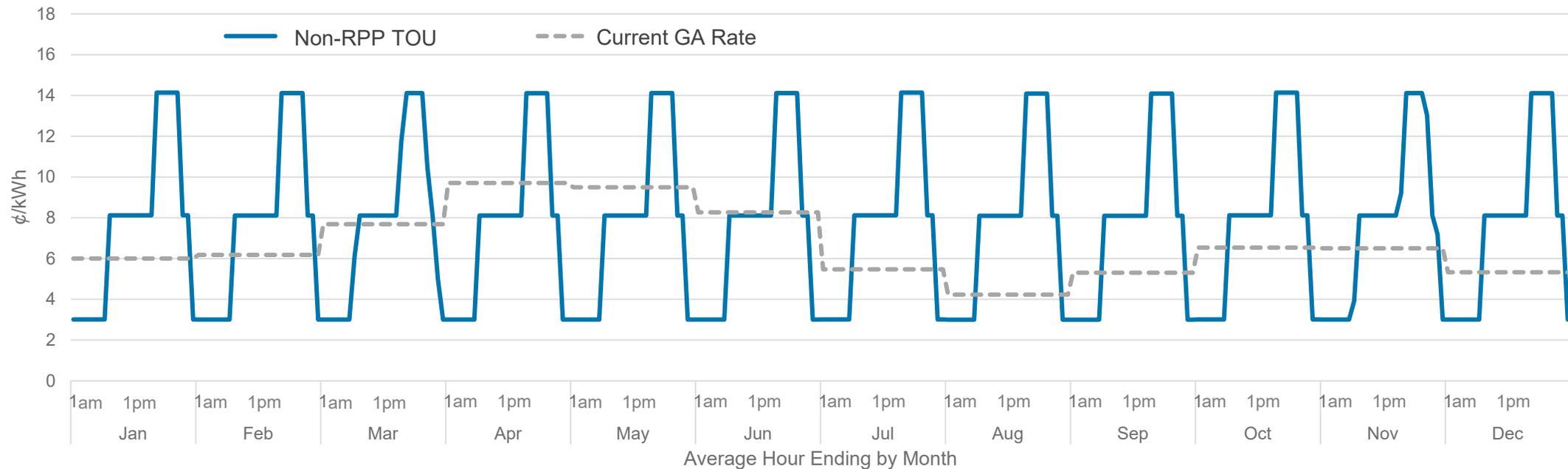
## Option 2 – RTP40 Real-Time Price (RTP)

RTP communicates **near real-time demand** conditions to consumers.

- Day ahead hourly GA price that is correlated with Ontario demand
- More cost-reflective than Non-RPP TOU and will remain cost reflective over time
- Large differences between high/low prices allows for significant savings for consumers who can shift demand during high price periods (primarily driven by seasonal variations in load from changes in weather)

# Option 1: Non-RPP Time-of-Use (Non-RPP TOU)

- Offer a **simplified TOU** price plan for non-RPP Class B consumers.
- These periods are similar to the **ULO Price Plan** for RPP consumers.
- The TOU periods do not vary between summer and winter.

