ONTARIO CLEAN AIR ALLIANCE

Memo to: Samantha Polito, IESO

From: Jack Gibbons, Ontario Clean Air Alliance

Re: Information Requests re: IESO's September 2025 draft Local Achievable Potential Study Toronto Planning Region

Date: September 8, 2025

Introduction

The IESO is seeking feedback from the public with respect to its draft *Local Achievable Potential Study Toronto Planning Region* (September 2025) by September 18, 2025.

1. We note that the IESO's draft *Local Achievable Potential Study Toronto Planning Region* (L-APS) is only 52 pages long; whereas the *2019 Integrated Ontario Electricity and Natural Gas Achievable Potential Study* which was prepared for the IESO and the Ontario Energy Board has 367 pages.

2. We also note that the L-APS is missing key information that is provided in the 2019 *Study* including:
   - Total Resource Cost (TRC) Test estimates;
   - Programme Administrator Cost (PAC) Test estimates;
   - Energy saving potential (GWh);
   - Incentive and program costs;
   - Baseline year electricity data by end-use (e.g., lighting, heating, cooling) and sector (residential, commercial, industrial); and
   - Sensitivity analyses.

As a result, before we can give the IESO informed, evidence-based feedback on its draft L-APS, we need responses to our information requests below. We hope that the IESO will provide us with their responses in advance of its final date for feedback from the public re: its draft L-APS.

Information Requests

1. With respect to the reference scenario please provide the following information with respect to Toronto's total **economic EE** potential for the years 2030, 2035, 2040, 2045 & 2050:

   a) Energy potential (GWh);
   b) Summer peak demand potential (MW);

c) Winter peak demand potential (MW);
d) TRC LUEC ($/lifetime kWh);
e) TRC benefit-cost ratio.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

2. With respect to the reference scenario please provide the following information with respect to Toronto's total **economic DER** potential for the years 2030, 2035, 2040, 2045 & 2050:

a) Energy potential (GWh);
b) Summer peak demand potential (MW);
c) Winter peak demand potential (MW);
d) TRC LUEC ($/lifetime kWh);
e) TRC benefit-cost ratio.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

3. With respect to the reference scenario please provide the following information with respect to Toronto's total **economic DR** potential for the years 2030, 2035, 2040, 2045 & 2050:

a) Summer peak demand potential (MW);
b) Winter peak demand potential (MW);
c) Cost per kW-year; and
d) TRC benefit-cost ratio.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

4. With respect to the reference scenario please provide the following information with respect to Toronto's total **achievable EE** potential for the years 2030, 2035, 2040, 2045 & 2050:

a) Energy potential (GWh);
b) Summer peak demand potential (MW);
c) Winter peak demand potential (MW);
d) Program cost in given year ($ million)
e) TRC LUEC ($/lifetime kWh);
f) Incentive LUEC ($/lifetime kWh);
g) TRC benefit-cost ratio; and
h) PAC benefit-cost ratio.

Please also provide total program cost between 2025 and 2050 inclusive.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

5. With respect to the reference scenario please provide the following information with respect to Toronto's total **achievable DER** potential for the years 2030, 2035, 2040, 2045 & 2050:

i) Energy potential (GWh);

j) Summer peak demand potential (MW);
k) Winter peak demand potential (MW);
l) Program cost in given year ($ million)
m) TRC LUEC ($/lifetime kWh);
n) Incentive LUEC ($/lifetime kWh);
o) TRC benefit-cost ratio; and
p) PAC benefit-cost ratio.

Please also provide total program cost between 2025 and 2050 inclusive.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

6. With respect to the reference scenario please provide the following information with respect to Toronto's total **achievable DR** potential for the years 2030, 2035, 2040, 2045 & 2050:

   a) Summer peak demand potential (MW);
   b) Winter peak demand potential (MW);
   c) Program cost in given year ($ million)
   d) Cost per kW-year;
   e) TRC benefit-cost ratio;
   f) PAC benefit-cost ratio.

   Please also provide total program cost between 2025 and 2050 inclusive.

   Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

7. With respect to the reference scenario please re-calculate the total achievable **EE** potential with the following revised assumptions:
   a) All the incentives are equal to their measures' total incremental costs; and
   b) no maximum market share parameters.

   Please provide the following information with respect to your revised calculations for the years 2030, 2035, 2040, 2045 & 2050:

   q) Energy potential (GWh);
   r) Summer peak demand potential (MW);
   s) Winter peak demand potential (MW);
   t) Program cost in given year ($ million)
   u) TRC LUEC ($/lifetime kWh);

v) Incentive LUEC ($/lifetime kWh);
w) TRC benefit-cost ratio; and
x) PAC benefit-cost ratio.

Please also provide total program cost between 2025 and 2050 inclusive.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

8. With respect to the reference scenario please re-calculate the total achievable **DER** potential with the following revised assumptions:
   c) All the incentives are equal to their measures' total incremental costs; and
   d) no maximum market share parameters.

