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



## The Regulated Price Plan

Briefing for the Minister of Energy

October 3, 2016

# Agenda

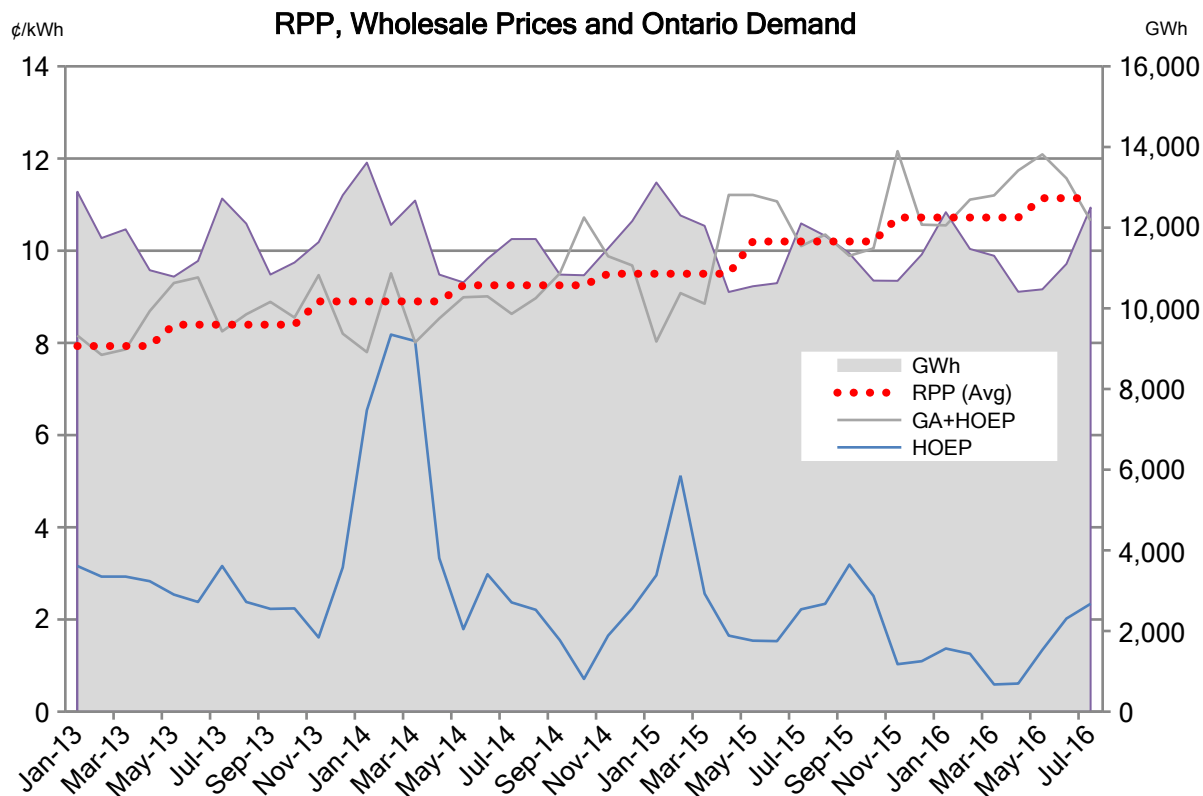
- Background and overview of the Regulated Price Plan (RPP)
- The OEB's RPP Roadmap Report
- Development of pilots to assess options for future of RPP

# The Regulated Price Plan: An overview



# OEB and the Electricity Line: RPP

- The RPP, in place since 2005, provides a stable price plan that reduces cost volatility while recovering actual supply costs over time.
  - 4.9M eligible residential and small business customers
  - Covers about 40% of Ontario consumption.



- Total RPP supply cost forecast for 12 months starting May 1, 2016 is estimated to be \$6.5B.