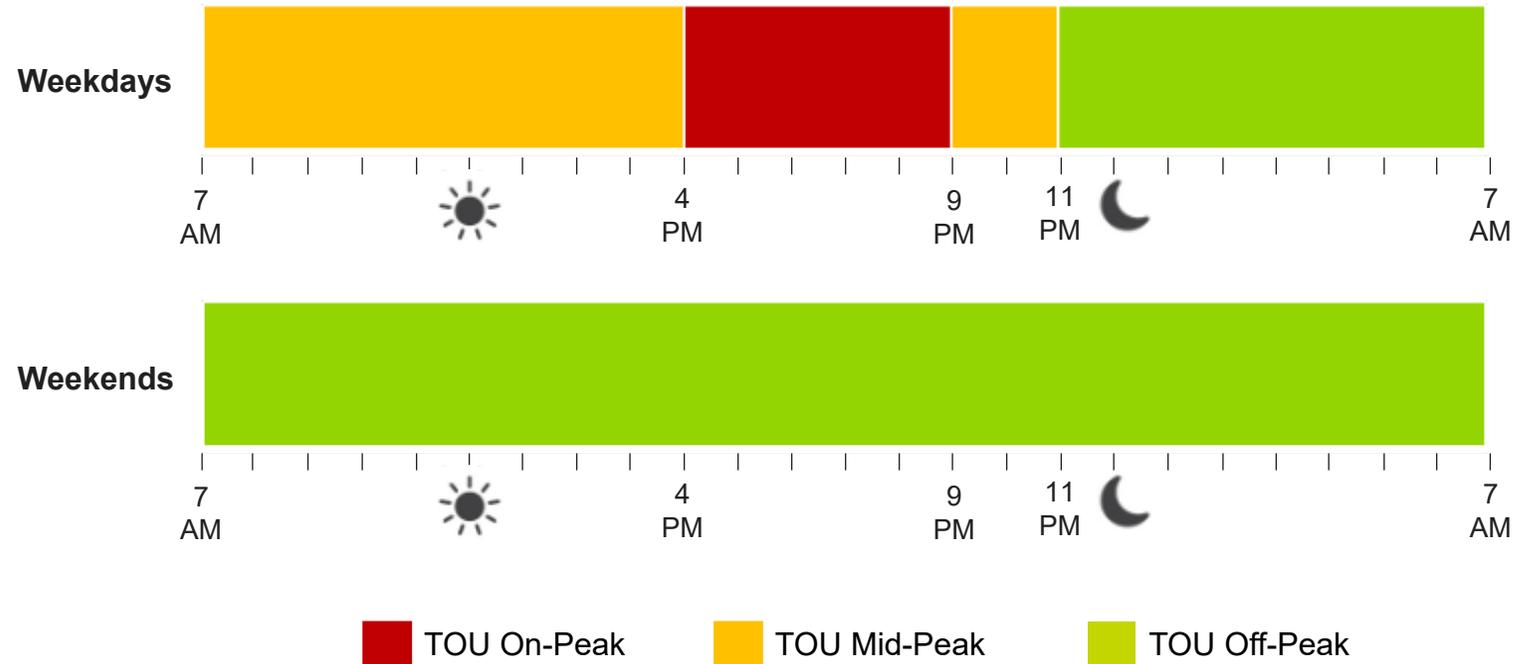


\*The time periods are based on previous load studies and do not vary by season. Based on [Design of an Optional Enhanced Time-of-Use Price \(oeb.ca\)](https://www.oeb.ca/design-of-an-optional-enhanced-time-of-use-price)