   Please provide the following information with respect to your revised calculations for the years 2030, 2035, 2040, 2045 & 2050:

   y) Energy potential (GWh);
   z) Summer peak demand potential (MW);
   aa) Winter peak demand potential (MW);
   bb) Program cost in given year ($ million)
   cc) TRC LUEC ($/lifetime kWh);
   dd) Incentive LUEC ($/lifetime kWh);
   ee) TRC benefit-cost ratio; and
   ff) PAC benefit-cost ratio.

Please also provide total program cost between 2025 and 2050 inclusive.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

9. With respect to the reference scenario please re-calculate the total achievable **DR** potential with the following revised assumptions:
   e) All the incentives are equal to their measures' total incremental costs; and
   f) no maximum market share parameters.

   Please provide the following information with respect to your revised calculations for the years 2030, 2035, 2040, 2045 & 2050:

   g) Summer peak demand potential (MW);
   h) Winter peak demand potential (MW);
   i) Program cost in given year ($ million)
   j) Cost per kW-year;
   k) TRC benefit-cost ratio;
   l) PAC benefit-cost ratio.

Please also provide total program cost between 2025 and 2050 inclusive.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

10. With respect to the reference scenario please provide the following information with respect to Toronto's total **economic DR** potential for each of the following programs i) residential smart thermostat; ii) residential water heating; iii) commercial smart thermostat and iv) commercial water heating; for the years 2030, 2035, 2040, 2045 & 2050:

    m) Summer peak demand potential (MW);
    n) Winter peak demand potential (MW);
    o) Market share;
    p) Cost per kW-year;
    q) TRC benefit-cost ratio;
    r) PAC benefit-cost ratio.

    Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

11. With respect to the reference scenario please provide the following information with respect to Toronto's total **achievable DR** potential for each of the following programs i) residential smart thermostat; ii) residential water heating; iii) commercial smart thermostat and iv) commercial water heating; for the years 2030, 2035, 2040, 2045 & 2050:

    s) Summer peak demand potential (MW);
    t) Winter peak demand potential (MW);
    u) Market share;
    v) Program cost in given year ($ million)
    w) Cost per kW-year;
    x) TRC benefit-cost ratio;
    y) PAC benefit-cost ratio.

    Please also provide total program cost between 2025 and 2050 inclusive.

    Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

12. Please provide the actual/forecast market shares of the IESO's Peak Perks i) residential; and ii) commercial smart thermostat programs in Toronto for 2024, 2025, 2030, 2035, 2040, 2045 and 2050.

13. With respect to the reference scenario please provide the following information with respect to Toronto's total **technical** potential for: i) residential PV; ii) large parking lot PV [1,500 square metres or larger]; and iii) total C&I PV; for the years 2030, 2035, 2040, 2045 & 2050:

    f) Energy potential (GWh);
    g) Summer peak demand potential (MW);
    h) Winter peak demand potential (MW)

14 With respect to the reference scenario please provide the following information with respect to Toronto's total **economic** potential for: i) residential PV; ii) large parking lot PV [1,500 square metres or larger]; and iii) total C&I PV; for the years 2030, 2035, 2040, 2045 & 2050:

    a) Energy potential (GWh);

    b) Summer peak demand potential (MW);

    c) Winter peak demand potential (MW);

    d) TRC LUEC ($/lifetime kWh);

    e) TRC benefit-cost ratio.

    Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

15. With respect to the reference scenario please provide the following information with respect to Toronto's total **achievable** potential for: i) residential PV; and ii) large parking lot PV [1,500 square metres or larger]; and iii) total C&I PV; for the years 2030, 2035, 2040, 2045 & 2050:

    gg) Energy potential (GWh);
    hh) Summer peak demand potential (MW);
    ii) Winter peak demand potential (MW);
    jj) Market share;
    kk) Program cost in given year ($ million)
    ll) TRC LUEC ($/lifetime kWh);
    mm) Incentive LUEC ($/lifetime kWh);
    nn) TRC benefit-cost ratio; and
    oo) PAC benefit-cost ratio.

Please also provide total program cost between 2025 and 2050 inclusive.

Please provide all cost estimates in 2025$ or identify the years of all dollar cost estimates.

16. According to page 33 of the L-APS, the BTM DER summer demand technical potential is approximately 300 MW in 2025; whereas according to the Ontario Clean Air Alliance's *Transforming Toronto with Solar* report, Toronto's potential roof top and large parking lot solar PV capacity is 10,031 MW. Please explain the reasons for this disparity.

17. Please provide a break-out of Toronto's i) summer and ii) winter electricity peak hour electricity demands (MW) by major end uses (lighting, space heating, space cooling, EVs etc.) and sector (residential, commercial/institutional, industrial) in 2024 and according to the reference and high electrification forecasts for 2050. With respect to the 2050 winter space heating demand please break-out the forecast by heat pumps and electric resistance heating.

18. Do the L-APS's avoided cost estimates include the forecast cost of the proposed third line from the Darlington or Pickering Nuclear Stations to downtown Toronto? If yes, please provide the forecast total capital cost of this transmission line.

19. For each measure, please provide the L-APS's maximum market share parameter for its adoption curve.

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