

Date: February 25, 2025

From: James Scongack Chair, IESO Strategic Advisory Committee

To:Bill Sheffield, Chair, IESO Board of Directors
Lesley Gallinger, President and CEO, IESO

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Re: 2024 Challenge Statements & Summary of Feedback, Strategic Advisory Committee

I would like to take this opportunity, on behalf of the IESO Strategic Advisory Committee (SAC), to share with you a summary of our work in 2024 and in particular two challenge statements that we've undertaken to put a focus on community/municipal and Indigenous engagement, along with some key themes that have emerged from our various sessions. Since we carried out this work in 2024 the emergence of the threat of potential tariffs has introduced uncertainty for Ontario. However, the SAC believes the key elements in challenge statements still remain the right focus areas with an aligned consensus on the need for speed.

I appreciate the engagement of the IESO Board and Executive Leadership Team in our public SAC meetings and in a range of forums as we work to provide input and advice that is clear, practical and as integrated as possible. As discussed in our recent session with the IESO, the SAC remains committed to evolving our work with an aim at informing IESO's priorities and that of the sector overall.

While the IESO SAC is cross-functional in its representation of the sector and the Province, I believe it is essential that SAC also has a role to play on a collective and sectoral basis by providing strategic input that balances these factors to inform decision-making on the part of the IESO. As I always like to say, the feedback at the various SAC sessions surpasses that of any of our individual considerations as a specific constituency and when our sector is successful, Ontario is successful.

In 2024, we had another strong year of SAC engagement and I would again like to thank all SAC members for their participation, engagement and sage advice to the IESO Management and Board throughout the year. Please find enclosed an overview of the SAC membership and background of each SAC member (**Appendix A**). I'm pleased with the new additions to the SAC this year and this consistent renewal is important to ensure we have a fresh perspective on the many pressing issues and opportunities facing our sector.

The pace of change in Ontario's electricity sector continued to accelerate in 2024 with a continued long-term view of growing demand, the important linkage between our sector and the Province's economic growth

strategy and, in the later part of the year, the prominent role that energy and electricity played in bi-lateral relations between Canada and the United States.

The work previously completed in 2022/2023 on Challenge statements in the areas of urgency and timing of new resources; maximizing existing resources; resource adequacy and modernization and efficiency all proved to be key elements that were central to the actions taken by both the IESO and Province during this period of accelerated change. In 2024, I think the additional work on challenge statements in the area of engagement with communities/municipalities and Indigenous rightsholders was an important focus as we now begin to shift to a greater degree of execution within the sector that is evident as know Ontario and Canada broadly has an opportunity to accelerate energy development and success in these areas is an important pre-requisite.

As you are aware, in each of these areas, a cross-functional working group was assigned to outline and/or update a challenge statement to clearly articulate the opportunity or risk to be addressed, a common set of facts and rationale, definition of the role of the IESO and other stakeholders and strategic considerations/advice. The outputs of these Challenge Statements were agreed upon by the respective working group, the SAC broadly and discussed openly in our various public meetings.

Please find enclosed the collective summary of all the Challenge Statements that have been completed by the SAC in the 2022-2024 timeframe (**Appendix B**). While some of the specifics have evolved during this timeframe, the fundamental themes and overall input remain the same. I appreciate both the work that SAC members put into all these challenge statements and how this work contributed valuable input into important decisions. This cross-functional exercise was a true example of how everyone was focused on the sector first, and while the SAC will now evolve its work into a new deliverable beyond the challenge statements these principles are something that can carry forward.

In addition to these inputs, there are some key summary items coming out of 2024 that I would like to flag for the IESO Board and Executive team as you consider these matters.

- Continuing to Accelerate No Regret Actions: The advancement of no regret options developed by the IESO in a number of areas will need to continue at an accelerated pace to build the optionality around the long-term electricity infrastructure options for the sector, successfully de-risk projects by completing project definition work such as engineering and regulatory approvals, in addition to engagement with the public and Indigenous rightsholders.
- 2. **Municipal and Indigenous Rightsholder Collaboration:** Engagement with Municipalities and Indigenous Rightsholders is critical to the acceptance, development and execution of all elements of electricity supply infrastructure in the province. Through the IESO or other means, a more enduring

and sustainable manner of capacity funding for energy development will be a key element to the acceleration of a wide range of energy resources including electricity.