# OEB and the RPP

- The OEB Act requires the OEB to set the price for electricity commodity for all low volume consumers and any other consumers prescribed by Regulation.
- All Low-volume consumers (residential and any commercial consumer with a demand of 50 kw or less) and any consumer who annually uses between 150,000 and 250,000 kwhs is eligible for RPP.
  - A consumer may choose to buy their supply from a retailer or at the Hourly market price if they have an interval meter.
- The OEB established the Regulated Price Plan in 2005 as an electricity price plan that provides stable and predictable electricity pricing, encourages conservation and ensures the price consumers pay for electricity better reflects the price paid to generators.
- The OEB sets the prices based on forecasts of both the wholesale market price and the Global Adjustment to ensure prices reflect costs.
- The OEB sets two different prices for RPP:
  - Time-of-Use (TOU) prices which are charged to about 4.7 million consumers
  - Tiered prices charged to non-smart metered consumers, including approx. 130,000 Hydro One customers who's smart meters cannot be read remotely. Tiered prices provide an initial block of power at a lower price and a higher price for all additional use, as a conservation mechanism
- Prices are reviewed and may change every six months based on an updated OEB forecast and any accumulated differences between the amount that consumers paid for electricity and the amount paid to generators in the previous period.

# Setting the RPP Prices: Forecasting the Costs

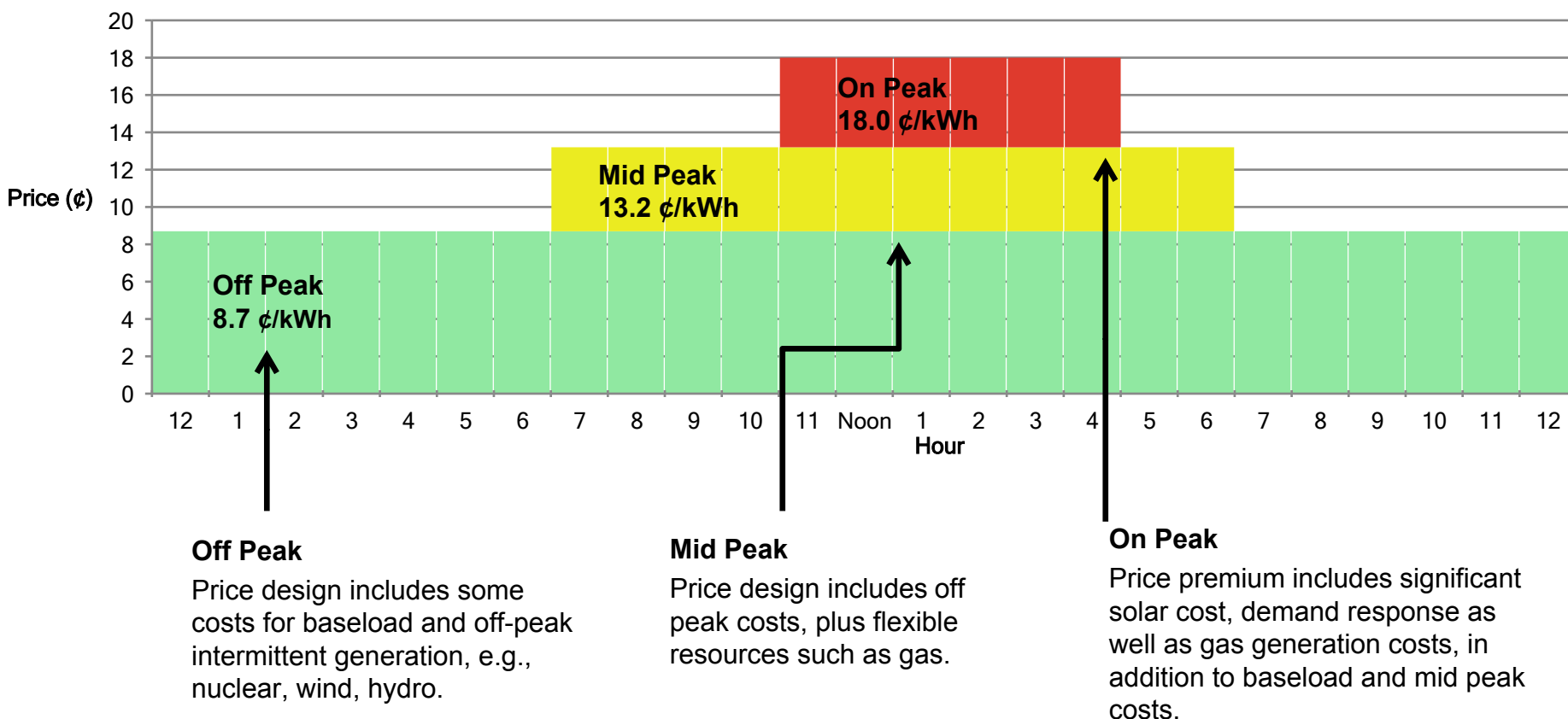
- Under OEB Act, OEB must set prices to recover costs; aim is also that any variances from forecast are to be recovered within one year.
- Forecast cost of supply needs to factor in:
  - Generator contracts (Bruce, renewables, gas)
  - Prescribed payments (OPG nuclear and hydro)
  - Conservation, demand management costs
  - Amount generators earn in wholesale electricity market vs global adjustment
  - The share of global adjustment allocated to lower volume customers (e.g. Class B)
- Majority of prices are not subject to OEB oversight:
  - Volume and price of contracts with IESO not subject to OEB review.
  - GA allocation set by regulation.
  - OPG is only supply cost that OEB regulates – represents about 34% of the overall total supply cost in Ontario, as of May 1, 2016; OPG's annual output is about 50% of Ontario annual electricity consumption.

