

Briefing Note

Addendum to the IESO's Achievable Potential Study

Issue

The IESO is planning to post the following two documents on its website prior to the release of the 2017 Long Term Energy Plan (LTEP) modules. The analysis in the two documents was undertaken to address gaps identified in the IESO's Achievable Potential Study (APS) for electricity conservation, which was published in June 2016:

- Achievable Potential Study: Long Term Analysis (Addendum 1- Market Achievable Potential)- the analysis in this document was completed in November 2016
- Market Achievable Potential: Foreword to Addendum 1 (Foreword)- the analysis in this document was completed in May 2017

This note provides a background and summary of the two documents IESO is intending to publish.

APS Addendum 1: Background and Summary

- The IESO is required to conduct an achievable potential study for electricity conservation every three years, to inform energy-efficiency planning and programs. The first study under the 2015-2020 Conservation First Framework was released on June 30, 2016.
- On June 30, 2016, the IESO published an Achievable Potential Study for electricity conservation in Ontario. The APS estimated the electricity savings potential for four conservation scenarios, which include:
 - Technical potential scenario - savings potential when all technically feasible measures are implemented regardless of costs.
 - Economic potential scenario - savings potential when all economically feasible measures (i.e. cost-effective) are implemented, assuming 100% customer participation.
 - Unconstrained achievable potential scenario - maximum achievable level of savings assuming current incentive levels and customer response but with no budget constraints.
 - Budget constrained achievable potential scenario - maximum achievable level of savings, assuming current budget constraints of the Conservation

First Framework (CFF) and current incentive levels and customer response.

- After the publication of the APS, IESO's APS expert panel and some stakeholders indicated that the unconstrained achievable potential scenario did not fully capture the achievable potential for electricity conservation.
 - A key issue was the study's assumption that incentive levels under future programs would be fixed at current program levels (i.e. 20% to 40% of the incremental cost of measures). However, the IESO's expert panel indicated that to fully capture the unconstrained achievable potential, the study should consider incentive levels higher than current program offerings (up to 100% of the incremental cost of measures).
 - Offering higher incentive levels would result in higher program participation rates, increasing conservation potential.
- Based on APS expert panel and stakeholder feedback, IESO developed a fifth scenario called Market Achievable Potential, specific to the long-term energy efficiency study¹.
 - This scenario assumes that all programs offer incentives covering 100% of the incremental cost of measures and that all programs are cost-effective.
- The analysis relating to the market achievable potential scenario was completed in November 2016 and results indicated that, in the long-term, there was significant potential to achieve incremental electricity conservation savings from programs.
 - The results from the scenario suggested that Ontario's long term conservation target of 30 TWh savings in 2032 could be increased to ~41 TWh in a cost effective manner (cost savings exceed incremental investment in programs).

APS Addendum Foreword: Background and Summary

- Following the completion of the Addendum 1 study, in early 2017, IESO undertook additional electricity system and cost modelling specific to increasing the long-term conservation target from 30 TWh to 41 TWh (in 2032). This

¹ The Market Achievable Potential scenario was developed for the long-term energy efficiency component of the APS. Due to budget and timing constraints, the scenario was not developed for the short-term energy efficiency component.

analysis was conducted as part of the 2017 LTEP planning to inform whether to increase the long term target for electricity conservation.

- IESO's electricity system and cost modelling was completed in May 2017 and results indicated that the higher target would result in an overall electricity demand reduction of 10% and an average GHG emission reduction of 0.7 megatonne per year between 2017 and 2035.
- Results also indicated that a higher conservation target would lead to an increase in surplus baseload generation between 22 TWh and 30 TWh (cumulative between 2021 and 2035). System costs would increase by an annual average of about \$100 to \$200 million, leading to an average increase in residential bills by \$11/month between 2017 and 2035.

Summary of Next Steps

- The results of the Addendum and IESO's subsequent electricity system and cost modeling will help shape work conducted through the next APS, which is expected to be completed in 2019.
- IESO are looking to publish the two documents prior to the publication of the 2017 LTEP modules.
 - The draft 2017 LTEP conservation module makes reference to the key results from the Addendum 1 study, including costs and savings associated with the market achievable potential scenario.