Ontario Energy Board
Commission de l'énergie de l'Ontario

RPP Roadmap: Update on RPP Pilots

Purpose and Overview

Provide an update on the current state of RPP pilots

Presentation Overview:

1. Current Status of Pilot Projects
2. Value of the Pilot Model
3. Recap of the RPP Roadmap and Pilot Guidelines
4. Pilot Proposals received to date
5. RPP Pilot Timelines
6. Next Steps

Project Overview and Current Status

- The OEB is undertaking pilot programs as part of a multi-year initiative to redesign the RPP to provide better value and support public policy objectives.
- Last summer, the OEB invited distributors to propose pilots that would test the effects of different rate structures and customer response to changes in the information they receive about their consumption habits and prices they pay. Focus is RPP residential customers on TOU.
- The OEB received 5 applications from LDCs across Ontario:
  - Three pilots are approved by OEB for implementation
  - Two more are undergoing revision by distributors following OEB feedback;
- Standardized contract and reporting framework in place
- Distributors working toward implementation and customer recruitment over the fall.
- Pilots to be in place by early 2018, and run for a year.
- Ability for more pilots to be considered once initial applications are processed.
- Detailed results of currently proposed pilots expected in 2019.
- These approved pilot projects will allow the real-world experience and preferences of more than 18,000 customers to inform how electricity is priced for RPP customers in the future, unlocking more value for them and the electricity system as a whole in the process.

Value of the Pilot Project Model

- Alternatives to the current mandatory TOU price structure will benefit from real-world deployments at pilot scale to learn more about customer behaviour and acceptance.
  - Testing of certain pricing approaches, such as flat rates or very low overnight costs, in conjunction with planned surveys on demographic attributes and usage habits, will help to inform how different customer types can take advantage of departures from the current TOU structure.
  - Critical Peak Pricing, Enhanced TOU and Summer "Super-Peak" pilot testing will inform the extent to which modifications to TOU can better support policy objectives.
- Price plans will still be built to be revenue neutral (on average) relative to the status quo RPP time-of-use prices. Enrolled customers will pay actual pilot prices. Attrition and opt-out will help to gauge customer acceptance, understanding and willingness to pay for certain price features.
- Pilots provide value by delivering reliable, reproducible results at a manageable scale. Changes to RPP price plans in the absence of evidence about customer understanding and price responsiveness can lead to cross-subsidies between customers and jeopardize cost recovery – which, under the Fair Hydro Plan, could add refinancing costs beyond those forecast.
- Ways to deliver both customer choice and greater system value nevertheless remain a priority. IESO system planning report indicated in September that current supply situation is expected to be adequate "generally over the next decade across all outlooks".
- Time is therefore available to accommodate a project timeline that will support better planning and delivery of pilot projects, leading to more robust pricing alternatives in future.

Background: The Role of the RPP Roadmap and Pilot Guidelines

The OEB released the Regulated Price Plan Roadmap in November 2015

The Roadmap sets out “a five-point plan to be implemented over the course of the next 3 to 5 years. Through this plan, the OEB intends to redesign the RPP to better respond to policy objectives, improve system efficiency, and give greater consumer control.”

1. Renew the RPP objectives (completed)
2. Empower Consumers: Enhancing energy literacy and non-price Tools (currently underway)
3. Implement price pilots (currently underway)
4. Engage with low volume business consumers (early stages)
5. Work with government to reduce barriers

The renewal of RPP objectives was established within the Roadmap and focused on setting prices that, besides recovering costs, support efficient system operation and investment and encourage customers to reduce their peak demand.

Background: The Role of the RPP Roadmap and Pilot Guidelines

- The **RPP Pilot Guidelines** are a component of the Roadmap that invites distributors to test new priority price and non-price options through pilot projects, which will be used to inform new price plans that could be made available to all RPP-eligible customers. A December 2016 directive from the Minister of Energy established a framework by which the OEB could approve pilot projects to be funded through the IESO's Conservation Fund.

OEB's Priority Pricing Options (July 2016 guidelines):

- **Critical Peak pricing (CPP)** - overlays TOU with different prices for specific hours of the year (e.g., 2 pm to 6 pm on a hot summer weekday) when the electricity system is stressed and/or hourly energy market prices are high. CPP can be **quick-ramping** (CPP imposed at short notice, and used in conjunction with automation); in some approaches both CPP price and duration may also vary.
- **Enhanced TOU**: the on-peak to off-peak price ratio is higher, but the pricing periods remain unchanged.
- **Super Peak TOU**: has a high ratio (super) peak during the inner summer or winter months and no mid-peak period.
- **Evening Peak TOU**: shifts the summer peak later in the day to match the system peak.
- **Seasonal TOU**: eliminates the mid-peak period and introduces flat rates during the shoulder seasons of spring and autumn.

