

# Toronto Region Electricity Planning Process Public Webinar #1 – April 16, 2024

## Stakeholder Feedback and IESO Responses

The IESO hosted a public webinar on April 16, 2024 for the [Toronto Region](#) as part of its engagement to inform the development of a long-term electricity plan – Integrated Regional Resource Plan (IRRP). During the webinar, the IESO provided an overview of the regional electricity planning process and status, shared the draft electricity demand forecast scenarios, and draft engagement plan for input. The presentation material and recorded webinar are available on the [engagement webpage](#). The IESO appreciates the input received, which will be considered by the Technical Working Group<sup>1</sup> to develop the IRRP. Feedback was received from the following parties and the full submission can be viewed on the [engagement webpage](#):

- [2030 Districts Network](#)
- [Allan Baker](#)
- [Atura Power](#)
- [Boltzmann Institute](#)
- [Cerebral Energy Advisors](#)
- [City of Toronto](#)
- [Clean Air Partnership](#)
- [Conscious Capital World Inc.](#)
- [David Smith](#)
- [Enbridge Gas Inc.](#)
- [Environmental Defence](#)
- [Enwave Energy Corporation](#)
- [EverGreen Energy Corp](#)
- [Mississaugas of Scugog Island First Nation](#)
- [NRStor](#)
- [Ontario Clean Air Alliance](#)
- [Pollution Probe](#)
- [The Atmospheric Fund](#)
- [Toronto East End Climate Collective](#)
- [University of Toronto](#)

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<sup>1</sup> The Technical Working Group consists of the IESO as the lead, the local transmitter (Hydro One Networks Inc.), and the Local Distribution Company (Toronto Hydro – Electric System Limited).

The section below summarizes feedback received related to key developments, projects, and initiatives, as well as local issues and concerns that should be considered in the electricity planning for the Toronto Region.

## Considerations for Electricity Demand Forecast Scenarios

Feedback submissions indicated that increased transparency about the methodologies used to develop forecasts is essential. Notably feedback submissions requested for detailed disaggregate demand data, data for supply and demand side management scenarios and forecasting accuracy to be shared with the public. Additionally, the feedback received encouraged the consideration of alternate variables to develop the forecast. Many submissions noted the importance of aligning the IRRP with the City of Toronto's net zero goals. Feedback on these topics is summarized below.