# Option 1: Non-RPP TOU

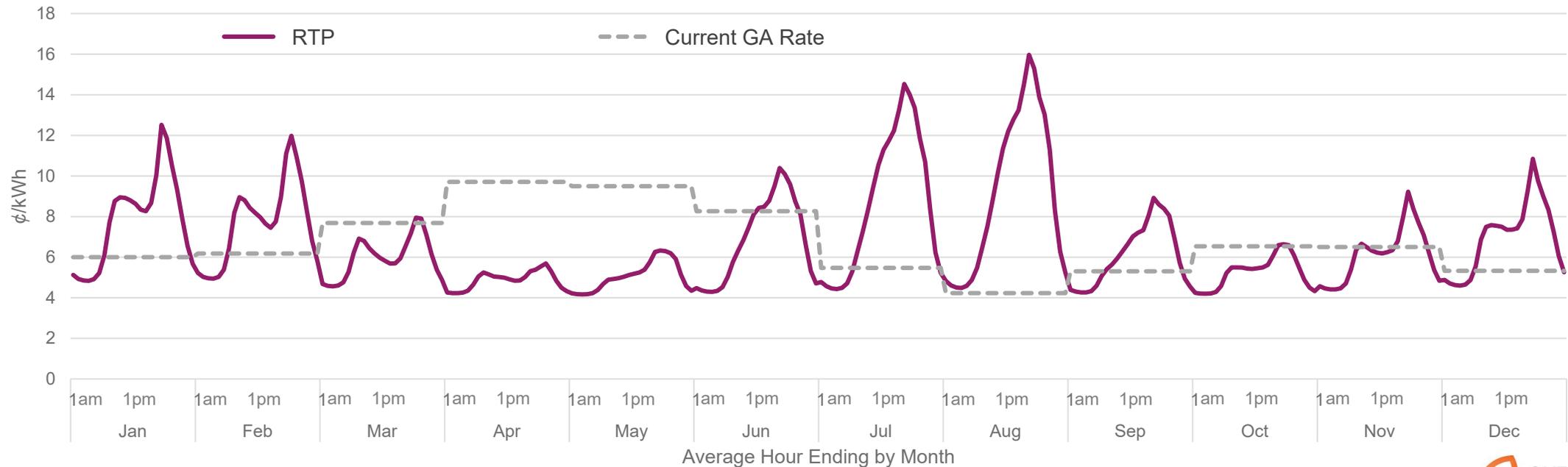
This new Non-RPP TOU price option includes:

- **On-Peak:** 4 p.m. – 9 p.m., weekdays
- **Mid-Peak:** 7 a.m. – 4 p.m., and 9 p.m. – 11 p.m., weekdays
- **Off-Peak:** 11 p.m. – 7 a.m., weekdays, and all weekends and holidays



# Option 2: Real-Time Price (RTP)

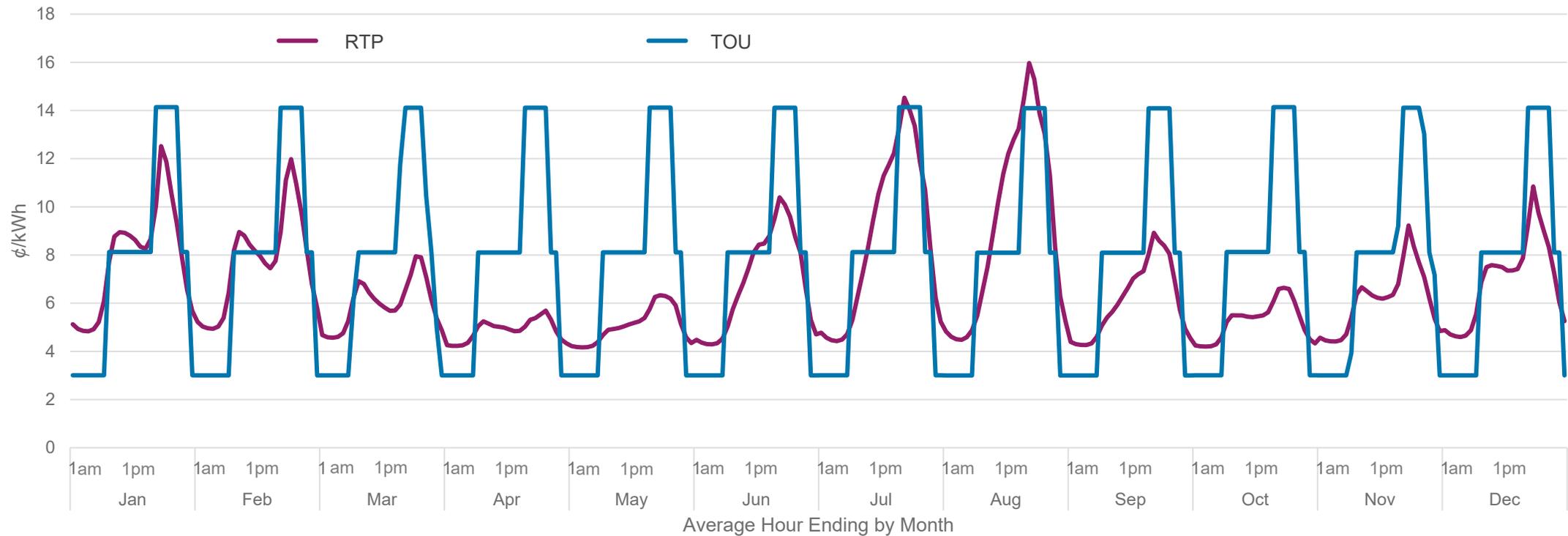
- Offer a **RTP** to customers as an alternative mechanism through which to pay GA.
- Prices are hourly and would be released a day ahead, depending on **real-time grid conditions**.
- Captures seasonal and intra-daily changes in demand to **offer an improved price signal** compared to rate plans available today.