- 3. **Prioritization of Existing Assets:** Existing assets in Ontario's electricity system where their life or performance may be extended, optimized or enhanced have the unique ability to deliver more output and/or capacity in a shorter period of time in many cases. Continued focus on existing assets remains of key importance to address system challenges.
- 4. **Ontario's electricity system as a strategic Am-Can advantage:** Ontario's electricity system is closely integrated from a generation, infrastructure and supply chain perspective with the United States. With the urgent need to strengthen and/or secure the Canada-US relationship, electricity system decisions for Ontario can have broader strategic benefits to the province and should be considered.
- 5. **A focus on execution capability:** Given the build-out of energy infrastructure around the world, execution capability around long-lead supply chain considerations and skilled workers will remain a constraint to be managed. No regret actions have the ability to de-risk these execution issues considerably, however, working cross-functionally within the sector and ensuring government is ready and willing to influence these factors will be essential in the near term.

I hope these summary items, combined with the Challenge Statements and our work together throughout the year will be helpful in supporting the important work and decision-making of both the IESO Management Team and Board of Directors. I would also like to recognize all the SAC Members for their outstanding leadership, teamwork and engagement in our collective work. This package represents an important alignment that is critical at this time with the many challenges and opportunities facing our sector.

On a personal note, I would like to thank you both for the opportunity to serve as the Chair of the IESO SAC during an important time for our sector. Since joining the SAC in 2013, to where we are today, it's remarkable to see the level of change and evolution of our sector. While there are many externalities that have evolved over this period of time and the constellation of issues, what has remained consistent in my view is the tremendous talent and dedication of people in our sector who are committed to making our Province all it can be. By working together, I have no doubt that we will be successful and rise to the challenge that the current environment demands of us.

Again, thanks for your support of the SAC in 2024 and I look forward to discussing this summary at the next available opportunity.

Regards,

James Scongack Chair, IESO SAC

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Appendix B: Challenge Statements

2022/2023 Challenge Statements

Theme 1:Urgency and Timing of New ResourcesSAC Members:David Butters (lead), John Avdoulos, Paul Norris, Gurvinder Chopra

Challenge Statement:

- This is a critical time for Ontario's electricity sector. The 2022 Annual Planning Outlook ("APO") published in January '23 forecasts both **energy** and **peak demand** to grow steadily over the outlook period, with energy and winter peak demand slightly more than the 2021 APO Reference Scenario forecast.
- The IESO has recently concluded some procurement processes and others are currently underway.
- Recent Ministerial letters and announcements (e.g., Powering Ontario's Growth; Ontario's Plan for a Clean Energy Future) provide important future direction for energy planning that leverages Ontario's clean energy advantage, and supports economic growth and Ontario's net-zero objectives, affordably and reliably.
- However, there is still much more work to be done as demand for clean energy increases and Ontario works towards meeting the province's growing electricity needs.

Supportive Facts and Rationale:

- Reliability remains the paramount objective of the IESO.
- The most recent 2023 Annual Planning Outlook (APO), forecasts potentially unserved energy beginning in in 2028 increasing significantly through 2043:
 - **Capacity needs emerge** in 2026 and grow over the IESO's planning horizon, and e**nergy needs** also emerge in the mid-2020s, and grow sharply beginning in 2029
 - Transmission system constraints have also been identified for action or further study.
- On July 10, 2023 Ontario's Minister of Energy announced Powering Ontario's Growth Ontario's Plan for a Clean Energy Future. The report represents the Government of Ontario's response to last year's Independent Electricity System Operator ("IESO") Pathways to Decarbonization ("P2D") report and subsequent EBR Posting, and commits to significant actions designed to ensure the province is prepared to sustainably manage anticipated growth in energy demand.
- To that end, the province is prioritizing a number of key areas, e.g.:
 - <u>New Nuclear at Bruce and Darlington</u>: Commencing pre-development work to site the first largescale nuclear build the Bruce nuclear site in Kincardine, ON and moving ahead with three additional small modular reactors at the Darlington nuclear site;
 - <u>Building New Transmission</u>: New transmission lines to power the conversion from coal to Electric Arc Furnaces at Algoma Steel as well as growth in Northeastern Ontario, Ottawa/Eastern Ontario, Southwestern Ontario, and in the Greater Toronto Area;
 - <u>Long-Duration Storage Assessment Process</u>: Ontario's first Long-Duration Storage Assessment to be carried out by the IESO to which the Ontario Pumped Storage Project in Meaford and Marmora Pumped Storage Project will be first to advance;

- <u>Hydroelectric Power</u>: Optimizing the Ontario Power Generation ("OPG") existing hydroelectric fleet, along with other hydroelectric generation under contract, to increase clean generation capacity;
- Recent postings on the EBR have requested commentary on several of the above.
- The Electrification and Energy Transition Panel report and the Ministry of Energy's energy pathways study will provide further direction later in 2023.