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <p>Share additional information on the forecasting methodology, specifically:</p> <ul style="list-style-type: none"> <li>Atura Power requested clarification around how loads related to non-emitting resources, such as hydrogen, are considered.</li> <li>City of Toronto noted certain ambiguities and requests more details such as whether GDP is expected to grow steadily or remain the same, what 'dwellings' encompasses, and what the estimated 100% adoption rate of electrified heating includes. It was also noted that the TTC is currently projecting a completely electrified fleet by 2037, which has implications for the electricity demand forecast.</li> <li>Clean Air Partnership, David Smith, and Enbridge Gas Inc. requested more details regarding assumptions used to develop each scenario, including impact of Conservation and Demand Management (CDM).</li> <li>NRStor, David Smith, and Toronto East End Climate Collective requested more detail regarding assumptions and impacts of</li> </ul> | <p>The IESO strives to make information available throughout the development of the Integrated Regional Resource Plan (IRRP) to enable meaningful feedback during the process and decisions to be made. Data and information to be made available during IRRP development is outlined in the <a href="#">IESO Regional Planning Information and Data Release Guideline</a>.</p> <p>Generally, the IESO will provide a high-level summary of the load forecast through its first engagement webinar to solicit input, and the detailed methodologies are typically published with the final report. As part of the IRRP for Toronto, the IESO began providing detailed methodology and load forecasts early in the process to enable more purposeful community and stakeholder participation and input such as the document posted. For more information, please visit the <a href="#">IESO website</a> for details around Forecast Methodology and Data Tables.</p> <p>At this stage, the following information is available:</p> <ul style="list-style-type: none"> <li>Breakdown of residential, commercial, and industrial customers by connected kVA in Toronto can be found <a href="#">here</a>.</li> <li>Forecasted demand savings from conservation and demand management programs, codes and standards and savings can be found in the data tables <a href="#">here</a>.</li> </ul> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>embedded generation and whether the load forecasts are inclusive of behind the meter Distributed Energy Resources.</p> <ul style="list-style-type: none"> <li>NRStor noted participants must be provided information on forecasted loads and existing infrastructure on a localized basis including hourly demand forecasts as well as (distribution) locational marginal pricing.</li> <li>University of Toronto requested additional details regarding historical and future temperature trends.</li> <li>The Atmospheric Fund expressed concern about the focus on forecasting peak demand rather than the overall load profile, which does not provide insight into energy consumption patterns.</li> <li>Cerebral Energy Advisors requested clarification on impact of exponential growth in new technologies (DERs, EVs, heat pumps, etc.).</li> </ul> | <ul style="list-style-type: none"> <li>Forecasted demand by electrification measures (EV, electric heating, data centres and other connection requests) can be found <a href="#">here</a>.</li> <li>A breakdown of existing and forecasted DERs in the City of Toronto by resource type and station found <a href="#">here</a>.</li> </ul> <p>In line with the IESO best practices, the following information is planned to be available in future stages of the IRRP as outlined in the <a href="#">IESO Regional Planning Information and Data Release Guide</a>:</p> <ul style="list-style-type: none"> <li>Hourly profiles of applicable needs to be provided at the next webinar regarding needs on the transmission system.</li> </ul> <p>Lastly, Ontario does not have locational marginal pricing currently. The IESO is undertaking a <a href="#">Market Renewal Program</a> to modernize Ontario's electricity markets to address inefficiencies that will be a building block to embracing the continued transition to new and diverse resources. Visit the IESO's <a href="#">website</a> to learn more.</p> <p>Toronto Hydro response: The scope of the Local Distribution Company's input into the Integrated Regional Resource Plan (IRRP) forecast is a peak demand forecast. As a result, Toronto Hydro has used a methodology that considers peak demand as its own entity. Toronto Hydro does not produce forecasts of load profiles.</p> <p>Concerning climate change, Toronto Hydro agrees that improvements can be made and is working to better incorporate climate change in future forecasts. Toronto Hydro plans to do this by leveraging climate forecasts from external bodies, such as the Climate Atlas of Canada and EPRI's Climate Data Inventory.</p> <p>The Toronto Transit Commission (TTC) Green Bus Program was incorporated based on the</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>information available at the time of producing the IRRP Forecast. The IRRP forecasts assume that the TTC will electrify 190 buses a year until it has electrified 100% of its fleet in 2040.</p> <p>Concerning assumed adoption rates for electrified heating, please see Table 4 in Section 3.2 of the <a href="#">Toronto IRRP Forecasting Methodology</a>. The adoption rate provided for any year is the percentage of total buildings that use electrified heating in that year. The adoption rate accounts for changes in the building stock. Dwellings refer to residential units, as in the 2021 Census.</p> <p>The GDP variable used in the forecast is the annual percentage change in GDP. For years 6 and onwards, the annual percentage change in GDP is forecasted to be constant.</p>                                                                                                                                                                                                                           |
| <p>Publicly share data broken up by customer and end use types, specifically:</p> <ul style="list-style-type: none"> <li>• The Atmospheric Fund requested disaggregate demand forecasts for each sector, current and hourly forecasts, and heating and cooling load profiles.</li> <li>• Cerebral Energy Advisors and Boltzmann Institute requested demand forecast data by building type and end use.</li> <li>• Allan Baker, Ontario Clean Air Alliance, and Pollution Probe requested: total and summer/winter peak demand forecasts for 2023 broken out by customer segment (residential, general service and large users) and end use type (lighting, space heating, water heating, cooling; and electric vehicles) and total and summer/winter peak demand</li> </ul> | <p>The IESO strives to make information available throughout the development of the Integrated Regional Resource Plan (IRRP) to enable meaningful feedback during the process and decisions to be made. Data and information to be made available during IRRP development is outlined in the <a href="#">IESO Regional Planning Information and Data Release Guideline</a>.</p> <p>Generally, the IESO will provide a high-level summary of the load forecast through its first engagement webinar to solicit input, and the detailed methodologies are typically published with the final report. As part of the IRRP for Toronto, the IESO began providing detailed methodology and load forecasts early in the process to enable more purposeful community and stakeholder participation and input such as the document posted. For more information, please visit the IESO <a href="#">website</a> for details around Forecast Methodology and Data Tables.</p> <p>At this stage, the following information is available:</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <p>forecasts for each of the forecast scenarios for key years (2025, 2030, 2035, 2040 and 2042) broken out by customer segment and end use type.</p> <ul style="list-style-type: none"> <li>• Clean Air Partnership requested more information regarding the load profiles (beyond peak demand).</li> <li>• Pollution Probe requested annual gross and net demand forecasts that include the impacts of Conservation Demand Management frameworks, distributed energy resources and energy efficiency of new loads.</li> </ul> | <ul style="list-style-type: none"> <li>• The breakdown of residential, commercial, and industrial customers by connected kVA in Toronto can be found <a href="#">here</a>.</li> <li>• Forecasted demand savings from conservation and demand management programs and codes and savings can be found in the data tables <a href="#">here</a>.</li> <li>• Summer/winter demand by station and can be found <a href="#">here</a>.</li> </ul> <p>The following information is planned to be available in future stages of the IRRP:</p> <ul style="list-style-type: none"> <li>• Hourly profiles of applicable needs to be provided towards the end of summer.</li> </ul> <p>The Technical Working Group does not currently have information on the demand by building type, end use and heating and cooling load profiles.</p> <p>Toronto Hydro response: Toronto Hydro does not have the requested disaggregated demand forecasts. Toronto Hydro has used a different approach for its forecasting methodology, which considers drivers of demand, rather than customer groups or end uses. Toronto Hydro has provided the IESO with the IRRP Load Forecast Survey - Detailed Breakdown files for each forecast scenario. These files provide the disaggregation of the forecast per the drivers considered in Toronto Hydro's <a href="#">methodology</a>.</p> |
| <p>Ontario Clean Air Alliance, Cerebral Energy Advisors, Boltzmann Institute, Pollution Probe and Allan Baker requested forecast data based on various demand side management and supply scenarios, specifically:</p> <ul style="list-style-type: none"> <li>• Incremental demand reductions that could be obtained in key years: by the industrial, commercial and institutional sectors through</li> </ul>                                                                                                                   | <p>The IESO strives to make information available throughout the development of the Integrated Regional Resource Plan (IRRP) to enable meaningful feedback during the process and decisions to be made. Data and information to be made available during IRRP development is outlined in the <a href="#">IESO Regional Planning Information and Data Release Guideline</a>.</p> <p>Generally, the IESO will provide a high-level summary of the load forecast through its first</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p>incentives for demand reduction, and by the residential sector through incentives for demand reduction using the Peak Perks program for HVAC and water heater end uses.</p> <ul style="list-style-type: none"> <li>• Electricity savings achievable in key years, if the IESO/Toronto Hydro paid for all electricity savings achievable at a cost lesser or equal to that of electricity from a new nuclear reactor.</li> <li>• Cost of supplying the City with: 5 TWh/year until 2035 of offshore wind power, 2.5 TWh/year until 2030 of solar energy from residential rooftops, and 2.5 TWh/year of solar energy from rooftops and municipal and commercial and parking lots.</li> <li>• Toronto’s total storage capacity of EV batteries including fleet vehicles (in MW &amp; MWh) for key years.</li> </ul> | <p>engagement webinar to solicit input, and the detailed methodologies are typically published with the final report. As part of the IRRP for Toronto, the IESO began providing detailed methodology and load forecasts early in the process to enable more purposeful community and stakeholder participation and input such as the document posted. For more information, please visit the IESO <a href="#">website</a> for details around Forecast Methodology and Data Tables.</p> <p>At this stage, the following information is available:</p> <ul style="list-style-type: none"> <li>• Forecasted demand savings from conservation and demand management programs, codes and standards and savings can be found in the data tables <a href="#">here</a>.</li> </ul> <p>The following information is planned to be available in future stages of the IRRP as outlined in the <a href="#">IESO Regional Planning Information and Data Release Guide</a>:</p> <ul style="list-style-type: none"> <li>• The impact of incremental conservation and demand side management will be determined through the options analysis phase.</li> </ul> <p>The Technical Working Group does not have information on the cost of supplying the City solely with wind and/or solar, electricity savings at the cost of a new nuclear reactor and Toronto’s total storage capacity for EVs, as this information is out of scope for the demand forecast development and regional planning process in general. As part of later stages of the IRRP process and informed through engagement, the Technical Working Group will screen, identify and develop high level options to meet defined needs. Both wires and non-wires options will be considered and examined based on technical feasibility to meet needs within the magnitude and timing solutions required, and cost effectiveness.</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p>Consider additional variables in the forecast development, specifically:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>As a first step, the Technical Working Group has developed electricity demand forecast scenarios based on known drivers, including local economic development, growth plans and community energy and electrification plans. These known drivers have been identified through discussions with City staff and examination of applicable local plans such as Secondary Plans and Climate Change Action Plans. The forecasts have been shared with the city as well as publicly to solicit feedback and consider input for the development of the plan. These scenarios form the basis of the regional electricity planning process in identifying how much power is needed in the region over the next 20 years based on the inputs provided on current, planned and potential growth.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>• 2030 Districts Network recommended that community input, storage and transactive energy should be considered in the scenarios.</li> <li>• Cerebral Energy Advisors shared that providing costs for consumers associated with each scenario is important.</li> <li>• David Smith, City of Toronto and University of Toronto flagged the importance of temperature trends. It was suggested that future temperature assumptions include the impact of climate change in more detail, and recommended the use of additional analysis techniques including applying current trends to future forecasts, evaluating trends in resource and generation, and downscaling global circulation models/climate simulations for a more localized approach.</li> <li>• Environmental Defence asked for more information on consideration of distributed energy resources, consideration and demand management, renewable resources, battery storage, and cost of refurbishing GTA nuclear and Small Modular Reactor development.</li> <li>• Toronto East End Climate Collective asked to consider the influence of new technology and loss of urban tree canopy on demand and potential of thermal storage and</li> </ul> | <p>Once these forecasts are finalized, technical studies will be undertaken to identify specific needs arising on the system, including location, magnitude and timing. As such, the Technical Working Group has not yet considered any options to address needs, including preliminary findings from Hydro One’s <a href="#">Needs Assessment Report</a>. The IESO acknowledges the importance of assessing both wire and non-wires solutions to ensure a reliable, affordable and clean electricity system. Both wires and non-wires options will be considered in addressing the needs once they are identified. Generally, options are compared against each other, taking into consideration factors such as cost effectiveness, technical feasibility of the solution, and other qualitative benefits. The IESO will present needs and options in upcoming engagement sessions and encourages all interested parties to attend. The Technical Working Group will also take into consideration community support expressed for non-wire solutions as part of the options evaluation process.</p> <p>Further, the IESO is also conducting a local achievable potential study in Toronto to determine the amount of conservation and demand</p> |