# Rate alternatives summarized

**Option 1: Non-RPP TOU** is a **simplified and predictable version** of daily demand conditions.

**Option 2: RTP** communicates **near real-time demand conditions** to consumers.



Note that this graph represents the **average price** in each hour for the month. **Actual prices for the RTP would fluctuate based on demand.** Please see slides in appendix for more detail.

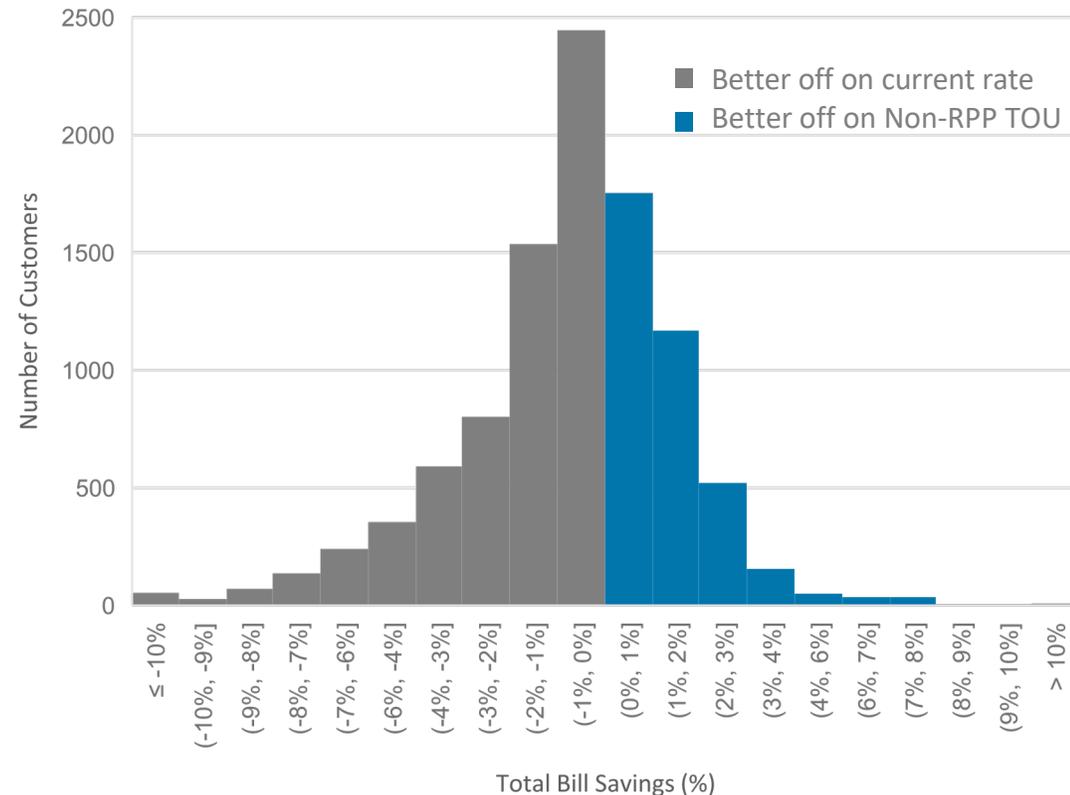
# Bill impacts of **Non-RPP TOU**

Assuming no change in their load profile, about **one third** of customers\* would likely see **savings** on their energy bill. These customers may have HVAC dependent loads, but their consumption during peak is lower than the provincial average.

The remaining **two thirds** would likely be better off remaining on the current GA rate.

If all likely adopters\*\* were to opt into this price plan, the bills of the remaining customers on the current GA rate would only **increase by 0.3%**.

### Histogram of Total Bill Savings (%)



\* Bill impacts are based on an analysis of an extensive dataset of hourly consumption data that includes more than half of Class B customers not enrolled in RPP price plans.

\*\*Likely adopters are defined as consumers who would see 5% savings or more for annual bills over \$150,000, and annual savings equal to \$1,000 or more for annual bills less than or equal to \$150,000.

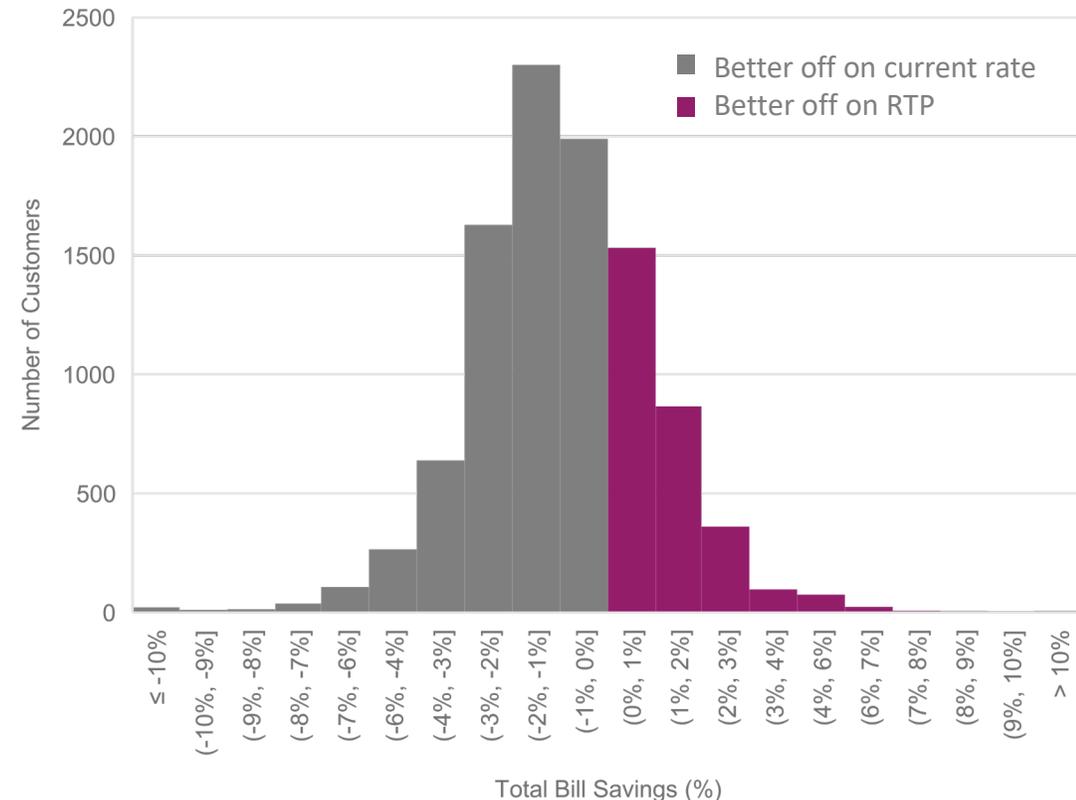
# Bill impacts of RTP

Assuming no change in their load profile, about **one third** of customers\* would likely see **savings** on their energy bill. These customers have flatter load shapes that typically don't follow the standard provincial HVAC load profile.