Priority non-price options :

1. An **information** option can test the impacts that giving real-time or delayed information to customers about their consumption and other feedback can have on their behaviour – mobile apps, monthly reports, consumption tips etc.
2. An **automation** option is often a form of technology (e.g., smart thermostat, load control devices), whether controlled by the user or the utility, or pre-set. Interest in multi-appliance, customer-programmed, and quick-ramping automation.

In addition, distributors were invited to propose their own pricing scenarios as part of the pilot proposal process.

RPP Pilot Proposals: Current Status

	Pilot Approval Date	Price Experiments	Non-Price Experiments	Target Sample Size	Estimated Budget (including in kind contributions)	IESO Contract Executed?
London Hydro	April 13, 2017	1. Quick-Ramping Critical Peak Pricing	1. Appliance and Load Control Technology 2. Real-time information feedback through a home energy management system	2,000+	$2.731M	Yes
Alectra Utilities	April 25, 2017	1. Enhanced Time-of-Use 2. Enhanced TOU with Low Overnight 3. Variable Peak Pricing with CPP	1. Real-time information feedback through a home energy management system 2. Targeted communications intended to reduce on-peak consumption	14,000	$9.39M	No
Oshawa PUC	July 27, 2017	1. Super Peak TOU 2. Seasonal TOU with CPP	1. Real-time information feedback delivered through the customer's choice of e-mail, web, text, or physical report.	2,000	$5.795M	No
CustomerFirst*	Awaiting Revised Application	1. Enhanced TOU 2. Seasonal TOU	1. Pre-programmed smart thermostat	TBD	TBD	
Hydro One	Awaiting Revised Application	TBD	TBD	TBD	TBD	

London Hydro Pilot Overview

Expected Participants:

- At least 2,000 customers in total, with targets of at least 1,000 participating in the non-price experiment, 500 participating in the price experiment and 500 participating in both the price and non-price experiment.

Price Experiment:

- **Quick-ramping CPP with automation** – Customers who participate in this experiment will be subject to short critical peak periods (2 hours). During these periods load control technologies (that are a requirement of this rate option) will reduce customer demand. Targeting 24 events in both the summer and winter respectively.

Non-Price Experiment:

- **Appliance and load control devices** – As referenced above

- **Real-time information feedback** – Customers will receive access to personalized data and reports via an on-line and mobile application that will track energy usage, savings, provide TOU price alerts and energy advice/tips.

Proposed Budget:

- Total proposed budget of $2.73M of which $2.37M is budgeted to be funded through the Conservation Fund.

Alectra Utilities Pilot Overview

Number of Expected Participants:

- 14,000 customers in total; a detailed breakdown of how customers will be allocated to information and communication experiments is outlined in Appendix B.

Price Experiments:

- **Enhanced TOU** –higher on-to-off-peak differential; TOU periods (i.e. hours when off-peak, mid-peak and on-peak prices in effect) will remain unchanged.
- **Enhanced TOU with Low Overnight** – This rate will have an additional off-peak period from 12am to 6am to encourage the shifting of discretionary load and will have a higher mid- and on-peak rate. Open to all customers; may be attractive to shift workers or others with flexible usage patterns.
- **Variable Peak Pricing with CPP** – Two rates in this plan: a variable on-peak rate on non-holiday weekdays from 3pm to 9pm that can either be low, medium, or high depending on IESO day-ahead demand forecasts and a non-variable off-peak during all other times. Customers will also occasionally be subject to a critical peak price during periods of very high demand that will be at most four hours long. Six such CPP events are targeted in both summer and winter respectively

Non-Price Experiments:

- **Behavioural communication messaging** – Customers will receive access to personalized data and reports that will track energy usage, savings, provide TOU price alerts and energy advice/tips.
- **Real-Time Information Feedback** – Customers may receive a smart device to better control their energy usage or a mobile app that will disaggregate total usage in order to identify high-usage activities within the household.

Proposed Budget:

- Total proposed budget of $9.39M of which $8.37M is budgeted to be funded through the Conservation Fund.

Oshawa PUC Pilot Overview

Number of Expected Participants:

- 2,000 customers in total; 500 customers will be allocated to each price and non-price treatment and 500 will be allocated into a control group.

Price Experiments:

- **Super Peak TOU** – Plan charges two rates within an on- and off-peak period for a majority of the year. However, during the summer months June-August. This rate option will become a three-part rate and introduce a higher-priced super-peak period on weekday afternoons.

- **Seasonal TOU with CPP** – Plan includes off- and on-peak prices in the winter and summer seasons (on -peak effective non-holiday weekdays 7am to 7pm) and a single, flat rate in the shoulder season.