| Feedback                                      | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>networks to reduce winter peak demand.</p> | <p>management and behind-the-meter distributed energy resource opportunities, including thermal storage and networks, available to address local needs. Results from the study are expected in early 2025, and the results will be considered as part of the regional planning process.</p> <p>Lastly, the IESO acknowledges the importance of accounting for temperature trends in the forecasting development. In the near term, the approach will focus on exploring the risks associated with increased temperatures and what that would mean from an infrastructure perspective. In the long term, the plan will focus on building flexibility and ensuring sufficient conditions have been explored to ensure an affordable and reliable system. For more details about extreme weather methodology please read more <a href="#">here</a>.</p> <p>The Technical Working Group does not have information on the loss of urban tree canopy and cost of refurbishing GTA nuclear and SMR development, as these requests are out of scope for regional planning work. For more details about resource costs and trends, please review the IESO's <a href="#">Annual Planning Outlook: Resource Costs and Trends</a> document that provides current and forecasted capital costs of wind, solar and battery storage resources and the operational considerations associated with these resources in the context of a supply mix that will continue to evolve as a result of decarbonization and electrification.</p> <p>Toronto Hydro response: For normal weather conditions, a temperature of 30.0°C was used in the summer, and -17.0°C was used in the winter. The temperature used is an hourly temperature, rather than a daily mean, and represents the normal temperature during the hour of annual system peak. The normal temperatures were produced from a 17-year median based on historical peaks. 17 years was chosen because this</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                               | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>is the limit of Toronto Hydro's peak history records (beginning with 2006). Extreme weather methodology is completed and applied by the IESO.</p> <p>Toronto Hydro agrees that improvements can be made and is working to better incorporate climate change in future forecasts. Toronto Hydro plans to do this by leveraging climate forecasts from external bodies, such as the Climate Atlas of Canada and EPRI's Climate Data Inventory.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>City of Toronto, Clean Air Partnership, David Smith, Environmental Defence, Enwave Energy Corporation, NRStor, and Ontario Clean Air Alliance, Pollution Probe, shared that alignment with TransformTO, the City of Toronto's Plans regarding Net Zero by 2040, consider reduction of emissions, and Toronto's Green Standards are important and should be clearly demonstrated how plans are being considered.</p> | <p>Today, Ontario's electricity system is entering a period of need and is already more than 90 per cent emissions-free, with most of its electricity coming from non-emitting resources, like hydro and nuclear. Bridging the work of today with the needs of a decarbonized world and to meet the growing electricity needs will be challenging and complex. A collaborative approach across all sectors of the economy will be necessary to decarbonize Ontario's electricity system while maintaining reliability and affordability. As Ontario's electricity system operator and planner, the IESO has a particular vantage point and responsibilities in assessing the adequacy of our resources and the reliability of our supply mix.</p> <p>To get to net zero while simultaneously increasing the size of our electricity system requires an orderly transition. Because no single resource can meet all of the system's needs at all times, maintaining a diverse supply mix is an effective way to ensure the ongoing reliability of Ontario's electricity system. In the short term, natural gas plays a critical transitional role in our system. Natural gas provides flexibility and certainty to quickly respond to changes in demand and system conditions. Long-term reliance on gas will depend on government direction from the Provincial and Federal level.</p> |

| Feedback | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|          | <p>With that being said, as part of the regional planning process for Toronto, decarbonization is being contemplated at multiple levels:</p> <ul style="list-style-type: none"> <li>• Forecast scenarios have been developed to consider pockets of growth, alignment with TransformTO, and shift to electrification</li> <li>• Electricity needs across the city will be determined based on the forecast scenarios, including through scenarios that focus on decarbonization. These scenarios will address the City of Toronto’s request to reduce reliance on Portlands Energy Centre by assessing a plan for a future without Portlands Energy Centre and understanding the options and timing to ensure a reliable and affordable supply of power.</li> <li>• Recommended solutions, such as wire and non-wire options, will be assessed to ensure a reliable supply of electricity over the next 20 years, including to address the impacts of reducing reliance over the medium to long term on Portlands Energy Centre.</li> </ul> <p>As the reduction of reliance on Portlands Energy Centre is being contemplated as part of the regional planning process work, the IESO recently initiated the South and Central Bulk study, a broader plan that will ensure our electricity system is prepared to continue to provide reliable, affordable, and clean electricity across the province. Specifically, in the Toronto area, this bulk plan will assess electricity needs and options to enable economic development and decrease reliance on local natural gas-fired generation from Portlands Energy Centre. For more details, please visit our <a href="#">website</a>.</p> <p>Toronto Hydro response: Concerning assumed adoption rates for electrified heating, please see Table 4 in Section 3.2 of the <a href="#">Toronto IRRP Forecasting Methodology</a>. Under the High</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <p>Forecast accuracy was raised by a number of parties, specifically:</p> <ul style="list-style-type: none"> <li>• The Atmospheric Fund shared that the methodology used for EV adoption rates may underestimate uptake.</li> <li>• Boltzmann Institute shared that the high electrification scenario is underestimated due to assumptions made around heating and requested a re-assessment of the scenario given their concern regarding the assumptions used to develop the forecasts, such as heat pump use, and the variability of achieving emissions reduction through electrification, which is depended on variables such as policy direction.</li> <li>• Cerebral Energy Advisors warned that forecasts are overly optimistic since there are various factors that could impact actual demand, including policy direction, confounding variables, and adoption of electrification initiatives.</li> <li>• City of Toronto shared that the methodology appeared to not properly account for the future implementation of Emission Performance Standards, which can cause inconsistencies between demand projections developed by the IESO and projections in the City</li> </ul> | <p>Thank you for sharing considerations around forecast accuracy. The Technical Working Group has developed two forecast scenarios to assess the region’s needs. These two scenarios allow for rigorous technical studies to be conducted to determine needs that would arise on the system in each case, develop a range of options, and prepare recommendations as part of the final plan to ensure a reliable and adequate supply of electricity to the region. By planning against two scenarios, this allows for further action in the future if, and when, higher growth materializes. This will enable demand growth in a timely manner while minimizing ratepayer risks associated with overbuilding or building too early.</p> <p>For additional context, EV adoption rates have been developed with input from the City of Toronto’s Electric Vehicle strategy. Space and water heating adoption rates are in line with the City of Toronto’s TransformTO Net Zero Strategy.</p> <p><b>Toronto Hydro response:</b> Please note that Canada’s Electric Vehicle Availability Standard was not published at the time of producing the forecast. However, these sales targets were included in the High Electrification Scenario, which used Canada’s 2030 Emissions Reduction Plan as an input.</p> <p>Concerning assumed adoption rates for electrified heating, please see Table 4 in Section 3.2 of the <a href="#">Toronto IRRP Forecasting Methodology</a>. Under the High Electrification Scenario, 25% of Commercial and Industrial gross floor area is forecasted to use electrified heating by 2030, and</p> |

| Feedback                                                                                                                                                                                                                              | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>of Toronto's Net Zero Existing Building strategy.</p> <ul style="list-style-type: none"> <li>• Toronto East End Climate Collective asked for transparency on the accuracy of previous forecasts for the Toronto Region.</li> </ul> | <p>100% of all buildings are forecasted to use electrified heating by 2040. This aligns with targets for electrified heating in the TransformTO Net Zero Strategy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Enbridge Gas Inc. recommended to develop a diversified scenario to include gas. Enbridge Gas Inc. encouraged a coordinated and diversified approach to energy system planning in the Toronto region.</p>                           | <p>The Technical Working Group acknowledges the benefits of coordination between electricity planning and gas planning processes. The Technical Working Group intends to engage with and collect data from Enbridge to determine how their measures can address needs identified in the demand forecasts. The Technical Working Group looks forward to working with Enbridge throughout the Toronto regional electricity planning process and welcomes input on the options available to meet needs.</p> <p>The Electrification and Energy Transition Panel's recently released <a href="#">final report</a>, consists of recommendations to help Ontario prepare for electrification and the energy transition. One of the panel's principles are to ensure transparency and effective coordination in energy planning to facilitate the fuel switching, system optimization and enhanced levels of energy efficiency required by the clean energy economy. The IESO looks forward to working with the Ministry of Energy, Ontario Energy Board (OEB), Local Distribution Companies, municipalities and gas utilities to develop this framework.</p> |

## Scope and Planning Approach

Feedback submissions requested expanding priorities to include emissions reductions and the further exploration of non-wire alternatives. Certain organizations asked for transparency during critical points in the decision-making and feedback processes. Submissions indicated a desire for the development of a coordinated planning approach that follows the OEB's planning guidelines, that will ensure system resiliency and create a balance between system reliability, affordability, and sustainability. Feedback received suggested that increased openness about the energy transition in

the IRRP will enable public understanding of milestones and system resilience throughout the IRRP process. The feedback on these topics is summarized below.

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p>Explore non-wire alternatives, to meet the City of Toronto's growing electricity needs, including:</p> <ul style="list-style-type: none"> <li>• 2030 Districts Network suggested additional consideration of innovative initiatives.</li> <li>• The Atmospheric Fund stressed the importance of full and transparent consideration of non-wires solutions including conservation and demand management, and distributed generation, to meet needs and to protect ratepayers from rising electricity bills.</li> <li>• Boltzmann Institute recommended demand reduction solutions such as energy storage and thermal networks as well as non-emitting generation alternatives that can replace gas-fired generators.</li> <li>• Ontario Clean Air Alliance, Environmental Defence and Allan Baker recommended non-emitting, renewable, and reliable energy sources.</li> <li>• Clean Air Partnership expressed that electricity planning appears to favour large scale generation transmission projects; however, energy efficiency, distributed resources, local generation, storage, and conservation should be considered. This includes modelling a virtual net metering policy.</li> </ul> | <p>To ensure that Ontario's electricity system remains reliable, affordable and sustainable, an evaluation of different options to meet the needs is a key step. Typically, as part of the regional planning process, once the forecast scenarios and needs have been finalized, the IESO will screen and evaluate wire and non-wire options, such as transmission-connected generation or storage, conservation and demand management (CDM), distributed generation and demand response to meet the needs and consider reliability, cost, technical feasibility, maximizing the use of the existing electricity system (where economic), and community preferences.</p> <p>To further enhance and supplement the regional planning work underway for Toronto, the IESO is also conducting a local achievable potential study for the city to determine feasible distribution system options to meet the needs, including renewable resources, CDM, and local generation, available to address local needs. Results from the study are expected in early 2025 and will be used to assess suitability of options to meet the needs of Toronto. Certain options, such as thermal networks, energy-from-waste systems and district energy, will be considered on a case-by-case basis and dependent on the nature of the needs until the options analysis phase. The IESO welcomes suggestions on sustainable energy system options, and feedback around community preferences around all options. Lastly, offshore wind generation will not be considered since provincial policy has not changed.</p> <p>The IESO will present needs and options in upcoming engagement sessions and encourages all interested parties to attend. As planning work advances, the IESO welcomes views and</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <ul style="list-style-type: none"> <li>• Conscious Capital World Inc. shared that direct current charging networks should be considered and deployed to mitigate infrastructure investment and unlocking grid capacity.</li> <li>• EverGreen Energy Corp recommended the consideration of Energy-from-Waste systems and other renewables.</li> <li>• Enwave Energy Corporation encouraged the consideration of district energy.</li> <li>• NRStor highlighted the importance of exploring energy storage and DERs.</li> <li>• Pollution Probe flagged the importance of distributed energy to meet future needs to align with local community energy planning and TransformTO.</li> </ul> | <p>preferences of communities and stakeholders, which will be considered in the development of the plan.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p>Provide transparent information during the alternatives and recommendations milestones, specifically:</p> <ul style="list-style-type: none"> <li>• Atura Power shared the importance of providing transparent information, including consideration of the challenges with developing battery energy storage systems in dense urban environments.</li> <li>• The Atmospheric Fund and Environmental Defence encouraged the consideration of costs and feasibility of all potential solutions, including non-wire alternatives.</li> <li>• Pollution Probe requested increased transparency about the supply sources outlined in the 20-year forecast so that changes can be</li> </ul>  | <p>The IESO is committed to an open and transparent planning process. Options analysis will be conducted once needs have been identified. Wires and non-wires options will be considered when addressing the needs found in this IRRP.</p> <p>For more details regarding the analysis of alternatives, the IESO has developed <a href="#">a guide to the current general approach for evaluating non-wires alternatives</a> (NWAs) during IRRPs. This guide summarizes various recent improvements made to better consider NWAs when developing an IRRP, including the process flow diagram, screening mechanism, hourly needs characterization, development of options, and economic evaluation methodology. Interested parties are encouraged to refer to this guide to better understand what key activities to expect during the IRRP. If the approach and</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                   | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p>easily shown, and what solutions, such as storage, are being considered.</p> <ul style="list-style-type: none"> <li>• A David Smith requested that issues and risks related to energy planning initiatives and potential alternatives be clearly communicated with the public.</li> </ul>                                               | <p>methodologies used to assess NWAs evolve, the IESO will update the guide.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>Pollution Probe and Mississaugas of Scugog Island First Nation recommended that the IRRP include a roadmap for the energy transition, and to ensure that the OEB's RPPAG recommendations are implemented in this process to include greater transparency, enhanced coordination, education, and analysis into the planning process.</p> | <p>The IESO's engagement to date with communities and stakeholders in the region has been directly informed by the OEB's Regional Planning Process Advisory Group's work, including making data and methodology available much earlier in the planning process.</p> <p>Once the two forecast scenarios are finalized, needs will be identified based on technical studies. Engagement with communities and stakeholders in the region will continue into the needs and options identification stages. Local input on the nature of identified needs and range of potential options will also be critical to informing next steps. Later into the process as potential needs are evaluated and recommendations developed as part of the final regional plan, considerations on implementation will be important inputs.</p> <p>Today, Ontario's electricity system is entering a period of need and is already more than 90 per cent emissions-free, with most of its electricity coming from low-emitting resources, like hydro and nuclear. To get to net zero while simultaneously increasing the size of our electricity system will be complex and challenging. Because no single resource can meet all of the system's needs at all times, maintaining a diverse supply mix is an effective way to ensure the ongoing reliability of Ontario's electricity system.</p> |

| Feedback | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|          | <p>As part of the regional planning process for Toronto, decarbonization is being contemplated at multiple levels:</p> <ul style="list-style-type: none"> <li>• Forecast scenarios have been developed to consider pockets of growth, alignment with TransformTO, and shift to electrification.</li> <li>• Electricity needs across the city will be determined based on the forecast scenarios, including through scenarios that focus on decarbonization. These scenarios will address the City of Toronto’s request to reduce reliance on Portlands Energy Centre by assessing a plan for a future without Portlands Energy Centre and understanding the options and timing to ensure a reliable and affordable supply of power.</li> <li>• Recommended solutions, such as wire and non-wire options, will be assessed to ensure a reliable supply of electricity over the next 20 years, including to address the impacts of reducing reliance over the medium to long term on Portlands Energy Centre.</li> </ul> <p>As the reduction of reliance on Portlands Energy Centre is being contemplated as part of the regional planning process work, the IESO recently initiated the South and Central Bulk study, a broader plan that will ensure our electricity system is prepared to continue to provide reliable, affordable and clean electricity across the province. Specifically, in the Toronto area, this bulk plan will assess electricity needs and options to enable economic development and decrease reliance on local natural gas-fired generation from Portlands Energy Centre through the South and Central Bulk Study. For more details, please visit IESO’s <a href="#">website</a> for more details.</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                    | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <p>Atura Power and Conscious Capital World Inc. reiterated the importance to balance sustainability, reliability and affordability, including the local economic impact of potential solutions.</p> <p>Cerebral Energy Advisors requested clarification on cost allocation for grid investments should forecasted load not materialize.</p> | <p>The IRRP provides recommendations to address the electricity needs of Toronto over the next 20 years. As a first step, the Technical Working Group has developed two forecast scenarios to help determine the region’s needs. These two scenarios allow for rigorous technical studies to be conducted to determine needs that would arise on the system in each case, develop a range of options, and prepare recommendations as part of the final plan to ensure a reliable and adequate supply of electricity to the region. By planning against two scenarios, this allows further actions in the future if, and when, higher growth materializes. This will enable demand growth in a timely manner while minimizing ratepayer risks associated with overbuilding or building too early. More information on options development can be found <a href="#">here</a>.</p> <p>This approach ensures that the IRRP provides clear direction on investments needed in the near and medium term, while retaining flexibility over the long term, as electrification, energy efficiency, and development plans evolve to ensure a reliable, affordable and sustainable electricity system.</p> <p>In Ontario, the Ontario Energy Board (OEB) is responsible for protecting consumers and making decisions that serve the public interest. The OEB would review and approve rate applications and electricity infrastructure based on key criteria, including whether project need has materialized. Cost responsibilities are outlined in the <a href="#">distribution</a> and <a href="#">transmission</a> system codes found on the OEB’s website.</p> |
| <p>Enbridge Gas Inc. requested more details on how the regional electricity planning process addresses and ensures system resiliency of the electricity grid in the Toronto Region.</p>                                                                                                                                                     | <p>Regional system planning ensures a reliable supply of electricity to Ontario's 21 electricity planning regions. This process looks at the unique needs of each region, and considers conservation, generation, transmission and distribution, and innovative resources to meet these needs.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Feedback | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|          | <p>Through this process, recommendations on how best to meet reliability needs after considering all these factors are developed. Regional planning is a continual process with plans developed for a 20-year outlook but evaluated every five years at minimum.</p> <p>Throughout the process the IESO works with local distribution companies that serve the region and the transmitter to ensure regional issues and requirements are effectively integrated into the electricity planning processes.</p> |

## Planned Engagement

Feedback received indicated that the Technical Working Group and the number of parties included in the planning process could be expanded. Submissions emphasized enhancing collaboration with Indigenous communities, stakeholders, and sector participants to improve planning outcomes. Certain feedback noted that electricity planning should guide public awareness of climate change and be explicit in how the IRRP can meet the City's goals. Submissions expressed general support for the engagement plan, with some feedback that more profound conversations could be enabled. The feedback on these topics is summarized below.

| Feedback                                                                                                                                                                                                                                                                                                                                            | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <p>The Mississaugas of Scugog Island First Nations requested that their community be recognized in the list of communities potentially impacted and recommended that Alectra Utilities Corporation and Elexicon Energy Inc. be added to the Technical Working Group, since they could be directly impacted by and may have potential solutions.</p> | <p>Thank you for bringing your desire to be recognized as a potentially impacted community. The IESO has updated materials posted on the <a href="#">dedicated engagement webpage</a> to reflect this request for the regional planning process in Toronto and will ensure to continue to engage the Mississaugas of Scugog Island First Nations.</p> <p>The Technical Working Group membership is determined as per the OEB established regional planning process, and includes the transmitter, the IESO, and LDC(s) that have customers in the electrical area. Given this, Alectra Utilities and Elexicon Energy do not form part of the Toronto IRRP Technical Working Group as their loads lie outside the City of Toronto. These LDCs will form</p> |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>part of other regional plans in the GTA. Details of those regional plans will be communicated on our website as they kick off.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Enhancing collaboration and engagement of Indigenous communities and stakeholders through the planning process will produce better outcomes, specifically:</p> <ul style="list-style-type: none"> <li>• Clean Air Partnership, Pollution Probe, Mississaugas of Scugog Island First Nations and EverGreen Energy Corp shared the importance of coordination and collaboration between multiple stakeholders, such as municipalities, and utilities, to proactively plan to meet Toronto's growing needs and showing how participant feedback is incorporated and considered in the planning approach.</li> <li>• Conscious Capital World Inc. suggested that continued feedback loops should be established.</li> <li>• NRStor encouraged the continued inclusion of and collaboration with Indigenous communities through the development of the IRRP.</li> <li>• Toronto East End Climate Collective suggested that the IESO should clarify the stakeholders engaged including consideration of International Association of Public Participation.</li> </ul> | <p>Thank you for the feedback. The IESO is committed to helping to ensure that interested parties are kept informed and are provided with opportunities for purposeful engagement to contribute to electricity planning initiatives such as this one. We are continuously striving to enhance our engagement practices to increase opportunities for input. We will endeavour to incorporate this input into future engagements.</p> <p>The IESO regularly communicates with communities, regional stakeholders and interested parties through various vehicles including emails, IESO weekly Bulletin, public webinars, and targeted outreach meetings to help these groups stay up to date on the IESO's work and opportunities for engagement participation. We encourage any interested parties to visit the IESO website to <a href="#">subscribe</a> to receive updates.</p> <p>Throughout the IRRP process, we will invite interested parties to a series of webinars and targeted outreach activities to seek input on the regional demand forecast, electricity needs, options analysis, and recommendations including the evaluation of technically feasible and cost-effective solutions. Through these engagement and outreach activities, communities will have the opportunity to provide feedback and discuss the potential solutions identified.</p> |
| <p>2030 Districts Network shared that improving customer awareness of climate change should be considered as part of electricity planning.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>The IESO acknowledges that increasing awareness and understanding for the regional planning process is very important. Regional system planning ensures a reliable supply of electricity to Ontario's 21 electricity planning regions. Informed by</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Feedback                                                                                                                                                                                                                                         | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                                                                                                                                                                                                  | <p>feedback, the regional plan for Toronto will consider pockets of growth, alignment with TransformTO and the reduction of reliance on Portlands Energy Center, in order to outline electricity needs and recommended solutions, such as wire and non-wire options, to ensure a reliable supply of electricity over the next 20 years. Providing opportunities for input in the regional planning process enables the views and preferences of communities to be considered in the development of the plan and helps lay the foundation for successful implementation. However, beyond considering the impact of weather as part of plan development, increasing customer awareness for climate change is out of scope for the upcoming planning engagements.</p> |
| <p>Environmental Defence shared that IESO feedback form do not create the space for in depth responses.</p>                                                                                                                                      | <p>Thank you for sharing feedback regarding the feedback forms. As part of the IESO's engagements, understanding feedback and insights from participants is important for plan development. The forms are designed to provide opportunities for in-depth responses, under the general comments/feedback section, and to provide clarity and guidance from participants regarding key areas.</p>                                                                                                                                                                                                                                                                                                                                                                    |
| <p>Several parties shared support for the engagement plan.</p>                                                                                                                                                                                   | <p>Thank you for expressing support for the Toronto IRRP Engagement Plan. As the IRRP and engagement progresses the IESO will implement any addition or enhanced opportunities for interested parties to participate and provide their input based on the outcomes of the planning work.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p>Engaging key sector participants can be helpful, specifically:</p> <ul style="list-style-type: none"> <li>• Boltzmann Institute recommended the need to ensure district energy utilities are included in the upcoming engagements.</li> </ul> | <p>Thank you for sharing feedback regarding engaging key sector participants. The IESO regularly communicates with communities, regional stakeholders and interested parties through various vehicles including emails, IESO weekly Bulletin, public webinars, and targeted outreach meetings to help these groups stay up to date on the IESO's work and opportunities for engagement</p>                                                                                                                                                                                                                                                                                                                                                                         |