The remaining **two thirds** would likely be better off on the current GA rate. These customers' load varies more with weather (i.e., is more dependent on HVAC).

If all likely adopters\* were to opt into this price plan, the bills of the remaining customers on the current GA rate would only **increase by 0.2%**.

### Histogram of Total Bill Savings (%)



\* Bill impacts are based on an analysis of an extensive dataset of hourly consumption data that includes more than half of Class B customers not enrolled in RPP price plans.

\*\*Likely adopters are defined as consumers who would see 5% savings or more for annual bills over \$150,000, and annual savings equal to \$1,000 or more for annual bills less than or equal to \$150,000.

# Interviews: Estimating customer uptake

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The core objectives of the interviews were to learn:

1

The price plan **most likely to appeal** to non-RPP Class B consumers and the primary motivations driving these preferences.

2

What **tools or information** would assist this consumer class in selecting an alternative price plan and what does their decision-making process look like?

3

The **degree of electricity** cost savings that would motivate a change in price plan.

4

The **indicative trends or motivations** by sectors and the nature of potential price response (the ability to adapt their operations).

# Interview findings

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The findings were as follows:

## Price Plan Design

Consumers most interested in **stability and certainty** prefer Non-RPP TOU.

Consumers with more control over their loads or that can **tolerate more variability** in their electricity price were willing to consider RTP.

## Selection Process

Most organizations are resource-constrained, lack dedicated energy analysis resources and require a **bill calculator and other resources** to support their decision-making processes.

## Rate of Adoption

Most interviewees indicated that a **small annual percent savings** to their electricity bill could motivate them to opt into an alternative rate.

Some customers indicated that they may be able to switch in the more medium-to-longer term if their operations enable them to load shift.

# Engagement to date

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<b>Entities</b>	<b>Engagement Activities</b>
<b>Non-RPP Class B Consumers</b>	Interviewed consumers to understand factors affecting uptake and illustrate bill impacts using historical AMI data.
<b>Electricity Distributors</b>	Engaged in discussions with electricity distributors to identify operational impacts related to the implementation of one or both alternative price plans.
<b>IESO</b>	Convened bi-weekly meetings with the IESO to discuss price setting and other relevant factors.

# Discussion questions

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## Price Design Feedback:

- What are your initial thoughts upon hearing about these price plans?
  - How effectively do the proposed alternative rate design options address the identified problem (i.e., GA costs on bills are not reflective of demand)?
  - What additional factors or information should the OEB take into account as we develop our Price Design Report to the government?
  - Are there any other alternative rate design options that the OEB should explore?
  - What information or tools would non-RPP Class B consumers require to choose the most suitable price plan?
  - What are the unique challenges and opportunities presented by offering Customer Choice to non-RPP Class B customers?

# Discussion questions

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## Implementation Considerations and Feasibility:

- Do you foresee any implementation challenges associated with one or both of these price plans?
  - How do you define a feasible implementation from your perspective?
  - Is there a price plan that appears more challenging to implement at this stage? If so, which one and why?
  - Are there concerns or implementation issues in relation to making these price plans available to all non-RPP Class B consumers?

# Thank you and invitation for written feedback

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- Thank you for your time and participation today.
- OEB staff invites your written feedback on its proposed price plans by **October 4, 2024**.
- Details on how to submit your feedback are provided in the letter to stakeholders dated July 22, 2024, which can be found on the [OEB's Dynamic Pricing Options for Non-RPP Class B Electricity Consumers page](#).
- Please consider the questions that were discussed today. Please also feel free to comment on other aspects of the price plans as you see fit.
- Stakeholder feedback will inform the OEB's consideration of options and next steps.

