

2019 Achievable Potential Study Stakeholder Engagement Meeting #1

March 28, 2018



Agenda

Topic	Lead
Welcome & Introductions	Nik Schruder (IESO) & Pascale Duguay (OEB)
Background / Study Overview <ul style="list-style-type: none">Materials: Draft APS Project Charter	Katelyn Margerm (IESO)
Stakeholder Engagement Plan <ul style="list-style-type: none">Materials: Draft APS Engagement Plan	Jason Grbavac (IESO)
Draft Scope of Work	Bronwen Smith (IESO) & Valerie Bennett (OEB)
Wrap-up and next steps	Jason Grbavac
Q&A	All

Public Webinar Objectives

- Introduce the 2019 Achievable Potential Study and Project Team
- Provide stakeholders with relevant background and supporting information on the project
- Provide an overview of the stakeholder engagement plan
- Review and seek input on Draft Scope of Work
- Field any questions and initial comments
- Invite input on the project through engagement@ieso.ca

Background – Ministry Directions

- The Independent Electricity System Operator (IESO) and the Ontario Energy Board (OEB), (“Project Team”) are planning to conduct an integrated electricity and natural gas conservation achievable potential study (APS) to be completed by June 2019.
- The Achievable Potential Study is a requirement of:
 - March 31, 2014 Direction to the former Ontario Power Authority (OPA) now IESO

“**conduct an achievable potential study** for electricity efficiency in Ontario **every three-years...** to inform electricity efficiency planning and programs. The achievable potential study should, where appropriate, **be coordinated with the natural gas efficiency achievable potential study...**”
 - March 26, 2014 Direction to the OEB

“an achievable potential study for natural gas efficiency in Ontario should be **conducted every three-years...** to inform natural gas efficiency planning and programs. The achievable potential study should, as far as is appropriate and reasonable... be **coordinated with the [former OPA now IESO]...**”

Background – Past Studies

- The IESO completed its latest electricity APS in July 2016, which included:
 - [Short-term Energy Efficiency Report \(2015-2020\)](#)
 - [Long-term Energy Efficiency Report \(2015-2035\)](#)
 - [Behind-the-Meter Generation Report](#)
- The OEB completed its latest natural gas study in July 2016:
 - [Natural Gas Conservation Potential Study](#)
- IESO and OEB participated on each of the respective study's working groups and set up a coordination committee to share data and economic assumptions.
- Due to growing shift towards more whole home and business multi fuel measures and programs and increasing electrification opportunities, greater need for further integration between the electricity and natural gas APS.
- As a result, the Project Team is conducting an integrated study for the 2019 APS that considers energy efficiency and conservation measures with both electricity and natural gas savings along with determining the resulting GHG impacts.

Background – Study Governance

Group	Responsibility	Members
Project Team	Provide day-to-day oversight and direction for the project including consultant procurement, project delivery and management and stakeholder engagement	IESO, OEB
Third Party Consultant	Develop study methodology and undertake study in accordance with industry best practices	Consultant
Advisory Group	Provide advice on development of the project as well as review of all project milestones	Members: Local Distribution Companies, natural gas utilities, consumers, consultants/delivery agents Observers: Ministry of Energy, MOECC, Green Ontario Fund, Environmental Commissioners Office Project team: IESO, OEB
Expert Panel	Reviews consultant materials and provides technical guidance to ensure work is conducted in accordance with industry best practices. Where relevant to Advisory Group discussions, Expert Panel input will be shared predominantly in written form, with potential for conference calls as needed.	Chris Neme, Energy Futures Group Christine Gustafson, Harbourgreene Consulting Danielle Sass Byrnett, National Association of Regulatory Utility Commissioners Dave Shipley, Posterity Group

Expected Study Timing

- March 21 2018 First Advisory Group Meeting
- March 28 2018 First Public Webinar
- Early May 2018 Issue consultant RFP
- May - June 2018 Proposal evaluations, interviews, contract negotiations
- June - July 2018 Execute consultant contract
- June 1, 2019 Final report due

Stakeholder Engagement Plan

- The objective of the APS engagement is to ensure that stakeholders and communities understand the purpose and scope of the APS, and can inform and provide comment on the initial plan and throughout the course of the study.
- The Project Team is looking for stakeholder and community input to ensure the study is comprehensive, rigorous and incorporates the objectives of the APS as stated in the applicable ministerial directions.
- Engagement is also critical to understanding the needs and potential uses of the APS from various stakeholders.
- The implementation of this engagement plan will be in accordance with the IESO's approved [engagement principles](#).