|                   | % of Total Supply | Total Unit Cost (¢/kWh) |
|-------------------|-------------------|-------------------------|
| <b>Nuclear</b>    | 58%               | 6.8                     |
| <b>Hydro</b>      | 23%               | 5.7                     |
| <b>Gas</b>        | 9%                | 14.0                    |
| <b>Wind</b>       | 8%                | 13.3                    |
| <b>Solar</b>      | 2%                | 48.1                    |
| <b>Bio Energy</b> | 0%                | 13.0                    |

# From RPP Cost to Time of Use Prices

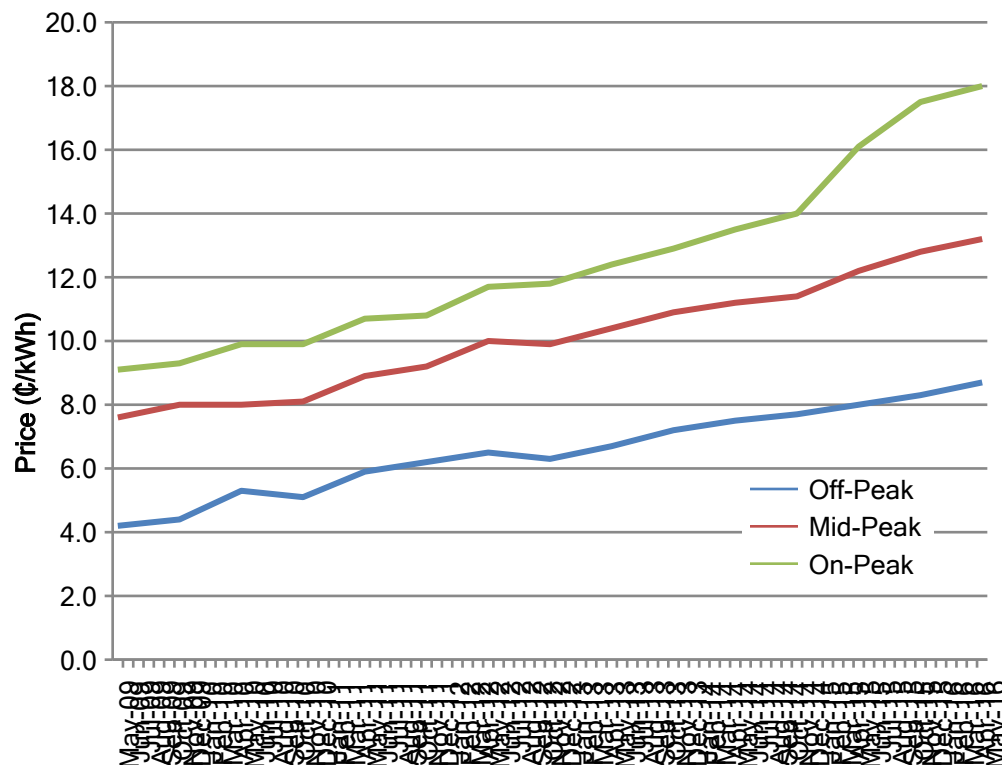
- TOU prices are derived from average costs, taking into consideration the costs of the generation providing value at those times as well as market price forecast.
- Two thirds of typical customer consumption occurs at off-peak times.

