2019 APS Project Team
c/o engagement@ieso.ca

August 29, 2018

Dear APS 2019 Project Team,

Re: Feedback on the draft Project Plan for the 2019 Achievable Potential Study (APS)

The Achievable Potential Study is a foundational document driving energy conservation targets, policy and program design in Ontario. The Environmental Commissioner of Ontario (ECO) is pleased to submit a series of comments and suggested actions that we hope will help inform the final Project Plan for the 2019 APS (see enclosed table).

Of critical importance to the ECO is that the benefits of conservation are fully valued in determining the province's conservation potential. Among other things, this will require some value being placed on greenhouse gas emissions reductions in addition to other non-energy benefits delivered by conservation actions (see enclosed table for more details).

If the Project Team has any questions or would like further information related to any of our comments and suggested actions, I would be happy to be of assistance.

Yours truly,

Mike Parkes

Senior Manager, Energy Policy
Environmental Commissioner of Ontario

2019 APS Project Plan Comment & Suggested Action Table		
Task/Topic	**Comment**	**Suggested Action**
General Comments on the Project Plan	Stakeholders have described many "black boxes" that have limited the usefulness and legitimacy of past conservation potential modeling exercises in Ontario.	All major inputs, assumptions, and adjustments that result in the final APS conclusions (including the calibration work mentioned throughout the project plan), should be transparent and made available to the public, where possible and practical.
Task 1 – Project Plan	*No comment*	*No suggested action*
Task 2 – Base Year Disaggregation	The base year disaggregation data should be as useful as possible for conservation program design purposes. In particular, it should disaggregate data based on those sub-sectors that present unique challenges or opportunities for program design.	If possible, the base year disaggregated segment data (section 4.3) should disaggregate: • multi-unit buildings where the tenants pay the utility bills from those multi-unit buildings where the landlord pays the utility bills; and • electricity customers not connected to the natural gas grid, particularly for residential segments.
Task 3 – Reference Forecasts	The reference case forecast will include the impact of "naturally-occurring efficiency changes", which has the effect of reducing the technical potential, perhaps quite significantly. It is important that the assumptions regarding naturally occurring efficiency used in task 3 are made explicit and are consistent with those used in task 4 (measure characterization).	Clarify key assumptions as to what level of "naturally-occurring efficiency changes" are included in the reference forecast (e.g., hypothesized adoption curves for key measures, in the absence of conservation programs), and how these assumptions alter the technical potential.
	The reference case forecast will account for the impact of existing and planned future codes and standards. It is unclear whether it will also account for other key government policies that could affect energy use (e.g., federal or provincial carbon pricing, vehicle electrification policies). As Ontario has yet to develop its new climate change plan, there is significant	It is important that the assumptions adopted in the reference case forecasts related to future codes, standards, and policies are made explicit, particularly those related to climate action which can have significant impacts on both the price of energy and the baseline energy use. Currently, while the province is

	uncertainty as to future codes, standards, and policies.	developing its new climate change plan, the Pan-Canadian Framework, which includes both a carbon tax and several complementary energy efficiency measures (including codes and standards), should arguably be incorporated into the reference forecast or one of the alternative forecasts. In addition or as an alternative, it may be appropriate to assess the impact of future policy uncertainty within the sensitivity analysis (Task 9).
	The Project Plan says it will use the forecast modelling undertaken for the Fuels Technical Report and the Ontario Planning Outlook as key data inputs.	Fuel use forecast models adopted from previous planning exercises should be updated with the most current historical fuel use data available.
Task 4 – Measure Characterization	The ECO has heard concerns that some existing conservation measure assumptions (e.g., installation/delivery costs, persistence, and realization rates) applied by the IESO/OEB do not reflect experiences on the ground.	Where possible, key measures on the measure list should be reviewed and updated as needed to reflect the most current available data based on the actual experiences of LDC or natural gas utilities in the province, in particular for: • installation/delivery costs, • realization rates, • persistence, and • any other key inputs. *n.b.* Installation cost data may differ greatly based on geography, and as a result, averaging these costs across the province may not be practical. In these cases unique regions may require different cost assumptions.

	Quantifying non-energy savings (including carbon) is listed as a measure-level output. However, the project plan does not specify how emissions reductions will be quantified for electricity measures (where emissions reduction potential differs greatly depending on the time of day and time of year when electricity savings occur).	Define a set of marginal emissions factors (g CO_2/kWh) for electricity use in different hours, and the assumptions behind the selected emissions factors; then use the 8760 load profiles for each measure along with these marginal emissions factors to quantify the GHG reduction potential of different measures.
Task 5 – Technical Potential	*No comment*	*No suggested action*
Task 6 – Economic Potential	To ensure that the APS truly models out all economic conservation potential, it is critical that all benefits of conservation programs are accounted for in cost-benefit testing. Section 8.2 ("Data inputs") makes no mention of benefits due to greenhouse gas reductions or other non-energy benefits.	Recent research conducted for the IESO suggests that the current 15% non-energy benefits adder (included since 2014) is an appropriate valuation for non-energy benefits, excluding carbon reduction. In addition to this adder, the cost-benefit tests should also explicitly account for carbon reduction benefits, selecting an appropriate value (e.g., the PCF carbon price backstop, or an up-to-date estimate of the social cost of carbon).
Task 7 – Achievable Potential	*No comment*	*No suggested action*
Task 8 – Whole Building Benchmarking	The description of the Whole Building Benchmarking pilot focuses on using actual energy use data to determine the impact of energy efficiency program participation (and other variables) on building energy use. This approach has validity in conservation program evaluation, but may not be the best use of this data in the context of a conservation potential study. Consideration should also be given to using the data to examine the wide range of energy use intensity within a	Develop an estimate for the conservation potential of buildings, assuming that all buildings within a category (e.g., schools) were brought up to a certain defined level of whole building energy performance, and compare this to the estimates of potential derived from a bottom-up, measures-based methodology. The results of this analysis could then be compared to the forecasted economic potential for this building type. Examples of this approach include

	relatively homogenous building category (e.g., schools) as an alternative method of estimating conservation potential.	chapter 4 of the ECO's 2015/2016 energy conservation report (*Conservation: Let's Get Serious*) and work done for the TRCA for schools, hospitals, and municipal buildings.
Task 9 – Sensitivity Analysis	The range of potential avoided costs could have a significant impact on model outcomes.	In particular, the sensitivity analysis should account for: • the range in potential values for greenhouse gas reduction benefits (i.e., from the PCF tax to a much higher carbon price that might be needed to achieve deeper emissions reduction targets), and • the potential changes in the cost of energy