Stakeholder Engagement Plan cont'd

Phase 1: Establishment of Achievable Potential Study Advisory Group

- **Complete**

Phase 2: Public and Advisory Group Meetings on the APS Scope of Work

- The first meetings for the APS Advisory Group and first public open engagement will focus on collecting stakeholder input on the APS scope of work which will be used in the Request for Proposals (RFP) to secure a vendor to conduct the APS.

Phase 3: On-going Public and Advisory Group Meetings

- Once a vendor has been contracted and the study commenced, the Project Team will hold both APS Advisory Group meetings and public engagement sessions throughout the APS to obtain input from all stakeholders as a critical task to the success of the study.

Stakeholder Engagement Plan cont'd

Timing	Engagement Activity	Audience(s)
Feb 8, 2018	Communicate a “call for nominations” to the APS Advisory Group	Public
Feb 21, 2018	Deadline for applications for the APS Advisory Group	Public
Feb 28, 2018	Confirm successful APS Advisory Group members	Applicants to APS Advisory Group
Mar 21, 2018	First APS Advisory Group meeting to provide input into the scope of work for the procurement	APS Advisory Group
Mar 28, 2018	First Open (public) engagement on the APS scope of work	Public
June 2018	Consultant contract in place	Successful vendor
June 2018 – June 2019	APS Advisory Group monthly meetings	APS Advisory Group
June 2018 – June 2019	Open (public) engagement at key study milestones (approximately quarterly)	Public

Draft Study Objectives

- The main objective of the APS is to identify and quantify energy savings (electricity and natural gas) and GHG emission reductions and associated costs from energy efficiency and conservation for the period of 2019-2038.
- The APS will provide data and analysis to inform:
 - the development of future conservation policy and/or frameworks;
 - program design, implementation and evaluations;
 - long-term resource planning and system operations.
- Being the first integrated APS in Ontario, the study aims to capture the dynamic relationship between electricity and gas use in order to better support emerging whole home and business multi fuel measures and programs and also understand the impacts of electrification policies.
- A priority of the integrated study will be to design analytical tools that can dynamically consider a range of optimized scenarios and can be used on an ongoing basis by the Project Team to update results as new data and assumptions become available.

Draft Scope of Work Development

- The Project Team has developed a high level draft scope of work based on the APS objectives
- Scope of work will form part of the RFP to retain a consultant to conduct the APS
- Proponents to the RFP will propose their recommended approach to deliver the tasks set out in the scope of work
- Stakeholders are asked to consider the following questions:

- 1. Do the study objectives capture your organization's needs?**
- 2. Will the successful completion of the tasks result in achieving the APS objectives?**
- 3. Are there additional tasks and/or deliverables that should be included?**
- 4. Should the scope of any of the tasks be modified?**

Draft Scope of Work

Task 1: Project Plan

- Establish a detailed project plan that provides a roadmap for the analysis, which will be reviewed by the Project Team, Advisory Group and expert panel and approved by the Project Team before the analysis commences.
- Develop a detailed project plan that describes all key components of the analysis including: data inputs and sources, methodology for the analysis, scenarios to be considered and format of outputs.

Draft Scope of Work cont'd

Task 2: Base Case Calibration

- Using 2017 as the base year, disaggregate electricity (distribution and transmission connected load) and natural gas consumption by IESO , sector, sub-sector and end-use, using a methodology recommended by the consultant.
- Determine how to address any discrepancies between electricity and natural gas base case data.

Draft Scope of Work cont'd

Task 3: Reference Forecasts

- Develop a gross reference forecast for electricity and natural gas for 2019-2038 via an end-use based model that is calibrated against IESO zone and the gas utilities' forecasts.
- Develop a net reference forecast by removing the impact of existing and planned future codes and standards, and the persistence of historical conservation program savings, naturally-occurring efficiency changes, fuel switching and other influenced savings.
- Consider additional forecast scenarios ('alternate forecasts') provided by the Project Team.

Draft Scope of Work cont'd

Task 4: Energy Efficiency and Conservation Measures

- Develop a comprehensive list of all electricity, natural gas and multi-fuel energy efficiency and conservation measures including current and future (for the 2024-2038 period) technology-based and behavioral measures and excluding codes and standards.
- Estimate measure life, equipment costs, operating costs and energy, demand, water and carbon savings associated with each measure and archetype program.
- Provide current market penetration or saturation estimates associated with each measure, where data is available.
- Consider interactive effects between measures where applicable and whether the measure costs will decline as market share or volume increases.