# Next steps

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Next step	Timeline
Interviews with non-RPP Class B consumers	Fall 2024
Development of OEB Price Design Report	Winter 2024

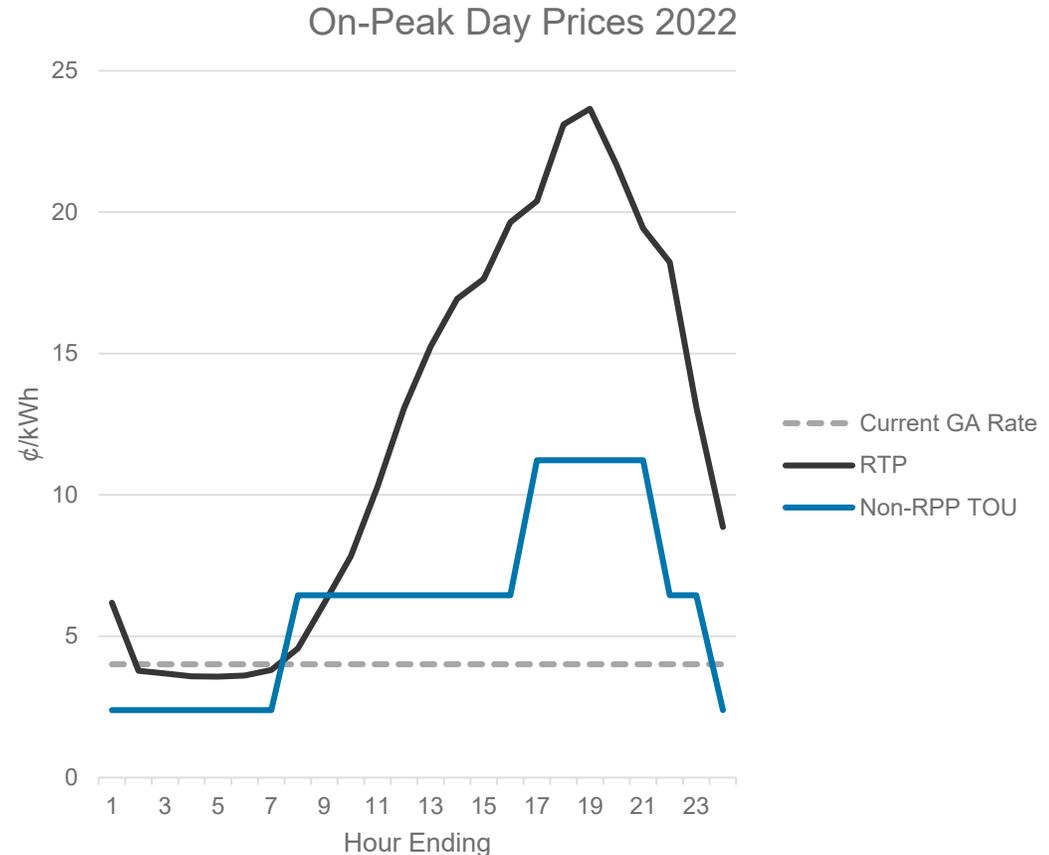
# Appendix

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# Rate alternatives on historical on-peak day

What price signals do these alternative rates provide on an on-peak day?

- Current GA rate (4¢/kWh) significantly **underestimates supply cost**.
- RTP **properly reflects the peak demand conditions** on the grid.
- Non-RPP TOU **systematically underestimates** the supply cost on the peak day since the prices do not vary by day or season.



# Rate alternatives on historical off-peak day

What price signals do these alternative rates provide on an off-peak weekday?

- Current GA rate (8.5¢/kWh) **significantly overestimates** supply cost
- The RTP remains relatively flat reflecting the low demand conditions on the grid.
- During the shoulder season, Non-RPP TOU rates are found to **systematically overestimate** the cost of supply since they average both peak and off-peak days.