| Feedback                                                                                                                                                                                                                                                                                                                                                | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <ul style="list-style-type: none"> <li>• Cerebral Energy Advisors suggested that more opportunities should be provided to industry experts to provide feedback and offer balanced viewpoints.</li> <li>• Enwave Energy Corporation recommended engagement with customer/building owners of district energy to better understand their value.</li> </ul> | <p>participation. We encourage any interested parties to visit the IESO website to <a href="#">subscribe</a> to receive updates.</p> <p>Throughout the IRRP process, the IESO invites any interested parties to a series of webinars and targeted outreach activities to seek input on the regional demand forecast, electricity needs, options analysis, and recommendations including the evaluation of technically feasible and cost-effective solutions. Through these engagement and outreach activities, participants will have the opportunity to provide feedback and discuss the potential solutions identified.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <p>Enbridge Gas Inc. and Enwave Energy Corporation expressed interest in collaboratively working with the Technical Working Group.</p>                                                                                                                                                                                                                  | <p>The Technical Working Group recognizes the potential benefits of coordination between electricity planning, gas planning processes, and district energy. The IESO welcomes the opportunity to work with Enbridge and Enwave on options to address the needs identified in this plan and as part of the public engagement process. As the work progresses, the IESO will continue to host opportunities to share more details, including additional webinars, and opportunities for feedback.</p> <p>As noted earlier, the Electrification and Energy Transition Panel's recently released consists of recommendations to help Ontario prepare for electrification and the energy transition. One of the panel's principles is to ensure transparency and effective coordination in energy planning to facilitate the fuel switching, system optimization and enhanced levels of energy efficiency required by the clean energy economy. The IESO is looking forward to working with the Ministry of Energy, OEB local distribution companies, municipalities and gas utilities to develop this framework.</p> |

## General Comments/Feedback

Feedback received indicated concern that current system trends create potential health risks and are incompatible with City of Toronto goals. Participants requested information on how outages and capacity shortfalls will be addressed. The feedback on these topics is summarized below.

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p>Toronto East End Climate Collective and Environmental Defence noted the increased costs associated with the continued use and the expansion of Portlands Energy Centre, and that Portlands Energy Centre is not compatible with existing City of Toronto decarbonization initiatives.</p> <p>EverGreen Energy Corp and Environmental Defence noted that landfills create unsafe energy and that there are alternatives, and that there are increased public health and food security risks with the continued use and the expansion of Portlands Energy Centre, and that Portlands Energy Centre is not compatible with existing City of Toronto development plans.</p> | <p>The Technical Working Group is committed to studying the impacts of reducing reliance on Portlands Energy Centre in this IRRP, for more details please see response in the above section. As planning work advances through the options analysis phase, more details will be shared.</p> <p>In parallel, the IESO has also initiated a new South and Central Bulk Study to review broader provincial system needs to support future generation connections and demand growth, address existing transmission bottlenecks, enable a decarbonized power system, and consider opportunities to preserve new or expanded corridors for future transmission development. Bulk system planning ensures sufficient electricity can be delivered from across the province to a specific area, while regional planning ensures power is delivered within a specific area. Specifically, in the Toronto area, electricity needs at the bulk system level will be assessed to enable economic development and decrease reliance on local natural gas-fired generation from Portlands Energy Centre. To learn more, please visit the <a href="#">engagement page</a>.</p> |
| <p>David Smith requested more details around the IESO's emergency planning for outages.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>The IESO's <a href="#">Market Manual 7.3</a> contains a guide to outage management for facilities and equipment connected to the IESO-controlled grid, or which may affect the operation of the IESO-controlled grid.</p> <p>This includes outages to transmission facilities defined as constituting elements of the IESO-controlled grid under the market rules and</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Feedback                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | IESO Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>various operating agreements between the IESO and market participants.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>More details around how the future capacity shortfalls will be addressed, specifically:</p> <ul style="list-style-type: none"> <li>• David Smith shared that the IESO should consider impact of capacity planning to meet needs.</li> <li>• Enbridge Gas Inc. suggested IESO should share more details about future capacity shortfalls, whether they are anticipated, and how they will be addressed.</li> <li>• The Atmospheric Fund shared concerns regarding how the energy gap identified in the Annual Planning Outlook is being considered for the regional planning work in Toronto.</li> <li>• NRStor encourages a broader approach to modeling system impacts and considering storage projects as flexible grid management assets.</li> </ul> | <p>The Annual Planning Outlook (<a href="#">APO</a>) develops a 20-year forecast for the entire province, based on many factors, including but not limited to the state of the economy, population, demographics, technology, energy prices, input fuel choices, equipment-purchasing decisions, consumer behaviour, government policy, and CDM. Toronto's final regional forecasts are considered in the development of the APO and in turn, the APO informs the planned actions to address provincial needs, translating planning and operational information into a series of acquisition requirements. It signals anticipated targets and acquisition mechanisms to secure services to supply the province's needs over a variety of time frames. The IESO will continue to ensure that coordination exists between the APO, bulk system planning, and the various regional plans to the greatest extent possible.</p> <p>As part of the IRRP, the IESO is committed to publishing the needs found at the regional planning level. This will include publishing of energy unserved profiles which contain both peak and energy requirements for each of the needs.</p> |