Feedback Form

Regional Electricity Planning in the Toronto Region – July 10, 2025

Feedback Provided by:

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

Following the Toronto regional planning webinar held on July 10, 2025, the Independent Electricity System Operator (IESO) is seeking feedback on the results of the options screening. A copy of the presentation as well as recording of the session can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca by July 25, 2025.

Topic	Feedback
What feedback do you have regarding the results of the wire and non-wire options screening?	Per the information shared by the City of Toronto and Enwave (per the partnership between the City and Enwave to develop low carbon thermal energy networks within Toronto) with the IESO and the Toronto IRRP Technical Working Group (TWG), there is significant potential to reduce peak electricity demand and overall electricity consumption relative to today's peak and forecasted future electricity peaks in Toronto's downtown core and the Port Lands through non-wires measures that leverage existing and potential new district energy infrastructure (aka thermal energy networks). These non-wires measures include large-scale, peak-shaving electric boilers or heat pumps that would enable the electrification and decarbonization of the downtown district energy system (DES) and connected buildings in Toronto by fuel-switching (i.e. using existing Enwave back-up heating assets) and/or leveraging new large-scale thermal energy storage. These district energy solutions would significantly reduce peak electricity system capacity needs and overall electricity consumption relative to electrification of buildings via less efficient stand-alone in-building electrification solutions. These single-building solutions are unlikely to be peak-responsive given that most buildings would be Class B and not responsive to electricity system conditions. In addition to immediate, near and long term opportunities for peak electricity demand reductions and reductions in overall electricity consumption in downtown Toronto and the Port Lands, Enwave also recommends that the IESO – via its local distributed energy resource (DER) potential study for Toronto currently underway– assess the cost-effective and overall electricity demand reduction and energy efficiency potential of district energy solutions (including peak-shaving/dispatchable electric boilers/heat pumps and large-scale thermal energy storage) for other fast-growing areas of Toronto including Downsview, Golden Mile and Rexdale. As previously communicated, Enwave is happy to support the IESO and TWG with additional information to enable the quantification and evaluation of the costs and benefits of these non-wires measures throughout the IRRP area. The IRRP should include an action to develop appropriate

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	contracting mechanisms to recognize the multiple electricity system values of these district energy solutions.
What feedback do you have on the preliminary transmission wire options?	None at this time.
What feedback do you have regarding how screened-in options could inform the options analysis and draft recommendations?	In assessing the reliability and viability of district energy scale solutions including large-scale dispatchable/peak-shaving electric boilers or heat pumps and thermal energy storage, Enwave recommends that the IESO consider the certainty with which the large-scale dispatchability/peak-shaving capacity reductions of these measures can be secured by the IESO through appropriate contracting mechanisms with district energy owner/operators (e.g. as dispatchable loads under long term capacity contracts) vs the cost and administrative challenge of contracting with many small scale solutions.
Additional information that should be provided in future engagements to help understand perspectives and insights.	Enwave requests additional information on how the IESO has assessed (or will assess) within the DER achievable potential study it is currently undertaking for Toronto, the cost and benefit of dispatchable, peak-shaving electric boilers/heat pumps and large-scale thermal energy storage for Toronto's existing downtown district energy system and Port Lands relative to the IESO's reference case forecast which is understood to generally assume load growth due to electrification via stand-alone in-building electrified heating and cooling solutions. Enwave would also request additional information on how the IESO's Toronto DER achievable potential study has assessed (or will assess) the value of these solutions to electricity ratepayers for other high growth areas of Toronto including Downsview, Golden Mile and Rexdale.

General Comments/Feedback

Enwave applauds the IESO for its recognition of the electricity system value of district energy and low carbon thermal energy networks. The Government of Ontario's new, and first-of-its kind integrated energy plan, "Energy for Generations – Ontario's Integrated Energy Plan to Power the Strongest Economy in the G7" recognizes the ability of district energy systems (DES) to "improve efficiency, lower emissions, and reduce infrastructure costs" both for electricity and thermal energy customers.

The plan sets an objective to expand DES in Ontario and provides direction to the IESO to identify opportunities within current and upcoming policies, programs and procurements for new and existing DES. Peak-shifting, district energy-system scale electric boilers or heat pumps can provide a more efficient means of electrification than stand-alone in-building electrification solutions. Peak-shifting, district-scale electric boilers or heat pumps in Toronto's downtown core can leverage Enwave's existing back-up heating and cooling systems during electricity system peaks (i.e. in response to IESO market signals) to significantly reduce peak-demand relative to the Toronto IRRP reference/BAU forecast which is understood to generally assume electrification through less efficient stand-alone in-building electrified technologies. District energy with peak-shifting, dispatchable electric boilers or heat pumps, and large-scale thermal energy storage can provide cost-effective, large-scale peak demand reductions in areas where significant new building development is planned or retrofits will take place as existing in-building equipment comes to end of life including downtown Toronto and Toronto's Port Lands. Leveraging these solutions in Toronto's downtown core and Port Lands could cost-effectively reduce peak-demand relative to the IRRP reference forecast by hundreds of megawatts. Per the Minister of Energy's directive, new appropriate IESO contracting mechanisms are needed to recognize the electricity system value of these district energy solutions.

Dispatchable, electrified district energy may provide multiple benefits to the electricity system and electricity ratepayers in Toronto and Ontario more broadly including:

1. **Enhanced reliability:** electrified district energy system scale boilers/heat pumps using existing district back-up systems or new large-scale thermal energy storage for peak-shaving to support electricity system reliability and cost-effectiveness; avoid new peak demand from electrification using more electricity-intensive/less peak responsive Class B buildings
2. **Energy affordability:** reduce costs for new electricity capacity resources and leverage district energy solutions as non-wires alternatives to make efficient use of transmission and distribution infrastructure; share electricity system value of district energy solutions between thermal and electricity ratepayers to provide greater value for all Ontarians
3. **Efficient use of new/refurbished nuclear resources and a 3rd transmission line to Toronto:** make efficient use of baseload electricity resources and new transmission to Toronto with electrified district-scale, peak-shaving electric boilers/heat pumps and large-scale thermal energy storage to store baseload generation for use during peak times
4. **Economic development**: free up existing electricity system capacity and make more efficient use of new electricity infrastructure to enable the connection of new job-creating loads and affordable housing and reduce capital costs of electrification for individual building owners
5. **Integrated Energy Plan:** alignment with policy and objectives set out in Ontario's new integrated energy plan
6. **Manage the pace and electricity system impact of heating electrification** in a way that supports electricity system reliability, affordability and sustainability