

# 2019 Achievable Potential Study Advisory Group Meeting #1

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March 21, 2018



# Meeting Agenda

Time	Topic	Lead
9:30-9:40	Welcome & Introductions	Nik Schruder (IESO) & Pascale Duguay (OEB)
9:40-9:55	Background / Study Overview <ul style="list-style-type: none"> <li>Item for information</li> <li>Materials: <a href="#">Draft APS Project Charter</a></li> </ul>	Bronwen Smith (IESO) & Valerie Bennett (OEB)
9:55-10:15	Advisory Group Terms of Reference <ul style="list-style-type: none"> <li>Item for discussion</li> <li>Materials: <a href="#">Draft APS Advisory Group Terms of Reference</a></li> </ul>	Katelyn Margerm (IESO)
10:15-10:30	Stakeholder Engagement Plan <ul style="list-style-type: none"> <li>Item for information</li> <li>Materials: <a href="#">Draft APS Engagement Plan</a></li> </ul>	Jason Grbavac (IESO)
10:30-10:45	BREAK	
10:45-11:45	Draft Scope of Work <ul style="list-style-type: none"> <li>Item for discussion</li> <li>Materials: to be provided</li> </ul>	Bronwen Smith & Valerie Bennett
11:45-12:00	Schedule, next steps and action items	Jason Grbavac

# Meeting Objectives

- Welcome members and observers to the 2019 APS Advisory Group
- Provide members with pertinent background and supporting information
- Review and seek input on Draft Terms of Reference for the Advisory Group
- Provide an overview of the stakeholder engagement plan
- Review and seek input on Draft Scope of Work
- Establish an open and collaborative working atmosphere

# Background / Study Overview cont'd

- The Independent Electricity System Operator (IESO) and the Ontario Energy Board (OEB), collectively the 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 / Study Overview cont'd

- 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.
- There has been a growing shift towards more whole home and business multi fuel measures and programs and increasing electrification opportunities, driving a greater need for further integration between the electricity and natural gas APS.
- As a result, the IESO and the OEB are planning to conduct an integrated study for the 2019 APS that considers natural gas and electricity demand side resources including measures with both electricity and natural gas savings along with determining the resulting GHG impacts.

# Background / Study Overview cont'd

## 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

# Background / Study Overview

## 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 demand side resources for the period of 2019-2038.
- The integrated study will be designed to dynamically consider a range of optimized scenarios to better inform policy direction as well as informing the development of future conservation frameworks, program planning and long-term resource planning.

# Background / Study Overview cont'd

Study Outputs (*Draft: subject to updates as Scope of Work is finalized*)

- 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



# Expected Study Timing

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

# Advisory Group Terms of Reference

- The APS Advisory Group will provide a forum for stakeholder members to provide input and advice on the APS and for the Project Team to communicate updates.
- The APS Advisory Group will be asked to review and comment on the consultant scope of work, APS progress, and draft report(s) among other possible deliverables.
- Written feedback provided by APS Advisory Group members within five business days following the Advisory Group meetings will be compiled on the APS Advisory Group engagement webpage.
- The Project Team will respond to feedback and advise how the views of stakeholders and other interested parties have been considered and incorporated. The final content of the APS report will be determined by the Project Team.
- APS project work and deliverables discussed and advanced in the APS Advisory Group will also be brought forward for discussion with all stakeholders through the broader public engagement.

# Advisory Group Terms of Reference, cont'd

- APS Advisory Group members are expected to be able to commit time and resources to support the group, provide feedback, attend scheduled meetings, and review information/ materials (some of which may be communicated between meetings).
- Direct meeting participation will be limited to members. Members may not be added to the group without consensus of all existing APS Advisory Group members.
- The meetings will also be open to registered Observers who have been invited and/or applied and selected by the Project Team and limited to one individual per organization. Observers will be invited to provide comment or ask questions at the discretion of the APS Advisory Group's Chair.
- Sub-groups, which align with key components identified by the Project Team, may be established as required.

# Advisory Group Terms of Reference, cont'd

## Organization and Administration of Meetings

- The IESO will chair the meetings and provide all meeting agendas and support material at least three business days in advance of the meeting.
- Meetings will be held approximately monthly in-person at the IESO office with teleconference lines available as required. Meeting frequency may be adjusted as required.
- IESO will take meeting minutes including actionable items and their resolution and will circulate minutes and materials to all APS Advisory Group members for review and comment prior to the next meeting. At the next meeting any outstanding comments will be reviewed and meeting minutes and materials will be finalized.
- All members are to come prepared to the meeting including providing materials in advance to all members.
- The IESO will coordinate attendance through on-line meeting invitations. Members are not to forward meeting invites to any other parties without the consent of the IESO.

# Advisory Group Terms of Reference, cont'd

## Communications

- Meeting materials, information and updates on this APS Advisory Group will be shared with stakeholders and the public through the APS webpage, the LDC saveONenergy e-blast and the IESO's weekly Bulletin.
- The webpage will include the APS Advisory Group Terms of Reference, engagement plan, project charter, meeting agendas, formal presentations and meeting minutes.
- Information posted on the webpage is public and can be shared freely. All other information should be treated as confidential and members should comply with the confidentiality and privacy terms in their agreement.
- APS Advisory Group members will be responsible for communicating with the stakeholders that they represent.

# Advisory Group Terms of Reference, cont'd

## Normal Order of Meetings

- Roundtable introductions, recap and resolution of any item of note from the previous meeting.
- Review agenda and request for additional items to be added under “new business”.
- During presentations, interruptions should be limited to questions of clarification, with opinions, comments, and debates held until the conclusion of the presentation.
- The Chair will aim to manage the meeting to ensure everyone has a voice at the meeting and no one dominates the discussions.
- At the conclusion of the meeting, the Chair will close with a summary, recap of action items and next steps.
- Developing a draft agenda for next meeting is optional, depending on when the next meeting is.

# Advisory Group Terms of Reference, cont'd

## Decision Making

- The APS Advisory Group will strive for broad consensus wherever possible.
- Where consensus on an issue is not possible, the Project Team will consider the APS Advisory Group's advice, come to a decision and communicate that decision and rationale back to the Advisory Group.

# Advisory Group Terms of Reference, cont'd

Role	Responsibilities
All members	<ul style="list-style-type: none"> <li>• Represent the interests and present the views of their individual companies/constituency, not themselves</li> <li>• Ensure that all relevant staff (including senior management) in their organizations are kept apprised of APS Advisory Group activities and discussions</li> <li>• Commit the time to attend at least 80% of APS Advisory Group meetings; for meetings they are unable to attend, assign and empower a delegate to attend and act on their behalf.</li> <li>• Contribute time and staff resources to action items outside of APS Advisory Group meetings, such as sub-groups</li> <li>• Follow APS Advisory Group TOR and act in manner to support APS Advisory Group objectives</li> </ul>
APS Advisory Group Chair	<ul style="list-style-type: none"> <li>• Coordinate meeting logistics (dates, locations, times)</li> <li>• Circulate meeting material</li> <li>• Facilitate meetings</li> </ul>
Project Team	<ul style="list-style-type: none"> <li>• Develop meeting agendas</li> <li>• Prepare meeting notes and track action items</li> <li>• Support communication efforts to keep the broader distributor community informed of key discussions and outcomes of the APS Advisory Group</li> </ul>
Observers	<ul style="list-style-type: none"> <li>• Present/discuss their positions and views to APS Advisory Group, where requested</li> </ul>



# Advisory Group Terms of Reference, cont'd

- The Advisory Group is requested to review and provide comment on the [Terms of Reference](#) posted on the engagement webpage by EOD March 28<sup>th</sup>
- The Project Team will review, consider comments and seek to adopt a revised TOR as final at the next meeting.

# 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

<b>Timing</b>	<b>Engagement Activity</b>	<b>Audience(s)</b>
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 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
- The Advisory Group is requested to review and provide comment on the high level draft scope of work set out in this presentation by March 28<sup>th</sup>
- Should consider the following questions:
  - Will the successful completion of the tasks result in achieving the APS objectives?
  - Are there additional tasks and/or deliverables that should be included?
  - Should the scope of any of the tasks be modified?

# Draft Scope of Work

## Task 1: Project Plan

### Description:

- 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.

### Deliverables:

- Draft project plan for review/comment
- Presentation to the Advisory Group for feedback
- Final project plan revised based on feedback

# Draft Scope of Work cont'd

## Task 2: Base Case Calibration

### Description:

- 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.

### Deliverables:

- Disaggregated base case, by IESO zone and natural gas utility region, sector, and sub-sector, and end-use
- Presentation to the Advisory Group for feedback
- Findings shall be summarized in final report

# Draft Scope of Work cont'd

## Task 3: Reference Forecasts

### Description:

- Develop a gross reference forecast for electricity and natural gas for 2019-2038 via an end-use based model that is calibrated against IESO 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.
- In addition to these reference forecasts, consider two additional forecast scenarios ('alternate forecasts') provided by the Project Team.

### Deliverables:

- Reference case gross and net end use forecasts plus two alternate end use forecasts between 2019-2038 by IESO zone, natural gas utility region, sector, and sub-sector, and end-use
- Presentation to the Advisory Group for feedback
- Findings shall be summarized in the final report



# Draft Scope of Work cont'd

## Task 4: Energy Efficiency and Conservation Measures

### Description:

- 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 C&S.
- Map all measures to end-uses and to applicable sector and sub-sectors.
- Estimate measure life, equipment costs, operating costs and energy, demand, water and carbon savings associated with each measure and archetype program.
- Consider measures' effects on electricity and/or natural gas and post fuel switching (for example, electrification from furnace to heat pump).
- Provide the simple payback period and ROI for each measure and assess other factors that would affect decision making such as capital cost, comfort, product quality improvements, etc.
- 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 4: Energy Efficiency and Conservation Measures

### Deliverables:

- Comprehensive list of all energy efficiency and conservation measures to be included in the analysis
- Measures mapped to end-uses and sector/sub-sector.
- Savings per measure per participant per end use including persistence and a description of major assumptions used for the analysis.
- Findings summarized in the final report.
- Presentation to the Advisory Group for feedback.

# Draft Scope of Work cont'd

## Task 5: Technical Potential

### Description:

- 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 utilize 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.

### Deliverables:

- Technical potential by region, sector, sub-sector, and end-use, for the 2019-2038 period for the reference forecast and two alternate forecasts
- Discussion of results and comparison to previous studies conducted in Ontario and other similar jurisdictions
- Presentation to the Advisory Group for feedback
- Results summarized in the final report

# Draft Scope of Work cont'd

## Task 6: Economic Potential

### Description:

- 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.

### Deliverables:

- Economic potential by region, sector, sub-sector, and end-use, for the 2019-2038 period for the reference forecast and two alternate forecasts
- Presentation to the Advisory Group for feedback
- Discussion of results and comparison to previous studies conducted in Ontario and other similar jurisdictions, summarized in the final report

# Draft Scope of Work cont'd

## Task 7: Achievable Potential

### Description:

- 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, incentive levels, marketing efforts, historic program experience, competing EE measures, interaction between electricity and natural gas utilities and other programs in the market (e.g. GreenON), experience in leading jurisdictions, etc.
- Empirical research results, and how they are applied to the analysis, should be explicitly stated.
- 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.).
- 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 7: Achievable Potential

### Deliverables:

- Achievable potential results by region, sector, sub-sector, end-use, including an annual energy, water, demand and carbon savings and cost estimates for 2019-2038, for each scenario
- Cost curves showing the achievable potential savings and associated costs between the minimum achievable potential and the maximum level of achievable potential
- Key findings for each sub-sector on the market impacts considered in the analysis and how they impact expected adoption that could be used to inform future program design
- Discussion of results and comparison to previous studies conducted in Ontario and other similar jurisdictions
- Present preliminary results to the Advisory Group for feedback
- Results shall be summarized in the final report

# Draft Scope of Work cont'd

## Task 8: Marginal Abatement Cost Curve (MACC)

### Description:

- 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.
- This work should 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 Consultant's methodology 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 8: Marginal Abatement Cost Curve

### Deliverables:

- One MACC that shows customer, facility, and RNG carbon abatement options, plus:
  - Customer Abatement: MACC for each sector and each utility
  - Facility Abatement: MACC for each utility
  - RNG: Single MACC for Ontario
- Presentation to the Advisory Group for feedback
- Findings and visual presentation of the MACC to be included in the final report with accompanying Excel files of all data to be provided



# Draft Scope of Work cont'd

## Task 9: Sensitivity Analysis

### Description:

- 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.

### Deliverables:

- Sensitivity analysis results for economic and achievable potential scenarios by utility, region, and sector
- Peak demand analysis results for economic and achievable potential scenarios by region, and sector
- Sensitivity analysis results for the MACC
- Sensitivity analysis shall be summarized in the final report
- Presentation to the Advisory Group for feedback

# Draft Scope of Work cont'd

## Task 10: Final Reporting

### Description:

- 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.

### Deliverables:

- Final report and recommendations
- Detailed summary presentation delivered to Advisory Group and Project Team
- High level summary presentation delivered via a public webinar
- Full, dynamic and updateable electronic stock and flow model, with documentation, used to develop the study results which include all datasets and crosstabs

# Draft Scope of Work cont'd

## Task 11: Project Management and Stakeholder Engagement

### Description:

- Weekly status meetings with Project Team and update and maintain an issue tracker
- Additional meetings with Project Team to review each task, approach and status, draft and final results
- Stakeholder engagement
  - Monthly meetings with the Advisory Group
  - Quarterly public webinars

### Deliverables:

- Regularly updated issues tracker
- Meeting summary notes
- Engagement session materials and meeting summary notes
- Consolidation and draft responses to comments received from the quarterly public webinars

# APS Advisory Group Action Items & Next Steps

- EOD March 28<sup>th</sup> Provide comments on the posted Advisory Group [Terms of Reference](#)
- EOD March 28<sup>th</sup> Provide comments on the proposed draft Scope of Work (slides 22-35)
- May (TBC) Next Advisory Group meeting
  - » What information would be helpful review?
  - » Preference for meeting time or location?
- Please submit all comments on the TOR and SOW in a Word document or PDF to [engagement@ieso.ca](mailto:engagement@ieso.ca) for the Project Team to review and post on the project engagement webpage.