**Current Time-of-use (TOU) Prices by Hour**



# Regulated Price Plan

## Time of Use Prices under RPP May 2009 - May 2016



- Recent RPP price changes have sought to increase the difference between on- and off-peak prices to strengthen incentives for shifting consumption out of on-peak periods.
- On-peak is now more than twice off-peak prices.

# RPP Roadmap

## The OEB's Plan for Renewing TOU



# RPP Roadmap: Overview

- In 2015, the OEB issued the *RPP Roadmap*, setting out a five-point plan to be implemented over the course of the next 3 to 5 years:
  1. Renewing the RPP objectives
  2. Empowering Consumers: Enhancing energy literacy and non-price tools
  3. Implementing price pilots
  4. Engaging with low volume business consumers
  5. Working with government to reduce barriers

# RPP Roadmap: Overview

- Over the course of 2014-2015, the OEB undertook an initiative to understand whether the Regulated Price Plan (RPP) is meeting public policy objectives, whether improvements can be made, and to ensure that RPP customers are being appropriately served by the program
- Goal of review was to ensure RPP is able to meet challenges of the future
- Current stable state of Ontario's electricity system, as indicated by the IESO's most recent forecasts, provides an ideal opportunity to make adjustments to RPP
- To help determine future policy directions, the OEB commissioned studies exploring how the RPP has performed and how consumers perceived the RPP; and studies exploring potential changes in pricing and consumer information

# RPP Roadmap: Research

- OEB engaged in an extensive research project to support the RPP Review using four different consultants to cover both consumer research and technical analysis
- **Ipsos Reid** conducted exploratory qualitative research, using both online and traditional focus groups; and a second phase of quantitative research using a telephone survey, which was developed based on the results of the focus groups
- **BEworks** applied a behavioural economics approach to review and assess the ways in which consumers are, and are not, responding to the current pricing structure in Ontario
- **Navigant Consulting** undertook a study of TOU rates, and how TOU could be improved through structural changes
- **Power Advisory** conducted a review of dynamic pricing in leading jurisdictions in North America and beyond

# Key takeaways from RPP Research

- Consumers (both residential and small business) have limited comprehension of RPP/TOU: Evidence suggests that it is not the price ratio or TOU structure that is driving the observed limited response to TOU pricing, but the fact that many consumers don't know how to respond to TOU
- There is a need for information to be provided so that a typical consumer can process information more easily (better bills, better understanding of energy usage), understand how they can respond, and take action (i.e., response can be improved using status quo pricing)
- Likely that different customers (residential v. business) need different choices (price v. non-price) in order to respond to TOU
- TOU pricing is intended to incent change however due to legal/system/pricing mitigates ability to set efficient rates that could reward response (e.g., 7 to 7 for off-peak)
- System peak is shifting due to new supply, current TOU (and other dynamic pricing) will only exaggerate this affect
  - Limitations on time periods for peak/off-peak
  - System supply characteristics – increasing distributed solar & other new capacity procurements
- Reducing peak demand provides more value than shifting peak, but current limitations of the RPP-TOU framework to appropriately target and lower peak demand have significant long run cost implications for consumers

# Research Overview: Consumer Focused Objectives

- Consumer understanding of the bill, pricing, and responding to TOU:
  - Customers have low comprehension of current TOU structure, do not pay much attention to their bill, and do not understand the charges.
  - Survey results suggest majority of small & medium business have taken no actions to shift electricity consumption from high to low peak times.
  - Many opportunities (bill design, information sharing) to increase comprehension of TOU and thus increase response to TOU with system benefits.
  - May be more cost effective and publicly acceptable to address non-price interventions prior to initiating any major structural changes to TOU, while addressing issues related to ease of understanding of current structure and rewards in behavioural changes.
  - Need strong consumer education prior to, and throughout program implementation.
  - The availability of enabling equipment (such as programmable communicating thermostats) to consumers appears to increase both program effectiveness and consumer satisfaction.

