Feedback Form

Local Achievable Potential Study Webinar – August 21, 2025

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To promote transparency, feedback submitted will be posted on this engagement webpage unless otherwise requested by the sender.

Following the Toronto Local Achievable Potential Study (L-APS) webinar held on August 21, 2025, the Independent Electricity System Operator (IESO) is seeking feedback on the draft findings. A copy of the presentations as well as a recording of the session can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca by September 18, 2025.

Topic	Feedback
What feedback do you have on the L-APS draft findings?	The study while technically complex is flawed. The figures for the 'achievable potential' represent a low-ambition, risk averse approach that is based on problematic assumptions

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	and judgements about future costs, market barriers, and technology adoption rates. The study takes current energy and policy 'givens' and extends them into the future. (see General comments for more details)
Is there additional information that should be considered before L-APS findings are finalized?	There needs to an assessment of the potential energy savings from various levels of V2G and V2G/B adoption rates. There needs to be a canvasing of best Distributed Energy Resources, Energy Efficiency and Demand Response practices internationally and estimates of energy savings if those were applied in Toronto. Screened out technologies should be subject to a second review. (see General comments for more details)
Are there specific modelling methodology or assumption topics that you would like to see discussed in the final public report?	There are too many energy 'status quo' assumptions baked into the analysis. There needs to be a 'high achievement' scenario that is modelled. What if Toronto was at the forefront of the renewable energy transition? (see General comments for more detail)
How can the IESO best communicate with communities and stakeholders on actioning the additional electricity demand-side management opportunities identified in the study?	There needs to be more and better opportunities for engagement. An ongoing citizen assembly is worth pursuing. But first the low ambition 'achievable potential' has to be significantly revised upwards. (see General Comments below)

General Comments/Feedback

The IESO public engagement process is seeking feedback on its draft Local Achievable Potential Study (LAP-S) for Toronto (September 2025).

The goal of the study is to assess the potential to offset future electricity generation and transmission requirements through energy savings that could be achieved by measures such as: (from the report)

• Behind the Meter Distributed Energy Resources (DERs) including battery storage and solar.

• Energy efficiency measures including heat pumps, HVAC, lighting, appliances, weatherization, and hot water.

• Demand Response including EV charging, HVAC equipment, and water heaters.

The study, according to the IESO, will assist "both immediate planning and long-term strategic development."

Unfortunately, both the study and the public engagement process are flawed.

Confining limits of the Energy Status Quo

The IESO engagement process seems more of an administrative burden than an opportunity to engage with those concerned about Toronto's energy future. The latest round, the webinar on the results of the Local Achievable Potential Study held on August 21, 2025 reinforces the point. Dense and overpacked PowerPoint slides, research results without adequate explanation and a refrain of 'we'll get back to you'.

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The IESO's approach to public engagement speaks to a more troubling issue. The agency helping to shape our energy future appears blinkered, unwilling to stray from the confining limits of the energy status quo.

Thinking about an energy horizon that extends out to 2045 should be an occasion for imagination, and opportunity for innovation and a time for transformative energy leadership. Instead, we are offered dampened expectations, a narrow economic calculus and an energy strategy which is locked in the past. Instead of dramatic advancements we get low ambition goals. Instead of long-term strategic planning we get missed opportunities.

Short-sighted exclusion of Vehicle-To-Grid (V2G) Battery Potential

A case in point is the IESO's decision to exclude Vehicle-to-Grid/Bidirectional (V2G/B) energy potentials from its analysis. V2G/B is an emerging and promising technical development that provides battery power to the grid when Electric Vehicles (EVs) are charged but idle (in other words, most of the time).

The IESO study has developed two scenarios, a reference case and a high electrification case. But even in the high electrification scenario where it is assumed that there will be higher adoption of EVs (30% adoption by 2030 and 100% by 2040) Vehicle-to-Grid energy savings are ignored.

In its explanatory memo the IESO acknowledges that the battery energy from EVS "is undoubtably large" but then dismisses its potential as "not meaningful for planning purposes". That is shortsighted. The IESO's rationale for exclusion is that V2G is a relatively new development, still at the pilot stage. However, the biggest energy pilot project underway in Ontario is the building of small modular reactors (SMRs) at Darlington. That is a pilot project with more considerable down side risks than V2G. But that hasn't prevented the IESO, in other contexts, from accepting SMR energy production as a given. Why the double standard? Instead of ruling out V2G energy potential it would be better to ask and provide some answers to the questions: What would it take to achieve the potential of V2G? what are the potential energy savings at various levels of adoption? Where in the world are the most advanced applications (the IESO limited its review to North America)?

Instead of encouraging Toronto (and Ontario) to be at the forefront of V2G developments the IESO gives up on the possibility without even trying.

Low ambition and risk adverse

The V2G example characterizes the IESO's approach to its study of the local achievable potential in Toronto. 'Why we can't do it', rather than 'what can we possibly achieve' frames the discussion. It suggests an organizational culture that is low ambition and risk-averse.

The IESO study lacks any sense of the urgency the climate crisis demands. It fails to consider the economic, health and social costs of continuing to rely on the Portland Gas plant and a city suffering high levels of nitrogen oxides, particulate matters and other contaminants associated with burning fossil fuels.

The IESO study lacks any vision that Ontario could be at the forefront of a renewable energy transition that provides jobs and community development. Instead, the study drives its conclusions down to the lowest possible "achievable potential".

A huge gap between what could be possible and what the IESO deems achievable

The IESO study team provides three estimates of incremental demand savings, what they refer to as "the electricity savings potential from a technical, economic and achievable perspective".

Here is how each of those are defined:

- "Technical Potential is the electricity savings resulting from the implementation of all technically feasible measures regardless of cost-effectiveness, customer awareness, etc.
- Economic Potential is the electricity savings resulting from the implementation of all technically feasible measures that pass the cost-effectiveness test.
- Achievable Potential is the electricity savings that can realistically be acquired after adoption rates over the period of the study are applied. Adoption rates are calculated considering market barriers, customer payback acceptance, perception of non-energy impacts and customer awareness of measures."

While the technical potential is quite high what the IESO considers achievable is quite low. And in the gap between what is technically possible and what the IESO considers achievable lies a series of problematic assumptions and lost opportunities.

The amount of energy savings that the IESO concludes are technically possible are reduced by excluding those technologies and applications the IESO deems "not cost effective". What remains is what the IESO considers the "economic potential". In turn, the economic potential is further eroded by, in the IESO's words; "real world constraints, including market barriers". This brings us to a much lower figure, the "achievable potential". This low figure is the IESO's long term goal.

The 'technical potential' high of about 7600 MW in summer demand savings (2045) is reduced to an 'economic potential' of about 4200 MW in summer demands savings (2045). In turn this is further

reduced to a low-ambition, final figure of about 1000 MW of summer demand savings. This figure is then further reduced, because some of the energy savings are already accounted for elsewhere, what the IESO considers the incremental opportunity.

The gap between the technical and the economic potential and what IESO considers "achievable" is huge. As the report notes "The overall achievable potential is about one eighth of the technical potential."(p 26)

Those figures are significant. The gap between the economic potential and the achievable potential is about 3,200 MW or the equivalent of the projected output of 8 Small Modular Reactors. The gap between the technical potential and the achievable potential is about 6600 MW or twice what the four large scale nuclear reactors at Darlington currently produce.

Such huge gaps require considerably more effort at closing them. The fog of pragmatism can blind us to what is both necessary and what is achievable. If there is an opportunity to offset the need for very expensive and risky small modular reactors, shouldn't it be explored? If a range of energy savings initiatives are cheaper than building new generating stations and transmission lines, shouldn't we do more than sideline them with low ball estimates of future consumer adoption rates?

Technically complex but misses the mark

The study, which is technically complex, methodologically sophisticated and painstakingly granular misses the mark. Here are three shortcomings:

1. The Benefits: Avoided Costs analysis is based on a narrow assessment of 'avoided energy costs' and 'avoided generation' and 'transmission costs'.

If we weren't in a world likely to surpass 2 C before long; If so much of the costs of fossil fuels weren't externalized (health costs and personal costs); and, if the opportunity costs of failing to lead in an energy transition weren't so high, then such a narrow economic calculus might be appropriate. But that isn't the new 'real' world.

2. The study extrapolates into the future from too many current 'givens'. But why not consider some outliers and possible game changers? The study provides two scenarios, a business as usual (reference case) and a high electrification scenario but why not a scenario that sees Ontario meet and exceed its climate targets for 2030 and beyond. What if the Ontario building code was changed to require an 'all electric' standard? (New York State has just passed such a law). What if there were incentives to install balcony solar? (In Germany there are plug and play balcony solar panels) What if new houses and apartment buildings were required to be EV ready? (Quebec has done so). What if Toronto funded window size heat pumps for apartments? (The New York housing authority has just completed a successful pilot project). What if there was a change in government to one committed to achieving emission targets and a renewable energy transition?

3. The study, despite its algorithms, multiple input data points, and complex modelling rests on assumptions and judgement calls. How can the IESO determine what is 'not cost effective' in 2040 or 2045? What can the IESO say about 'market barriers' twenty years from now? How can the IESO exclude, a priori, technologies and applications such as V2G or parking lot solar?

Our Energy Future is not just a technical exercise

Thinking about our energy future is not just a technical exercise.

The LAP-S should be phase one of a more comprehensive approach. The question the IESO should now consider is how to narrow and close the gap between the 'achievable potential', the 'economic potential' and in some cases, the 'technical potential'.

This rock-bottom, low ambition conclusion of the IESO is this.

"The draft Local Achievable Potential Study (L-APS) indicates that there is opportunity to cost-effectively secure 219 MW of incremental summer demand savings and 50 MW of incremental winter demand savings from energy efficiency, demand response, and behind-the-meter DER programs."

We need to do better.