Draft Scope of Work cont'd

Task 5: Technical Potential

- Technical assessment of all energy efficient measures, including an annual energy, water, demand and carbon savings and cost estimates for 2019-2038, for each region, segmented by end use, sector, sub-sector and, including calculations.
- Technical potential assessment to use load shapes to determine hourly coincident peak/capacity savings and hourly energy savings.
- Technical assessment should consider 'cascading' or 'stacking' of end-use measures, interactive cross-effects and persistence.

Draft Scope of Work cont'd

Task 6: Economic Potential

- Calculate the Total Resource Cost (TRC) and Program Administrator Cost (PAC) for each measure.
- Estimated savings potential for 2019-2038, by region, sector, sub-sector, and end-use, assuming that 100% of customers implement all applicable cost effective measures.
- Economic potential to use load shapes to determine monthly coincident peak and energy savings.
- Consider stacking of end-use measures, interactive cross-effects and persistence.

Draft Scope of Work cont'd

Task 7: Achievable Potential

- Estimate the achievable potential savings by region, sector, sub-sector and end-use for the 2019-2038 period for the reference forecast and two reference forecasts, under three scenarios (e.g., maximum achievable potential, budget constrained, targeting only measures with a min cost effectiveness, etc.).
 - The achievable potential analysis takes into account realistic market penetration rates of cost-effective measures over the study period based on: market barriers, customer preferences and acceptable payback periods/ROI, marketing efforts, historic program experience, etc.
- Estimate incentive and non-incentive costs.
- Develop cost curves showing the achievable potential savings and associated costs between the minimum achievable potential and the maximum level of achievable potential.

Draft Scope of Work cont'd

Task 8: Marginal Abatement Cost Curve (MACC)

- Based on the energy efficiency and conservation measures list, develop a 10-year marginal abatement cost curve that ranks natural gas GHG abatement activities according to the cost of abatement compared to a reference forecast of the forward cost of an Ontario cap and trade allowance.
- To include GHG abatement measures for natural gas customer emissions and facility emissions (as defined in the [OEB's Cap and Trade Framework](#)) as well as renewable natural gas (RNG).
- The study should consider and advise on:
 - Potential level for measures to be included in the MACCs
 - Cost metrics/tests (e.g., PAC, TRC, etc.) – avoided cost of carbon to be based on the OEB Long Term Carbon Price Forecast (LTCPF)
 - Other factors affecting the MACC (e.g., technology costs, adoption rates, market penetration)

Draft Scope of Work cont'd

Task 9: Sensitivity Analysis

- Identify the most sensitive inputs and/or assumptions on the savings potential estimates and MACC analysis looking at electricity, natural gas and maximum and minimum LTCPFs, incentive rates, adoption curves, avoided costs as well as other key inputs.
- Analysis of net peak demand impacts associated with each of the three achievable potential scenarios.

Draft Scope of Work cont'd

Task 10: Final Reporting

- Summarize the study results including technical, economic and achievable potential results by region, sector, sub-sector and end-use in a final report and presentations.
- Provide key findings highlight expected changes and evolutions in each sub-sector / end use to inform future program design.
- Submit final and clean dynamic versions of major models and tools developed over the course of the project with appropriate documentation.

Draft Study Outputs

Draft Study Outputs

- Amount of energy savings (electricity, natural gas) and GHG emission reductions achievable between 2019 – 2038 broken out by:
 - Measure
 - Sector and subsector
 - Region
 - Varying budget levels
- Cost curves for electricity savings and natural gas savings
- Marginal carbon abatement cost curves
- Dynamic model that can run a range of scenarios in order to optimize electricity savings, natural gas savings or GHG savings or other policy objectives

Stakeholder Input and Next Steps

- **April 4th:** Deadline for feedback on to the following questions (and any other comments on this presentation, in particular the proposed Scope of Work) submitted to engagement@ieso.ca
 1. Do the study objectives capture your organization's needs?
 2. Will the successful completion of the tasks result in achieving the APS objectives?
 3. Are there additional tasks and/or deliverables that should be included?
 4. Should the scope of any of the tasks be modified?
- Please visit the APS engagement [webpage](#) for updates on the project which includes information from the APS Advisory Group meetings
- Please send all questions or feedback to engagement@ieso.ca as well as a request to be added to the 2019 APS email distribution list for all upcoming news and meeting invitations.

Key Takeaways

- IESO and OEB undertaking an joint gas and electric Achievable Potential Study to be completed by June 1, 2019 supported by an Advisory Group, an Expert Panel and third party consultant
- The study will support the development of future conservation policy, program design and long-term resource planning by quantifying annual energy savings and GHG emission reductions and cost between 2019-2038
- Stakeholders are invited to provide input into the initial plan and throughout the duration of the study
 - Please submit comments on the draft scope of work and question responses by April 4th via engagement@ieso.ca

Questions?