December 13, 2024

Ministry of Energy and Electrification
77 Grenville Street, 5th floor
Toronto, ON M7A 2C1

RE: Submissions on the Integrated Energy Resource Plan, ERO Number – 019-9285

The Electricity Distributors Association (EDA) represents Ontario's local hydro utilities, the part of our electricity system closest to customers. Publicly and privately owned utilities, otherwise known as local distribution companies (LDCs), deliver electricity to residential, commercial, industrial, and institutional customers—powering every community in the province. The sector owns more than $30 billion in electricity system infrastructure and invests more than $2.5 billion annually in the electricity grid—that is the Power of Local Hydro.

We appreciate the opportunity to provide input to the Ministry of Energy and Electrification (Ministry) on its proposal to develop Ontario's first Integrated Energy Resource Plan and its vision as outlined in the vision paper *Ontario's Affordable Energy Future: The Pressing Case for More Power* (Proposal).

On October 22, 2024, through a posting on the Environmental Registry of Ontario, the Ministry sought feedback on 20 guiding questions[1] about its Proposal. The Ministry grouped its questions into three themes: Planning for Growth, Affordability and Reliability and Becoming an Energy Superpower. On November 12 and 13, 2024, the Ministry held a focused consultation session with LDCs on grid modernization, distributed energy resources (DERs), net metering and support for high-growth areas.

As noted in our submission on Bill 214 amendments, "We welcome the potential for a new framework for IERP, and proposed amendments to the *Electricity Act*, *1998,* that would consider all forms of energy, including electricity, energy efficiency, coordinating all energy resources, to enable affordable energy." As supported in our vision paper released in April 2024, "Solving Grid Lock: Our vision for a customer-centric energy transition," we believe that establishing formal methods for defining and incorporating new and existing grid modernization capabilities into integrated planning processes can balance priorities across several objectives in the energy network, primarily enhancing grid functionalities, system availability, through management of DER enablement. Ontario's LDCs are ready to lead the advancement of the clean energy economy by championing customer electrification and the widespread adoption of clean energy solutions."

Our responses to the Ministry's guiding questions are provided below, and they reflect questions contained in the ERO posting as well as the technical briefing the Ministry provided to our members. Only questions for which a response is given are included.

[1] The questions were not numbered and the numbering in the submission has been assigned by EDA staff.

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Question 1: What policy options and actions should the government consider in the integrated energy resource plan to achieve Ontario's vision for meeting growing energy needs, keeping energy affordable and reliable, ensuring customer choice and positioning us to be an energy superpower?

EDA Comments: In its vision paper, the government recognizes the need "to work with the OEB to provide greater clarity and predictability to LDCs so that they can modernize their infrastructure to provide the energy and services that ratepayers need into the future." We commend the government for recognizing the need to provide clarity on grid modernization and related investments.

The EDA's vision paper, Solving Grid Lock: Our vision for a customer-centric energy transition, establishes the need for additional clarity on grid modernization and describes the policy and regulatory enablers needed to modernize the distribution system. (Later in this submission, we list those policy and regulatory enablers.) We recommend that the government establish a clear and shared definition of electrification and grid modernization as a first step, outlining the desired outcomes and assigning responsibilities for planning and investments. This foundational step will provide much-needed certainty to LDCs and other stakeholders, enabling them to align their efforts with provincial objectives.

We recommend a time-limited, collaborative exercise involving LDCs, the IESO, customers, and other relevant parties to develop this definition and prioritize grid modernization capabilities. This process should draw on existing frameworks, such as Ontario's 2010 Smart Grid Directive and the US Department of Energy's work on grid modernization.

In addition to establishing a clear vision, the government should provide firm policy direction and support for foundational grid modernization investments, empowering LDCs to take on new roles in grid management, supporting customer adoption of innovative technologies and clarifying its role. Clear direction from the Ministry to the OEB and the IESO regarding these foundational investments will reduce uncertainty for LDCs and enable timely action. Moreover, the government should consider providing sustained funding or rate-based eligibility for early adopters of successful grid modernization technologies to incent broader adoption.