- **System Changes and Alternative Pricing Options:**
  - Existing TOU time periods do not match well with existing system load shape and even less so with expected system load shape (i.e., growing amount of embedded solar capacity)
  - Electricity system peak is a prolonged plateau rather than a short period of time in the afternoon with top system peak demand hours sometimes occurring during off-peak hours.
  - Limited flexibility for alternative price setting due to legislative restrictions on how costs are recovered (e.g., focus on current cost recovery) and global adjustment
    - Current manner in which GA is allocated limits flexibility in pricing as does the high level of fixed supply costs
  - Limited flexibility for alternative price setting due to legislative restrictions on off-peak hours (7pm to 7am)
  - Currently and into foreseeable future, reducing peak demand provides more value than shifting peak
  - When examining pricing options three main features be considered:
    - Pricing that reduces peak demand and the corresponding need for new peaking resources could lead to significant electricity system cost savings;
    - Pricing that require less (rather than more) consumer effort to achieve a significant impact will likely be more effective in achieving demand reduction targets; and
    - Pricing programs that are easy to understand will likely achieve higher rates of consumer participation

## 1. Renewing the RPP objectives:

- The OEB updated the RPP objectives as follows (**Changes italicized. Completed Feb 16, 2016**):
  - Set prices to recover the full cost of RPP supply, on a forecast basis, from the consumers who pay the prices.
  - Set the price structure to reflect ***current and future*** RPP supply costs.
  - ***Set the price structure to support the achievement of efficient electricity system operation and investment.***
  - Set both prices and the price structure to give consumers incentives and opportunities to reduce their electricity bills by shifting their time of electricity use ***and reducing their peak demand.***
  - Create a price structure that is easily understood by consumers.
  - ***Provide fair, stable and predictable commodity prices to consumers.***

## 2. Empowering Consumers: Enhancing energy literacy and non-price tools (in-progress)

- Non-price tools and pilots (e.g., the electricity bill, automated load controls, benchmarking, and data collection) will be used to help make TOU pricing more easily understood by consumers (see #3)

## 3. Implementing pilots (in-progress)

- A key step is conducting a series of pilots including investigating alternative TOU time periods, pricing structures and consumer information tools
  - Pilot Guideline, Stage-1 Application and Technical Manual issued July 18
  - Stage-1 Project Overview Applications received on August 22
  - Staff/Consultant to review applications and make recommendations (early Sept)
  - Successful applicants will be invited to submit full proposal (early/mid-Sept)
  - Aim to have finalized all approvals by end of 2016 (Calendar year)
  - Target pilots in-field no later than May 1, 2017

## 4. **Engaging with low volume business consumers (in- progress)**

- The OEB will seek to engage low-volume business consumers through data collection surveys and a series of meetings to discuss high level concerns for this consumer class to help inform the design of future pricing options
  - Staff have had discussions with CME and reached out to Ontario Chamber of Commerce (OCC);
  - Additional follow-up needed to engage low volume business consumers (e.g., OCC)

## 5. **Working with government to reduce barriers (in- progress)**

- Discussions with Ministry of Energy on 7-7 regulation
  - Progress being made on changes to 7-7 regulation (Ministry staff engaged)
- Finalize funding mechanism and regulatory changes with Ministry
  - Proposal for directive under section 27.2 from the Minister to authorize IESO recovery of price pilot costs approved by OEB