IESO Role:

- Maintaining reliability of the system.
- Providing timely and accurate information and data to support identification and timing of need.
- Consulting and developing timely, feasible and predictable competitive and other procurement mechanisms that can address multiple objectives of reliability, affordability and emission reduction policies.
- Complying with Ministerial Directives and developing and executing the solutions to meet future system needs-in a timely manner.

Role of Others:

- Incremental investment in existing and new assets requires a pool of owners, developers and investors with necessary expertise, capital, and appetite to participate in the Ontario market:
 - These potential participants need continued line of sight and information on the Ontario market and supply/demand picture to consider the features, benefits and risks of investing and operating in the Ontario market, and to be able to work with the IESO and government to develop feasible options that can move from concept to commercial operation.
- There needs to be clear cooperation between all levels of government, industry, community stakeholders and Indigenous peoples to meet our sustainability goals and make the most of an energy grid that sets Ontario apart and can be our clean energy advantage.
 - The federal government has been increasingly active in electricity issues through investment avenues (e.g. CIB, ITCs) and regulations (like the CER). Municipalities also play a role, particularly in permitting.
- LDCs, communities and other stakeholders need to engage in the discussion to ensure alignment of their priorities around electricity planning and operations to ensure consumer flexibility is considered.

Strategic Considerations and Committee Advice:

- While the IESO has already begun to move toward solving this problem, timing remains very tight and there is some uncertainty about the capacity of the IESO to sustain the required initiatives,
- Stakeholders and policy makers recognize that in order to maximize resource optionality to meet Ontario's
 future electricity needs it is important not just that the procurement processes are successful, but equally
 important that the selected projects are able to be permitted, built, connected to the IESO administered
 Grid, and ready to supply reliable energy when needed. This will require the active participation of and
 support by key regulatory Ministries (e.g. MECP, MNRF).
- Provide ongoing support to the province to:
 - Access timely federal government investment (e.g. CIB, ITCs);
 - Ensure regulations such as the CER regulation do not impede an orderly energy transition;

- Ensure appropriate federal and municipal improvements to permitting of large infrastructure.
- Continue further work to determine if low-carbon fuels, such as hydrogen and renewable natural gas, together with storage technologies can replace some of the flexibility of natural gas.
- Galvanize collaboration amongst stakeholders and Indigenous communities.
- Provide greater clarity on timing/plan new for hydro resources in Northern Ontario.
- Establish open, transparent and traceable process to measure progress and demonstrate results of decisions and actions taken along the way.
- Managing investor confidence must be acknowledged when developing mechanisms to meet needs, and in particular, the IESO should seek an increased understanding of the investment/finance community to ensure revenue expectations and risks are appropriately considered.
- Incorporate DERs to help meet the growing and urgent needs including through new arrangements with LDCs to access, expand, and utilize these technologies.
- Be pragmatic when prioritizing the development of solutions to meet urgent system needs, as different factors and opportunities may influence the mechanisms to meet longer term needs.
- Maintain awareness of international resource supply chains issues and resource security as areas of growing importance and consideration in meeting future system needs.

Challenge Statement:

- Ontario faces a significant near term, growing and enduring need for supply to meet increased demand that will continue with electrification of the broader economy. At the same time, contracts for several existing resources will expire within the next decade, in most cases, well prior to the end of the useful life of the assets
- •
- What tools and mechanisms should the IESO use to cost effectively and reliably optimize the acquisition and continued operation of existing supply and demand side resources?

Supportive Facts and Rationale:

- Ontario taxpayers subsidize the rate impacts of existing resources to the tune \$6.5B in 2021, and \$7b IN 2022 which highlights the need for prudent procurement.
- Ontario's installed electricity capacity is 38,216 MW, almost 19,000 of which is rate regulated (OPG) and a further 6,550 MW under long term contract (Bruce Nuclear). As such, resource re-acquisition mechanisms are focused on the remaining ~33% of existing assets
- 43% of the contracts for existing Ontario supply resources will expire over the next decade:
 - Expiring resources must be contracted effectively ensuring initial high-cost procurements are now utilized to bend the cost curve (downward) and the value of these assets are utilized for all Ontarians.
 - Options to "blend and extend" should be revisited for all expiring generating assets.
- The IESO's Annual Planning Outlook assumes the continued operation of existing assets over the horizon of the Outlook, yet asset owners may not have the investment confidence to make that same assumption which yields higher supplier risk premiums to address this uncertainty.
- The IESO's current or planned re-acquisition mechanisms or "toolkit" includes annual capacity and forward capacity auctions, mid term RFPs, same technology expansions and programs
- There is no IESO process for acquiring, dispatching or managing smaller existing, embedded non-market participant facilities, highlighting a revenue adequacy issue for small resources. Processes exist within LDCs but there is no real-time operational oversight by the IESO which makes it difficult for the IESO to rely on the contributions from these resources to manage the IESO administered Grid.
- No other jurisdictions are paying carbon tax to the significant extent within their electricity system. In other
 jurisdictions where generators are subject to cap & trade carbon costs mitigating factors are available. It
 should be noted that there is no carbon tax in the US and several other jurisdictions that Ontario
 businesses compete with.
 - Ontario Mining Association (OMA) and AMPCO analysis estimates 2022 carbon tax implications cost participants \$4/MWh and will be \$7/MWh in 2023 and \$20/MWh in 2030, and \$2 of carbon could cost \$500k in the market and will continue to grow as the electricity market grows