Lastly, providing appropriate funding to LDCs for investments is critical for the successful transition, and changes to the traditional rate funding approach and new funding approaches may need to be considered.

Question 2: Building on the recommendations of the EETP's final report, what actions should be prioritized to enhance planning across natural gas, electricity, and other fuels?

EDA Comments: We support integrated planning and recommend that the government prioritize actions that promote coordination across sectors and levels and empower local entities to participate in planning and decision-making. An essential action should be developing a formal and transparent coordination framework that outlines the scope and objectives for enhanced planning at the bulk, regional, and distribution levels. This will help ensure that planning for electricity and natural gas systems is aligned and that the impact of fuel switching on infrastructure needs is adequately considered.

Question 3: What policy guidance should the government provide to the Ontario Energy Board (OEB) with respect to the long-term role of natural gas in Ontario's economy and opportunities for low-carbon alternatives in the gas system?

EDA Comments: We commend the government for adopting an integrated approach to energy planning. As noted in our submission on Bill 214, "The government's recently released energy vision is a pivotal first step, and we commend the government on combining energy planning into one plan, which will give the industry stability and predictability from a policy and planning standpoint and will be required for an orderly transition."

Question 4: What types of technical information and forecasts would best support sector participants and energy consumers as the system is built out for growth and the economy increasingly electrifies?

EDA Comments: To ensure that the system expands efficiently, LDCs would benefit from enhanced forecasting from the IESO and municipalities.

Question 5: What actions should the government consider to accelerate grid connections? How can provincial planning processes be enhanced to support high-growth regions to ensure greater coordination between energy resources, and better integrate municipal, distributor and regional planning processes?

EDA Comments: On November 1, 2024, following a series of engagements with member LDCs, we issued 21 recommendations to the government that, if adopted, would allow LDCs to better facilitate last-mile grid connections for housing developments and large commercial and industrial customers. We recommend the government shift from a reactive approach to a proactive strategy that anticipates future electricity needs and invests in grid infrastructure accordingly. In this regard, we support the OEB's recommendations in the *Housing Connections Report*. As noted in our submissions on the amendments outlined in Bill 214, "We are supportive of the proposed legislative amendments that would provide the Minister of Energy and Electrification with the regulation-making authority to change how costs are allocated and recovered, respecting distribution and transmission, assuming the industry is allowed ample opportunity for input into the development of the regulations.[2] We also provided feedback on the proposed regulation (ERO No. 019-9300) that allows the government to modify cost responsibilities for certain electricity system connection infrastructure in high-growth areas[3]. These measures, combined, will streamline connections to high-growth areas and facilitate greenfield projects.

We also note that limited transmission and distribution capacity is a significant issue, especially for LDCs in constrained areas like southwestern Ontario and parts of northern Ontario, particularly those utilities experiencing new mega load requests, such as data centres. Some challenges related to transmission capacity stem from inaccurate forecasting, delays in building transmission lines, and supply chain issues.

To address these transmission capacity constraints, we recommend streamlining environmental approvals, improving regulatory timelines, and establishing a working group consisting of IESO, Hydro One, and LDCs to find collaborative solutions. For distribution capacity issues, we recommend the government consider actions such as pre-approving expansion-related grid investments.

We believe the provincial planning process should be enhanced to ensure greater coordination among municipal, distributor, and regional planning processes. We recommend that municipalities receive clear guidelines on incorporating municipal energy plans into broader provincial planning and develop a

[2] EDA Submission on Bill 214

[3] EDA Submission on the Proposal to create a regulation under the Ontario Energy Board Act, 1998 to change cost responsibility rules for certain electricity system connection infrastructure for high-growth areas where load growth materializing in the future is very likely

centralized platform for sharing relevant data and forecasts with stakeholders, including LDCs. LDCs should also have access to information on long-term demand projections, peak load forecasts, integration of DERs, capacity needs assessments and carbon emission forecasts. We recommend improving the regional planning process with more frequent updates to growth forecasts, particularly in high-growth areas.

We recommend that the government establish a clear definition for high-growth areas and a scoped rate approval process, similar to a hearing in a priority leave to construct application, where issues, such as the need for the facility, are out of scope and not determined in the hearing.

Further, given the need to develop housing and infrastructure quickly, the government should explore mechanisms for the pre-development of infrastructure, especially in greenfield areas. This would reduce barriers to growth and ensure timely access to electricity for new developments. By taking these actions, the government can create a more conducive environment for grid expansion and electricity access, driving economic growth, supporting new housing development, and accelerating the transition to a cleaner, electrified economy.

Question 6: What constitutes grid modernization for local distribution companies, and what falls within the bounds of grid modernization investments (e.g. technological innovation investments, rate basing of investments, regulatory innovation, climate change preparedness)?[4]

EDA Comments: In our view, grid modernization is not an end unto itself. LDC investments in grid enhancement are guided by their objectives and the evolving conditions on the grid to which the LDC must respond. The EDA's vision paper identifies the technology enablers of grid modernization as:

TECHNOLOGY ENABLERS			
Sensors & Monitoring	**Information Technology**	**Operational Technology**	**DERs**
• AMI • Grid Sensors • Advanced SCADA • Modernized Protection Relays	• Advanced Communication Networks • Edge and Cloud Computing • GIS • EMS • DERMS • Cybersecurity Solutions • Artificial Intelligence	• Power Electronics • Smart Inverters • Remote-Controlled Switches • Remote Terminal Units • DMS • ADMS	• Generation • Energy Storage • EVs

Guidehouse Canada's report to NRCan defines grid modernization as "*the process of implementing digital and physical energy infrastructure needed to ensure access to electricity, while cost-effectively supporting aging asset replacement, diversification of generation sources, climate change adaptation and resilience of infrastructure. Other characteristics of a modernized grid are that it: improves security and resiliency, motivates and includes the consumer, providing power quality for 21st century needs, accommodates and optimizes existing and new electricity generation and storage options, enables markets, optimizes assets and operates efficiently*."[5]

Question 7: What types of DERs are customers most likely or most interested in deploying? What are some of the main barriers facing customers and utilities for DER deployment, and how can these be

[4] From November 12 & 13, 2024 LDC-MOEE consultation

[5] Navigating Barriers to Utility Investment in Grid Modernization, p.9

overcome? What DER programs or policies could best extract value for utilities and commercial, industrial, and residential customers? [6] What policy or regulatory changes should government consider to address financial risks and support the adoption of DER in the long-term?

EDA Comments: In Ontario's energy system, various types of DERs are already in operation, such as agricultural, industrial and landfill facilities. According to the IESO, thousands of DERs are currently connected to the province's distribution systems, contributing 3,500 MW to Ontario's overall capacity.

Government policies have largely influenced the increase in DER adoption, mainly through the Feed-in Tariff (FIT) and micro-FIT programs. Other initiatives, such as conservation programs and net metering, have also contributed to this growth. The recent *Smart Renewables and Electrification Pathways Program* from NRCan has generated new interest from proponents. We believe continued government support and financial incentives are essential for large-scale DER adoption across Ontario.

Historically, the DERs installed through earlier programs focused mainly on wind and solar generation. Solar photovoltaics, energy storage, and combined heat and power systems are expected to be Ontario's most promising DER technologies.

Barriers to DER adoption:
LDCs have identified high connection costs, system constraints and complex regulatory and environmental processes as barriers. Regarding high connection costs, Connection Impact Assessments (CIA) can range from $2,000 to $5,000, and connection studies (such as transfer trip studies) can cost as much as $300,000 and are a barrier for small to medium-sized proponents. Regarding connection processes, LDCs noted that proponents find provincial and municipal permitting and environmental processes complex and regulatory approval processes overly lengthy. Regarding system constraints, LDCs note the unavailability of short-circuit capacity, the lack of a framework for assessing hosting capacity needs and a Benefit/Cost Analysis framework for evaluating a broader range of benefits.

Connection studies are necessary to maintain system reliability, and with an increasing number of DERs connecting to the system, they can be complex. We acknowledge the OEB's efforts to streamline DER connection processes and recommend that the government consider financial incentives for proponents to offset necessary connection costs. To further facilitate DER adoption, the government should consider allowing LDCs to own DERs in partnership with customers (community and district energy projects).

Regarding the permitting, environmental and regulatory processes, we acknowledge the government's work to eliminate red tape and support the government's continued priority to streamline processes and reduce the regulatory burden on proponents. The government should also consider providing broad direction to municipal and provincial authorities that identify DER adoption as a government priority and require agencies to simplify DER connection processes and reduce connection timelines.

Question 8: What specific actions could position the integrated energy resource plan to best leverage distributed energy resources (DER) that enhance local and province wide grids to support energy system needs reliably and at the lowest cost?

EDA Comments: Investments in grid enhancements and modernization are vital for LDCs to offer new programs and services while managing the rising demand for electricity from customers and DERs. As customer needs change rapidly, it is essential to reassess the current policy and regulatory framework to streamline processes, prioritize affordability, and ensure transparency for stakeholders.

[6] Nov 12, 2024 MOEE/LDC consultation questions

In Ontario's regulatory landscape, we have identified several key enablers that can be implemented soon, requiring collaboration across the sector. These enablers will foster innovation and efficiency, facilitate the integration of new technologies, encourage consumer participation, and maintain the grid's affordability, safety, reliability, and resilience.

Policy Enablers

1. As a first step, the Minister should direct the OEB to lead a time-limited engagement with LDCs, the IESO, customers, and other stakeholders to develop:
    - A shared definition for grid modernization
    - What Ontario plans to achieve with respect to grid modernization
    - Which parties are responsible for planning and making these investments
    - How to prioritize grid modernization capabilities, functionalities, and investments, including those needed to enable DERs to participate and provide services to the bulk system and wholesale market.
2. Next, the Ministry should provide firm and clear direction to the OEB, IESO, and industry with respect to establishing and declaring the need for foundational grid modernization investments.[7]
3. After completing steps (1) and (2), through direction and amendments to the OEB Act, the Ministry should provide the OEB additional clarity on its role in advancing grid modernization**.** The amendments to the Act could include amendments to section 71 of the Act, which restricts LDC business activities, and which could, for example, be amended to explicitly allow for LDCs' ownership and operation of DERs such as EV charging infrastructure and load control devices, as well as to remove the 10 MW limit for LDC ownership of renewable generation facilities.

These initial three steps will allow LDCs to progress with essential investments. After completing these steps, the EDA suggests taking additional actions, as noted below.

4. The Ministry and OEB should establish clear criteria for transitioning successful grid modernization pilots to system-wide implementation. These include access to ongoing government (federal and/or provincial) funding or rate base eligibility for subsequent adopters.
5. The Ministry and the OEB, in collaboration with LDCs, customers, and energy service providers, should develop new customer protection requirements based on the evolution/development of the markets.
6. Regarding workforce needs, the EDA endorses the recommendations made by Electricity Human Resource Canada (HRC) in its 2023 report titled "Electricity in Demand: Labour Market Insights." This report outlines an action plan to create a comprehensive human resource strategy for the sector.
7. The Ministry and the OEB should assess which aspects of the OEB's Affiliate Relationships Code may need to be revised. This evaluation should consider the new policy direction, changes related to the visions and objectives of grid modernization, the evolving landscape of electricity and energy markets, and any new functions and capabilities required of LDCs.
8. The Ministry, OEB, and IESO should review and continue exploring changes related to expanded distribution services, such as continuing to investigate and evolve new LDC service delivery models (e.g., DSOs), including the development and implementation of operational coordination protocols between LDCs and the IESO. We acknowledge the ongoing work on the development of new utility business models.

[7] This is similar to the policy direction provided to LDCs with respect to smart meters, TOU, and Green Button implementation as well as recent actions the Ministry has taken to declare priority transmission projects

9. The Ministry, OEB, and IESO should review and continue exploring changes that allow LDCs to take a more significant and autonomous role in electricity Demand Side Management (eDSM) offerings to customers as part of the new eDSM Framework.
10. Providing appropriate funding for the investments required for the successful transition of the energy sector in Ontario will be crucial. Changes to the traditional rate funding approach and other new funding approaches may need to be considered.
    a. The investments will require significant expenditure by LDCs, and novel funding sources will need to be considered, over and above the traditional methods available to LDCs through the OEB's rate application process.
    b. As LDCs make investments, they will rely on traditional approaches to financing projects – primarily borrowed funds. As these investments become significant, the additional borrowing will raise the debt-equity ratios of these utilities. The government may need to consider other funding approaches for future policy direction.

Regulatory Enablers

As soon as possible, after completing policy recommendations (1) through (3), the OEB should finalize the development of an evaluation framework, performance metrics, and filing requirement guidelines for grid modernization investments. This framework must identify the grid modernization investments identified as foundational and/ or policy mandate driven.

11. The OEB should consider mechanisms and/or accounting changes to support LDCs in implementing grid modernization technologies and in consideration of all energy costs, such as:
    a. An expanded Advanced Capital Module (ACM) / Incremental Capital Module (ICM) framework and reduced thresholds for grid modernization investments. We note that the OEB has launched a proceeding to review the ICM policy and recommend the OEB consider having a lower hurdle for approval and greater certainty regarding cost recovery for grid modernization investments.
    b. Allow greater access to funds in an Incentive Rate-Setting Mechanism (IRM) term. In addition to part a, the OEB should consider establishing a generic deferral account and collaborate with the distribution sector on a list of eligible prudently incurred grid modernization expenses and investments or an agreed-upon set of criteria to optimize the effectiveness of these investments. Allowing LDCs to recognize and recover the costs associated with grid modernization investments within 5-year rate periods or with their rebasing application will enable LDCs to be more agile in their decision-making.
    c. Require Distribution System Plans to have a specific grid modernization section that addresses the progress made against the roadmap identified in regulatory recommendation (1), covering ten future years of information.
    d. Allow capitalization of digital technologies in circumstances where these investments are crucial to grid modernization but might otherwise be classified as operating expenses (i.e., avoid trade-offs between OPEX and CAPEX). We acknowledge the OEB's efforts to consider this issue as part of its proceeding to review the PBR framework.
    e. Review its rate mitigation policy to provide utilities and the OEB with a range of approaches and supporting tools to help mitigate the effects of rate and/or bill impacts, such as phasing in costs over a reasonable period, deferral and variance accounts, and rate adders.[8]
12. Regarding climate resilience, we acknowledge the work of the OEB on the Vulnerability Assessment and System Hardening project, which prioritizes customer value and aims to develop policies on system resilience and assessment of vulnerabilities. We recommend that the OEB

[8] For example, the OEB previously made funding adders available for smart meter costs and in relation to connection of renewable generation and smart grid development.

consider modifying the Z-factor treatment of climate-related event expenses. We note that current policy states that LDCs can recover costs only for events that meet a materiality threshold on an individual basis. We recommend the OEB consider easing the requirement that costs must be caused by a single event to qualify for Z-factor claims. Although some LDCs have successfully made Z-factor claims, OEB decisions have often resulted in reduced recoverable amounts. Consequently, some LDCs have opted not to pursue Z-factor claims.

Question 9: Should Ontario consider further enhancements to its net metering framework? If so, what changes would be the most impactful in empowering consumers?

EDA Comments: We recommend that the government review the net metering framework.[9] We submit that current rules regarding community net metering are overly complex, administratively burdensome, and a barrier to solar adoption.

We recommend that the government consider implementing a **virtual net metering program** as LDCs have observed significant interest in net metering programs within their communities. We recommend the following:

- As a first step, the government should direct the OEB to work with LDCs, solar installers, and customers to establish a clear definition of virtual net metering in Ontario.
- Through this initial consultation, clarify the program's scope to consider whether LDCs need to perform settlements for DERs outside their territory.
- A high adoption of net metering could present challenges to distributors, and the OEB should consider imposing limitations/conditions on the power exported to the grid. The current net metering regulation may be problematic as it suggests that LDCs must accept all generation exported to the grid from a net meter installation regardless of time or location.
- To clarify the purpose of the 1% cumulative net metered generation capacity indicated in Section 6.7.2 of the Distribution System Code.[10]

Question 10: What further steps should the government take to enable households and businesses to manage and make informed decisions about their energy use?

We support the government's efforts to improve the electricity efficiency framework. As noted in our submission in the 2025-2036 Electricity Energy Efficiency Framework (ERO no. 019-9235), we applaud the government's recognition of, and proposal to re-establish, the enhanced involvement of LDCs in eDSM. We believe that establishing this new framework is a crucial first step. EDSM is a low-cost, non-emitting resource that can respond dynamically to the electricity system needs of the province, making Ontario's clean electricity accessible to customers cost-effectively. It will also help address the anticipated energy supply shortfall identified in the IESO's 2025 Annual Planning Outlook Demand Forecast. Additionally, we support the transition to a rolling long-term energy efficiency framework. In our view, this will provide certainty to customers and the marketplace, which is particularly beneficial for projects involving multiple cumulative phases, such as large commercial and industrial projects. We also note that LDCs are uniquely positioned to support the IESO's province-wide programs through their

[9] Refer to BCUC's net metering program for incentive structures

[10] 6.7.2 of the DSC states: "A distributor shall, upon request, make net metering available to eligible generators in its licensed service area in accordance with the Net Metering Regulation, on a first-come-first-served basis, unless the cumulative generation capacity from net metered generators in its licensed service area equals one percent of the distributor's annual maximum peak load for the distributor's licensed service area, averaged over three years, as determined by the Board from time to time." [Emphasis Added]

customer engagement expertise. They maintain long-standing customer relationships and have well-established, cost-effective marketing and communication channels to educate and engage with them. With LDCs' expertise in customer engagement, we are confident that the IESO's province-wide eDSM programs will positively impact Ontario. Finally, we support the government's proposal for dedicated LDC funding for eDSM programs in their respective service areas to address local distribution system needs. LDCs are familiar with their customers, communities, and distribution systems. Expanding funding for LDCs to include tailored eDSM programs that address distribution system constraints will complement the IESO's province-wide eDSM initiatives.

Question 11: With the energy sector evolving and distributors considering new roles in serving customers? What barriers exist that limit local distribution companies from taking on new duties that could enable more efficient grid operations, leverage new technologies and further the integration of DERs?

EDA Comments: LDCs face several barriers when attempting to adopt new roles in the energy market. One significant challenge is regulatory constraints. The OEB should review section 71 of the OEB Act, which limits LDCs' ability to innovate and expand their services beyond traditional distribution. These regulations are often designed to ensure reliability and affordability, but they can also stifle innovation by imposing rigid frameworks that do not easily accommodate new technologies or business models. The OEB, in its submission to the Electrification and Energy Transition Panel, noted additional exemptions under section 71 should be considered and stated, "Broadening the OEB's power to allow for generic exemptions for specified new activities (if well-suited to being funded outside of rates) could provide greater predictability and could facilitate the faster and wider adoption of innovative ideas throughout the sector."

Another barrier is the financial risk associated with adopting new roles. Transitioning to new business models or integrating advanced technologies often requires substantial upfront investment. LDCs may be hesitant to make these investments due to uncertainty about the return on investment and the potential for stranded assets. Our recommendation to establish a clear definition for grid modernization and to provide greater clarity on the related investments will help alleviate regulatory uncertainty and risk.

Lastly, there is the challenge of workforce readiness and expertise. Adopting new roles often requires specialized knowledge and skills that may not be readily available within the existing workforce. LDCs will need to invest in training and development programs to equip their employees with the necessary skills, which can be time-consuming and costly. As noted earlier in this submission, we support the EHRC's recommendations in its 2023 report titled "Electricity in Demand: Labour Market Insights." This report outlines an action plan to create a comprehensive human resource strategy for the sector.

Thank you once again for the opportunity to comment on this proposal and we look forward to continued engagement with the Ministry on these important issues. If you have any questions, please contact Rudra Mukherji, Senior Regulatory Affairs Advisor, at rmukherji@eda-on.ca.

Sincerely,

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