Feedback Form

Regional Electricity Planning in Toronto – April 16, 2024

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

Following the Toronto Region electricity planning engagement webinar held on April 16, 2024, the Independent Electricity System Operator (IESO) is seeking feedback on the draft electricity demand forecast scenarios and Engagement Plan. A copy of the presentation as well as a recording of the session can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca by **May 7, 2024.**

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What additional information, if any, should be incorporated in the proposed electricity demand scenarios? What are some of your key developments, projects or initiatives that should be considered in developing an electricity demand forecast for the Toronto region?	NRStor, Mississaugas of the Credit Business Corporation (MCBC), and Aecon are working towards developing an up to 200 MW, 800 MWh Battery Electricity Storage System in the Toronto Portlands. The Toronto Battery Project will help bring the Province of Ontario and the City of Toronto closer to achieving net zero goals through providing greater system flexibility and enabling responsiveness to increasing renewable generation. Additionally, the project will be able to support a variety of essential grid services, including offering emissions-free capacity, operating reserve, and frequency regulation, which will further reinforce grid stability, performance, and resilience. The project could result in an estimated reduction of 2.4 million tons of CO2 emissions over 20 years. MCBC is the wholly owned business development corporation of the Mississaugas of the Credit First Nation. The Toronto Battery Project will support the City of Toronto in meeting their climate action goals outlined in the TransformTO Net Zero Strategy to drive down community-wide emissions by 2040. This project addresses several actions including energy storage solutions to reverse decisions to expand natural gas systems locally, offer a net zero energy source with resilience and back-up power benefits, lower barriers to renewable energy adoption, and create opportunities to partner. More specifically, this project will provide: Capacity services including supplying power when called upon by the grid operator to help address any capacity shortfalls in the provincial power system, particularly as fossil fuel capacity is retired. Operating reserve through standby power or demand reduction that can be called on with short notice to balance unexpected mismatch between generation and load. Energy arbitrage opportunities by storing surplus baseload generation in off-peak hours and discharging this surplus energy during peak hours. Renewable energy integration via balancing of surplus and shortfalls of renewable energy in relation to provincial consumption needs. Transmission congestion management which will give Hydro One additional power flow capabilities to ensure it maximizes the flow of power and reduces constraints. Peak shaving and demand side management which can help replace the use of high-cost electricity with stored low-cost electricity that will reduce

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	the cost on the consumer. Besides utility scale energy storage, the benefits and impacts of distributed/residential battery storage systems should also be considered. NRStor is working on scaling up residential battery installations and their aggregated potential to provide multiple services to support bulk system, distribution and customer needs. Could the IESO provide an explanation for embedded generation and whether the load forecasts are inclusive of behind the meter distributed energy resources, and in particular aggregated distributed energy resources (DER) such as aggregated customer-sited battery storage? For instance, will the load forecasts factor in the forthcoming DER aggregation participation model in IESO's administered markets? In certain use-cases, it may be more beneficial to install behind-the-meter storage to provide demand flexibility and support customer needs in addition to meeting critical capacity needs. Further collaboration is needed from the IESO to identify and unlock value streams for distributed energy resources like residential battery storage. NRStor has already successfully demonstrated the technological feasibility of a residential battery storage system through the Cecil Pilot Project which was funded through the Grid Innovation Fund.
What local issues and concerns should be considered in the electricity planning?	Electricity planning should reinforce the targets set by the City of Toronto through the TransformTO Net Zero Strategy. These include the reduction of the City's future GHG emissions from 1990 levels at a pace of 45% by 2025, 65% by 2030 and net zero by 2040. Energy storage has a key role in meeting these targets as it will enable Toronto to: increase clean energy generation by storing excess energy from renewable sources and thus reducing the need for curtailment, provide power to meet local, regional, and/or provincial peak demand reducing the need for natural gas peaker plants, enable Torontonians to store low-cost energy at night for use during the day, provide long term back-up power to the city and other system wide benefits including local and regional demand flexibility. When the IESO undertakes system planning for an energy storage project such as the Toronto Battery Storage project, we encourage staff to take a broader approach to modeling the system impacts and consider storage projects as flexible grid management assets. Similar to the LT1 RFP

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	process, we support planning to promote Indigenous participation, through inclusion of territorially relevant nations, organizations in the IRRP process, with the general intention of prioritizing Indigenous equity ownership of future projects, along with mindfulness of any sensitivities communities may have regarding recommended outcomes.
What information is important to provide to participants throughout this engagement?	Participants must be provided information on scenarios under which the Toronto electricity plan could meet the TransformTO Net Zero Strategy targets. This includes how clean renewable energy and storage could provide non-wires alternatives to meet the City's growing energy need and how a combination of these uses could displace future natural gas generation. Scenarios should consider information on forecasted loads and existing infrastructure on a localized basis including hourly demand forecasts as well as (distribution) locational marginal pricing. A breakdown of all value streams factored in for grid-scale storage as well as distributed energy resources and in particular behind the meter energy storage should also be developed.
Does the proposed Engagement Plan provide sufficient scope and opportunities for input?	NRStor commends the IESO's commitment to meaningful engagement in the Toronto IRRP process. NRStor would appreciate the opportunity to meet with the IESO and the TWG to discuss these opportunities directly and understand how it can support the IRRP process.

General Comments/Feedback

NRStor appreciates the comprehensive engagement by the IESO in the launch of the IRRP process and is encouraged to see a greater emphasis on non-wires alternatives including energy efficiency and embedded generation. The modeling exercise should also consider behind the meter distributed energy resources and in particular in the provision of local and regional demand flexibility that may also coincide with bulk needs. To fully unlock the value of these resources cost effectively, NRStor requests more granular load forecasts that account for temporal (e.g., hourly) and locational (e.g., distribution locational marginal pricing) needs. NRStor is an industry-leading Canadian energy storage developer, owner and operator with experience deploying energy storage across the energy supply chain. NRStor's vision is to deploy energy storage projects at scale in order to accelerate the transition to a low-carbon energy system. NRStor has successfully deployed numerous first-of-a-kind energy storage projects and now owns and operates one of Canada's largest and most technologically diverse portfolios of energy storage assets. This includes a 250 MW/1000 MWh

Battery Energy Storage Project in Ontario in partnership with Six Nations of the Grand River Development Corporation, Aecon and Northland Power. NRStor develops projects in partnership with Indigenous communities to maximize value creation with a triple bottom line approach. This ensures support and acceleration into Ontario's transition to clean energy and offers a pathway toward meaningful economic reconciliation. NRStor values the importance of having Indigenous participation as equity contributors and owners in projects wherever possible.