Feedback Form

Regional Electricity Planning in Toronto – December 5, 2024

Feedback Provided by:

Name: Fariha Husain Title: Director, Project Development Organization: NRStor Inc. Email: Date: January 3, 2025

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

Following the Toronto regional planning webinar held on December 5, 2024, the Independent Electricity System Operator (IESO) is seeking feedback on the draft regional electricity needs and the Local Achievable Potential Study. A copy of the presentations as well as recordings of the sessions can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca by January 3, 2025.



Regional Planning - Draft Electricity Needs

Торіс	Feedback
What feedback do you have regarding the draft electricity needs identified?	NRStor appreciates the fulsome information provided by the IESO in their presentation and we look forward to the final report for more details on the exact needs (e.g. circuits) and timing (e.g. defining near, medium and long- term). We are very supportive of the need to review non- wires solutions as potential solutions to the identified electricity needs.
What feedback do you have regarding how to meet the electricity needs to inform upcoming milestones?	As stated above, the emphasis on considering non-wires solutions in the presentation from the IESO is encouraging as there are projects underway in Toronto that can meet the identified needs within the near, medium and long- term. For example, NRStor has submitted a System Impact Assessment application for a 200 MW energy storage project in the Portlands which could serve as a medium- term solution or non-wires solution to meet the future needs from development in the area. In tandem, we are working on a few fleet projects which would aggregate several hundreds of homes equipped with battery storage to provide grid services including peak shaving. These projects can support the IESO and Toronto Hydro in creating local solutions to local problems. Overall, the IESO should consider NRStor's approach to whole system efficiency which includes enabling multi-use assets, co- locating capacity with load, and facilitating customer and community participation in the grid.
What additional information should be considered as we screen high-level potential options?	Overall, the IESO should consider NRStor's approach to whole system efficiency which includes enabling multi-use assets, co-locating capacity with load, and facilitating customer and community participation in the grid. NRStor recommends that the IESO: 1. Prioritizes the procurement of multi-use and shared assets, including the removal of contractual barriers that make exclusive use of assets that could otherwise support multiple grid functions at the bulk, transmission, and distribution levels. 2. Establishes a commercial and contracting pathway for bulk and regional planning recommendations for non-wires projects that provide multi-grid services. This should include full

Торіс	Feedback
	compensation mechanisms for the stacked benefits from Front-of-the-Meter and/or Behind-the-Meter distributed energy resources and nodal aggregations, with minimum size threshold of 100 kW, for all sectors including residential, commercial and institutional, and industrial. 3. Expands the official regional planning working group to include community representatives and developers to help ensure sufficient lead time for market exploration of DERs and non-wires solutions in response to the load and/or supply constraints of that region. 4. Enables active customer participation to unlock more dynamic use of the grid and help customers feel empowered with choice. In particular, for areas that anticipate high load growth and electrification, the province, IESO, and Toronto Hydro should explore and implement procurements, programs, and pricing schemes that help prioritize solutions that enable more dynamic use of the grid and which can serve as critical thermal and electrical reserves for the customers and the grid, such as thermal storage and distributed batteries.
What additional information should be provided in future engagements to help understand perspectives and insights?	NRStor recommends provision of locational nodal and temporal price signals, which can help guide the value for non-wires solutions and DERs. To support community decision-making on project selection for anticipated loads, the IESO, transmission operator, and LDCs should work closely with the municipalities to ensure alignment of energy planning at the bulk, regional, and distribution levels with program offerings with the broader utility and infrastructure planning and projects, starting at the municipal level (housing, transit, water treatment, etc.). We also suggest that the official formal regional planning working group is expanded community representatives and developers to help ensure sufficient lead time for market exploration of DERs and non-wires solutions in response to the load and/or supply constraints of that region. To help ensure equitable access to energy services: a. Conduct an energy affordability baseline analysis and benchmarking data on issues such as energy burden and access to marginalized and vulnerable communities. b. Implement a "local champions" program whereby representatives of a community are trained to relay information about how costs and benefits associated with (proposed) energy

Торіс	Feedback
	policy and regulatory decisions are distributed across their communities, which can help guide support and programming tailored to diverse local needs.