Non-Price Experiments:

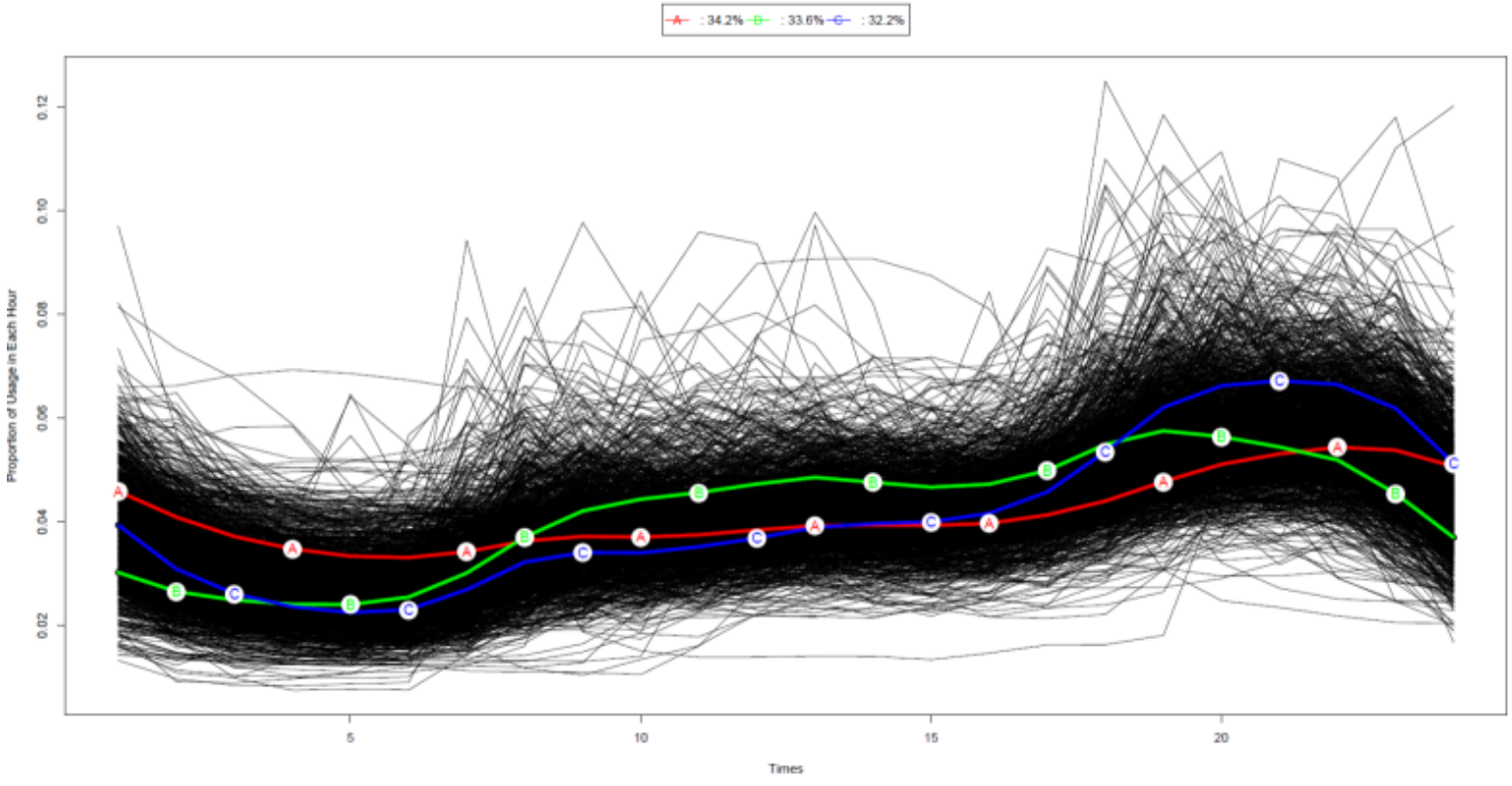
- **Real-Time Information Feedback** – Customers will receive communications through the delivery method of their choice (e.g. mobile app, direct mail, web portal, call center) that will provide disaggregation of total usage, track energy usage and savings, and generate behavioural messaging to incentivize customer behaviour.

Proposed Budget:

- Total proposed budget of $5.79M of which $5.51M is budgeted to be funded through the Conservation Fund.

Further Work Ahead

- Further OEB avenues of investigation include:
  - Consideration of alternate pilot scenarios, including those which may be informed by research into customer typology and what price plans may make sense for them.
  - Study of generalized consumption patterns expected to be a key input.



RPP Pilot – Detailed Timelines

Summer and Fall 2017

- Applicants market RPP pilots and recruit customers
- Applicants make necessary arrangements to ensure pilot is ready for go-live date

Early 2018

- RPP pilots go-live for one year
- Applicants provide interim reports outlining pilot progress and results

2019

- Applicants provide OEB with a final report outlining pilot results

OEB will continue to work to identify further priority areas/pricing plans to explore through pilot initiatives.

Appendix A: Approved Price Plans

See attached file
“Approved Prices and Structures for Electricity Pricing Pilots”
issued August 24, 2017

https://www.oeb.ca/sites/default/files/RPP-Pilot-Prices-20170824.pdf

Appendix B: Alectra's proposed Experimental Design

Estimated Sample Group Sizes: