

IESO/OEB Achievable Potential Study Advisory Group – Meeting Minutes #5

Agenda

Date: Thursday October 11, 2018	Time: 10:00 a.m. to 3:00 p.m.
Location:	IESO Office (120 Adelaide St W., 1805&1806)
Meeting Chair:	Nik Schruder (IESO)

Meeting Objective(s):

- Provide project schedule and status updates
- Present final segment and end-use categorization
- Share initial findings/observations on electricity and natural gas forecast assumption compatibility
- Discuss measure list and proposed measure characterization review process
- Discuss Delphi panel scope and proposed recruitment process
- Discuss whole building benchmarking segment

Attendees:

Members: Andy Armitage (Thunder Bay Hydro), Drew Everett (Union Gas), Ian Jarvis (Enerlife), Daniel Johnson (Enbridge Gas), George Katsuras (Hydro One), J.J. Knott (Healthcare Energy Leaders Ontario), Michael Lio (Buildability), Michael Marchant (Toronto Hydro)

Observers: Samantha Byers (Enbridge Gas), Clarence Cheng (Ontario Ministry of Environment, Conservation and Parks), Mehdi Hosseini (GreenON), Patrick Tomlinson (Ontario Ministry of Energy, Northern Development and Mines)

Project Team: Nik Schruder (IESO, Chair), Valerie Bennett (OEB), Pascale Duguay (OEB), Trevor Esdaile (IESO), Katelyn Margerm (IESO), Tina Nicholson (IESO), Bronwen Smith (IESO), Simon Zhang (IESO)

Navigant: Ben Grunfeld, Farhad Daruwala, Dixon Grant, Peter Steele-Mosey (in person), and Tyler Capps, Divya Iyer (teleconference)

Regrets:

Members: Kyra Bell-Pasht (Environmental Commissioners Office), Bala Gnanam (BOMA Toronto), Jeff Quint (Waterloo North Hydro)

Action Items Identified	Status/Timing
Review reference forecast drivers including weather normalization and economic growth and confirm alignment.	To be addressed by Navigant at the next Advisory Group meeting.
Engage with natural gas utilities when IESO alternative forecasts (and fuel switching assumptions) become available to provide utilities time to comment on assumptions & how they will be reflected in Navigant forecast adjustments.	The Project Team will engage with the natural gas utilities regarding the alternative forecasts when they become available.
Connect with Michael Lio (Buildability) to discuss residential baseline measures.	Michael shared his insights with Navigant and the Project Team on 2018-10-25.
<p>Consider Advisory Group comments on existing residential measures:</p> <ul style="list-style-type: none"> - Pool pumps should not be 0 - Duct installation should be lower priority than 2 - High Efficiency windows should be lower priority than 3 - Furnaces should lower priority than 3 - Water heating should lower priority than 3 - Heat reflector panels should not be priority zero. 	To be addressed by Navigant at the next Advisory Group meeting.
<p>Consider Advisory Group comments on existing commercial measures:</p> <ul style="list-style-type: none"> - Add a ventilation optimization measure - Add a measure to convert steam circulation to hot water circulation - Add a behavioural measure - Revise efficient transformers priority (currently zero) 	To be addressed by Navigant at the next Advisory Group meeting.
<p>Consider Advisory Group comments on existing industrial measures:</p> <ul style="list-style-type: none"> - Add thermal oxidiser measure - Add axial fan measure - Add destrat fan measure - Add a cogeneration optimization measure - Split up some of the larger measure categories (e.g. boilers) - Increase the priority of greenhouses to 3 	To be addressed by Navigant at the next Advisory Group meeting.

<p>Consider Advisory Group comments on new measures:</p> <ul style="list-style-type: none"> - Add a residential gas heat pump measure - Add industrial air source and ground source heat pump measures - Remove measures that recommend switching to electric resistance heating 	<p>To be addressed by Navigant at the next Advisory Group meeting.</p>
<p>Explore availability of alternative data sets to support whole building benchmarking tasks, including:</p> <ul style="list-style-type: none"> - Tower Renewal building data - BOMA BEST data - Green Hospitals Scorecard (Canadian Coalition for Green Health Care) - Greening Healthcare (Toronto Regional Conservation Authority) 	<p>To be addressed by Navigant at the next Advisory Group meeting.</p>

Agenda Item 1: Welcome and introduction

Speakers: Nik Schruder (IESO)

Nik introduced the group, walked through the agenda and read off the meeting objectives.

Agenda Item 2: Review previous meeting actions and confirm meeting minutes

Speakers: Valerie Bennett (OEB)

The group confirmed the past meeting minutes as final. Valerie walked through the action items from the September 18th AG meeting. She highlighted the new segments that had been added since the last AG meeting and noted that no new end-uses have been added.

Agenda Item 3: Status Updates & Current Project Schedule

Speakers: Peter Steele-Mosey (Navigant)

Peter walked through the schedule & status update slides. He noted that additional resources have been brought on to help meet timelines but emphasized that timelines are still very tight. Peter noted that Navigant is still waiting on data from Enbridge that is expected to come at the end of this week.

The group discussed the objectives of the whole building benchmarking task, which are to develop a top-down approach to projecting achievable potential in a single segment, compare the merits of that approach against the bottom-up approach and consider the possibilities for broader application of the top-down approach for future studies.

A member noted that data needs to be cleaned and should include information on building / heating characteristics to support this approach. A member noted that the top-down approach may only be suitable for the commercial sector.

The group then discussed the alternative forecasts applied to the achievable potential task. Navigant noted that the two alternative forecasts are planned to be taken from the IESO's demand forecasts which are being developed for the end of the year. They will then produce adjusted natural gas forecasts to align with the IESO's alternative forecast assumptions.

Agenda Item 4: Task 3 - Reference Forecast

Speakers: Farhad Daruwala (Navigant)

Farhad gave a high-level overview of the reference case forecast. He discussed the key steps for Task 3 and reviewed the assessment of compatibility between IESO and natural gas utility forecasts.

A member asked if there are any fundamental changes anticipated for the new IESO forecast. Navigant indicated that although input values may change, Navigant understands that the forecasting methodology should be largely the same as the one used for the last IESO forecast developed for the 2016 Ontario Planning Outlook. Navigant will use the new IESO forecasts that are expected to come out in December.

A member asked for additional details on the weather normalization approaches used in the different demand forecasts, which Navigant committed to providing.

A member asked about the geography of the forecasts. Navigant noted that IESO's forecast is developed by transmission zone and the natural gas forecasts are developed by service territory and that they will align these boundaries through the base year disaggregation and forecasting tasks.

A member asked how fuel switching is treated in the reference forecast and how program-induced fuel switching will be separated from natural fuel switching. Navigant noted that the reference forecast accounts for natural fuel switching and additional programmatic fuel switching can be considered in the achievable potential scenarios. The team discussed the need to share the alternative scenario assumptions with the natural gas utilities for review once they are available.

A member asked how much variance between forecast assumptions is acceptable to consider the forecasts compatible. Navigant noted that the forecasts should be directionally similar. The group discussed the need for additional clarification around the key variables and thresholds used for compatibility.

A member asked whether the assumptions for persistence of historical energy efficiency programs across the natural gas and IESO forecasts are consistent and compatible. Navigant noted that it is difficult to do a direct comparison because the two have different methodologies (bottom up vs top down). They noted that for natural gas forecasts, assumptions for persistence of historical DSM programs are implicit whereas IESO calculates these savings explicitly.

The Project Team presented two slides on natural conservation, confirming that final study results would be “net savings” because natural conservation is considered in the reference forecast (Task 3) and the achievable potential budget scenarios (Task 7). The Project Team noted that natural conservation is already accounted for in the forecasts developed by IESO and the natural gas utilities, and these forecasts are the foundation of the APS reference forecasts. A member asked how free riders are considered when calculating budget impacts, since all programs have some free riders. The Project Team responded that achievable potential scenarios should consider adjustments to cost assumptions to account for free riders, and that the topic can be discussed further when the achievable potential task is initiated. A member suggested that natural conservation on the natural gas side is less significant than on the electricity side.

A member asked and Navigant confirmed that forecasts are done at an end-use level, not at a measure level, but technical, economic and achievable potential are calculated at the measure level.

Agenda Item 5: Task 4 – Measure Characterisation

Speakers: Divya Iyer (Navigant)

Divya reviewed Navigant’s approach to grouping measures and developing the measure list. The Project Team emphasized that the goals for today are to determine if any measure are missing from the measure list, if there are measures classified as zero impact that should be re-categorized and to identify any new measures (i.e., not on the TRM, MAL or previous studies) that should be added to the list

A member asked whether grouping measures may mean that some high cost measures will pass cost effectiveness tests that they would not have passed if they were reviewed independently. Navigant noted that they do not typically combine measures that have significantly different costs and savings and they will review any measures that are border-line cost effective in additional detail.

A member asked whether prioritization is based on payback and potential savings and another member asked whether prioritization is based on technical, economic or achievable potential.

Navigant responded that priority is based on achievable potential (driven by payback and savings) as well as data availability.

A member offered to speak to the team about baseline measure assumptions based on their experience in the residential sector. Navigant agreed to connect with the member after the meeting. A member asked whether savings will combine natural gas and electric savings into a single energy unit. Navigant replied that typically they do not combine fuel types but instead consider natural gas or electric savings separately.

A member asked whether LEDs are becoming baseline. The Project Team noted that IESO currently uses a mixed baseline of incandescent, CFL and LED for business cases. Another member asked what a ShowerStart Ladybug is and Navigant replied that it restricts water flow and is a zero impact measure. A member questioned availability of behavioural measure data and the Project Team noted that this would be considered during measure characterization.

A member asked how measures shown as having one efficiency level, but two baselines will be treated. Navigant noted that they will merge/harmonize the baselines if they are the same technology.

Members provided a number of comments on residential measures:

- Pool pumps should not have zero priority
- Duct installation should have a priority lower than three
- High efficiency windows should have priority lower than three
- Furnaces should have a priority lower than three
- Water heating should have a priority lower than three
- Heat reflector panels (gas) should not have zero priority

Members provided a number of comments on commercial measures:

- Add a ventilation optimization measure
- Add a measure to convert steam circulation to hot water circulation
- Add a behavioural measure
- Revise efficient transformers priority (currently zero)
- Add a high-efficiency transformer measure
- Add thermal storage as a new measure - Navigant responded in the AG meeting that electric thermal storage does not save energy but rather shifts demand to a different time and may increase consumption due to efficiency losses. Additionally, the incremental costs is substantially higher than the lifetime avoided costs.
- Air to Water Heat Pump COP 2.7: Navigant responded in the AG meeting that the potential of this measure will be captured under other heat pump fuel switching measures.

Members provided a number of comments on industrial measures:

- Add thermal oxidiser measure
- Add axial fan measure
- Add destratification fan measure
- Add a cogeneration optimization measure
- Split up some of the larger measure categories (e.g. boilers)
- Increase the priority of greenhouse lighting measure to 3

Members provided a number of comments on new measures:

- Add a residential gas heat pump measure
- Add industrial air source and ground source heat pump measures
- Remove measures that recommend switching to electric resistance heating

The Project Team noted that all areas that have been changed as a result of this feedback will be reflected in final measure list but that formal comment responses would not be provided.

The Project Team reviewed the measure characterization review process and clarified that dual fuel measures will be reviewed by both electricity and natural gas reviewers.

Agenda Item 6: Task 7 – Achievable Potential (Delphi Panel)

Speakers: Tyler Capps, Peter Steele-Mosey (Navigant)

Peter and Tyler presented the overview of Task 7 – Achievable Potential and the Delphi panel activities. Katelyn noted that this section has some updated language on financial and non-financial factors from original version circulated to AG. It is expected that these definitions will be revisited in future meetings.

A member noted that large and small industrial customers have very different behaviour, so both should be represented on the Delphi panel. A member offered contacts for energy managers.

Agenda Item 7: Task 8 – Whole Building Benchmarking (WBB)

Speakers: Peter Steele-Mosey, Farhad Daruwala (Navigant)

Peter provided an overview of the criteria for selecting a segment to analyze for the whole building benchmarking task. He asked the AG if they are aware of any longitudinal building-level data sources to help with this analysis.

A member asked whether data aggregated by segment would be helpful. Navigant replied that individual building data is needed but that data can be anonymized.

Peter walked through the data available within the Broader Public-Sector Database (BPSD). He noted that the Post-Secondary segment has a relatively low standard deviation and large number of buildings. A member noted that updated BPS data will be posted in the next few weeks. A member highlighted that the Post-Secondary segment has a lot of central plants, which may cause some issues with the data.

A member noted that there is good data for hospitals in the greening healthcare data. Another member noted that the School Board has ministry of education data, which is managed by Aegent (a consulting firm). A member suggested talking to Toronto Regional Conservation Authority about their hospital data and to the Toronto Tower Renewal Office about their high-rise residential building dataset.

The group discussed the possibility of accessing the utilities' customer data but noted that there would be privacy issues and difficult connecting the data to building information.

Agenda Item 8: Next Steps and 30-day Outlook

Speakers: Peter Steele-Mosey (Navigant)

Peter walked through the next steps and 30 day outlook slide.

Agenda Item 9: Wrap-up

Speaker: Bronwen Smith (IESO)

Bronwen closed out the meeting and asked the group to provide the following as soon as possible:

- Any outstanding comments on the measure list (new measures, prioritization of existing).
- Willingness to participate in a measure characterization sub-group. If so, provide the sector.
- Suggestions for the Delphi Panel. Also specify the sector.
- Comments on the WBB segment and any further thoughts on data sets that can be used.