Local Achievable Potential Study (LAPS)

Торіс	Feedback
What feedback do you have on the scope that the IESO should consider?	In addition to the proposed sources, we recommend incorporating behind-the-meter and front-of-the-meter, standalone and hybrid batteries, as well as aggregated batteries and thermal storage, in all sectors, as part of the upgrade measure list in the Technical Potential. We are glad to see that the LAPS will be using the IESO 8760 hourly loadshape profiles as well as load forecasts. We highly recommend that the outcomes of the study provide temporal and locational nodal (not just zonal) price signals, which can help guide the value for non-wires solutions and DERs.
What feedback do you have on the methodology that the IESO should consider?	The methodology is very clear but there are a few considerations, especially in the fourth step of the study. In the process of reviewing Technical Potential, the IESO needs to ensure that the capped network hosting capacity considers future improvements to the system to enable more capacity or the ability to implement non-wires alternatives to increase capacity. For the Economic Potential scenario, we need to ensure that it values avoided costs to the transmission and distribution system, and potential stacking of revenue streams (for instance, pricing schemes such as Ultra-low Overnight, incentive programs like the electricity Demand Side Management, and procurements like Toronto Hydro's local Demand Response program) that could further support the economics of DERs. The potential for DERs like battery storage to free up upstream congestion as well as provide back-up and resilience benefits for the grid and customers should also be captured in the Economic Potential. The Achievable Potential scenario should consider the projected market expansion of measures like battery storage (including the possibility to install outdoors in milder climates like Toronto) as well as capacity building for

Торіс	Feedback
	trades to install DER measures that could be implemented to enable some of the outcomes in the Technical Potential scenario. To further bridge the gap between the Technical, Economic, and Achievable Potential scenarios, the province, Toronto Hydro, the IESO should consider feasible future programs in their design that would support the economics of DERs e.g. incentive programs for residential or commercial DERs including energy storage and revenue models that enable stacking of front-of-the-meter and behind-the-meter measures.
What feedback do you have on the potential uses for the LAPS that the IESO should consider?	The LAPS is a great tool for the market to assess opportunities for expansion. Similar local integrated demand side management and DER potential studies should be commissioned for other regions on a regular basis to help evaluate the potential for beneficial electrification as well as load management/demand flexibility in addition to traditional measures. These studies should help inform the province's demand outlooks and resource adequacy plans as well as pricing schemes and the budgets for IESO and LDC programming and procurements.
What additional sources or regional policies and trends should be considered?	IESO should consider the removal of contractual barriers that make exclusive use of assets that could otherwise support multiple grid functions at the bulk, transmission, and distribution levels. The IESO should establish a commercial and contracting pathway for bulk and regional planning recommendations for non-wires projects that provide multi-grid services in the residential and, commercial and industrial sectors. There needs to be consideration for full compensation mechanisms for the stacked benefits from Front-of-the- Meter and/or Behind-the-Meter distributed energy resources and nodal aggregations, with minimum size threshold of 100 kW. The technology adoption curve for batteries should consider CSA C22:1:24 (26th edition) which allows for outdoor battery residential installations in addition to indoor installs, under set conditions. Outdoor installs of batteries like Tesla's PW3 work exceptionally well for

Торіс	Feedback
	applications in milder climate zones like the City of Toronto, where installs can be scaled at lower costs.
	In addition, the IESO should assign higher procurement scoring for generation and capacity (as well as hybrids) projects that are sited within large load centres such as heavy industry or urban density areas. It should ensure that storage assets can be treated as both generation and load, optimally operated depending on system needs.
	We are glad to see that the LAPS will incorporate the Toronto Green Standard. We believe that it is essential for the IESO and the LDCs to work together with municipalities to align energy planning at the bulk, regional, and distribution levels within broader utility and infrastructure planning and projects, starting at the municipal level (housing, transit, water treatment, etc.).
	To help bridge the gap between the Technical Potential and Achievable Potential particularly for the disadvantaged populations, the province should: a. Conduct an energy affordability baseline analysis and benchmarking data on issues such as energy burden and access to marginalized and vulnerable communities. b. Implement a "local champions" program whereby representatives of a community are trained to relay information about how costs and benefits associated with (proposed) energy policy and regulatory decisions are distributed across their communities, which can help guide support and programming tailored to diverse local needs.

General Comments/Feedback

NRStor appreciates the opportunity for feedback on Regional Electricity Planning in Toronto. NRStor has developed and built one of Canada's largest and most technologically diverse portfolios of energy storage assets, including the 250 MW/1000 MWh Oneida Energy Storage Project in partnership with Six Nations of the Grand River as well as thousands of home battery installations in Ontario and across Canada. As a leading for-profit-with-purpose energy storage developer, NRStor is invested in

Ontario's energy system transformation to help meet today's objectives of affordability, customer centricity, decarbonization, resilience, and reliability.