# Implementing Pilots: Update



# Implementing Pilots: Guidance to LDCs

- A key step in the RPP Roadmap is the use of pilots to assess different price structures and non-price mechanisms to achieve the RPP objectives.
- In order to ensure the robustness of the results the OEB intends that all pilots should employ statistically robust experimental methods so that the studies can provide greater clarity on the effectiveness of price and non-price tools
- To achieve the OEB's goal, the Brattle Group (an international expert on price design) was engaged to provide technical assistance in the design, implementation and evaluation of cost-effective pilot programs
- The OEB also established a stakeholder Working Group to advise it in developing its guidance regarding pilots.
  - The membership included: CELA/LIEN, Toronto Community Housing Corporation, Consumers Council of Canada, Energy+, Horizon, Hydro One, Newmarket Hydro, PowerStream, Thunder Bay Hydro, IESO and the Ministry of Energy
- On July 18 the OEB posted its *Guideline For Pilot Projects On RPP Pricing*, along with a technical manual produced by Brattle.
  - The OEB also issued a letter to seeking applications from LDCs to implement pilots.
- The guidance from the OEB to LDCs is important to ensure all pilots use analytical methods and approaches to the reporting of results, making it easy to compare conclusions across pilots so that results can be generalized to other customers, utilities, and regions of the province
  - Guidance aims to eliminate any serious methodological shortcomings and avoid incurring costs that would have resulted in a duplication of effort, missed opportunities and/or misleading findings

# Residential Customer: Priority Pricing Pilots

- In the Guideline the OEB has identified priority price pilots which are intended to achieve the objectives of:
  - Offering customers choice
  - Giving consumers incentives and opportunities to reduce their electricity bills by shifting their time of electricity use and reducing their peak demand
  - Price structure to support the achievement of efficient electricity system operation and investment
  - Align incentives for consumers to use the grid when it is least costly to do so relative to status quo
  - Encourage conservation relative to status quo by focussing more on peak demand reduction rather than on peak shifting
  - Reduce requirements for peaking generation resources and transmission and distribution investment through higher prices during peak periods relative to status quo

# Priority Pricing Pilots

- The identified priority price pilots are either critical peak focused or variations on TOU
- Treatment 1 – TOU with Critical Peak Price: maintains the current TOU rate structure and overlays it with CPP
- Treatment 2 – TOU Variations: testing a range of TOU options, both as opt-in and opt-out programs
  - *Enhanced Peak TOU* sets peak to off-peak price ratio higher, but the pricing periods remain unchanged
  - *Super Peak TOU* has a super peak during the prime summer months and no mid-peak period
  - *Evening Peak TOU* shifts the summer peak later in the day to match the system peak. This is outside of the current 7 am to 7pm window set by regulation
  - *Seasonal TOU* eliminates the mid-peak period and introduces flat rates during the shoulder seasons of spring and autumn
- Priorities were guided by advice from Brattle Group, Working Group and review of Navigant modelling, Power Advisory research, and existing Ontario price pilots

# Priority Non-Price Pilots

- The Guideline also identified two categories of priority pilots for non-price mechanisms to build consumer awareness and response to dynamic pricing
- Information treatments:
  - Real time vs. delayed provision of information
  - Financial Opportunity vs. Environmental/Health information
  - Cost per kilowatt hour (\$/kWh) vs. Bill to date
- Automation treatments:
  - Multi-appliance automation
  - Customer-Programmed Appliances
  - Quick Ramping Automation

# Pilot Applications Received

- Invited LDCs to propose pilots by end of August
- 7 LDCs applied for a diverse range of price and non-price pilots
- Mix of distributors applying to run pilots
- Geographic distribution of proposed pilots: North, GTA, Central, and Southwest Ontario captured
- Applicants cover a mix of urban & rural, small- mid- and large-LDCs
- Based on information in the proposals it would appear there is a good sample size who would be engaged in the pilots
- Review of applications is underway to determine if proposed pilots will satisfy OEB expectations in terms of priority pilots and sample characteristics
- We anticipate a maximum budget of \$40 million for the full set of pilots

# Pilots Implementation Status

- Identify pilot proposals that should submit full, detailed project for review and approval
- Finalize funding mechanism and regulatory changes with Ministry
  - Proposed Directive to authorize OEB to determine funding through Global Adjustment
  - Amendment to O. Reg 95/05 regarding off-peak period for TOU, to allow flexibility in price options, including options where off-peak is not specified as 7-7
- We have recently received a proposal from the ECO for a particular pricing pilot and will be engaging with their staff to see how the pilot fits with RPP
- Engage further with low volume business customers and begin to consider potential pilots for these customers