IESO Role:

- Understand each resource type and what is in scope for optimization.
 - Description; Example; Include opportunities for pairing technologies that optimize them (storage, hydrogen, etc.)

- Provide transparent opportunities for assets owners to communicate optimization from their perspective.
- Develop fit-for-purpose tools.
- Ensure ensuing contracts offer flexibility.
 - Engage generators with expiring contracts now bend and extend, bend the cost curve downward
- Ontario grid provides reliable, affordable and sustainable power
- Tools and rules for aggregation and market participation across a broad spectrum including non-market participants.
- Running transparent, competitive, and timely procurement processes Ensure consistency with relevant emerging regulations (i.e. CER)

Role of Others:

- Generation, transmission, distribution and demand response resources communicate effectively what optimization looks like in their world
- Customers and other stakeholders communicate their need for reliable, low cost and sustainable power such that the IESO understands what are customer "tipping points"
- LDC's have ability to support various resources operating within their jurisdiction while ensuring fiscal responsibility and appropriate charges across a broader range of participating resources.

Strategic Considerations and Committee Advice:

- Consider the government's use of ministerial directives to direct procurement/operational matters, and focus on establishing principles and the characteristics they expect to see optimized, such as cost, environmental, reliability, etc.
 - Existing electricity resources should be procured using mechanisms which balance the need for investment certainty and ratepayer value, regardless of the technology type or point of connection (grid-connected or behind the meter). However, also consider different clearing prices for emitting and non emitting resources.
 - \circ $\,$ Carbon cost are being over-collected in the electricity system
 - Carbon cost are not collected in any other market clearing price signal in North America
 - Keep generators whole while ensuring carbon costs are being collected appropriately and induced carbon cost are not creating market distortion.
- The policy, regulatory and governance frameworks should be designed by the IESO and OEB to encourage distribution utilities to procure third-party electricity resources to meet local distribution needs while allowing these resources to value stack in order to reduce overall costs to the consumer.
- Aggregation of small loads, behind the meter and virtual loads should be allowed as in other jurisdictions
- Better coordination of gas and electricity energy resource
- Increased focus on reliability and resilience:
 - if electricity wants to increase its "market share" it needs to begin to increase its resilience and reliability to that of natural gas
- To enable the participation of distributed energy resources (DERs) as dispatchable resources, operating
 reserves, other ancillary services, capacity or energy resources, the IESO should allow for aggregation of
 DERs by expediting the development of the IESO's software and settlement tools as well as Market Rule
 changes that today preclude the utilization of cost effective and flexible DER resources. Currently this is
 available in other jurisdictions such as Alberta and New York.

- Enable a renewable energy certificate (REC) mechanism. In jurisdictions like Alberta and many US states, RECs can be registered is a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation. It provides value to the renewable generation resources, thereby reducing the cost to Ontario rate payers.
- MACC (marginal abatement cost curve) should be used to evaluate generation options against all other options (broad economic based) for sustainable Ontario

Challenge Statement:

• How to build a pathway to a net zero electricity grid in Ontario that guarantees sufficient supply at affordable rates to people and businesses every step of the way.

Supportive Facts and Rationale:

- While the reliability outlook has improved, Ontario will still be faced with significant reliability challenges going forward. Orderly and decisive action with a regular cadence is required to maintain adequate supply over the next decade.
 - Pickering retirement, nuclear refurbishments, coupled with significant MWs of contracted resources nearing the end of their contract terms toward the end of this decade are driving the near-term needs.
 - Recent procurements by the IESO means that by 2026, Ontario should have ~1200 MW of new capacity participating in the IESO's electricity market, and procurement activities are continuing through 2023 and into 2024 and beyond.
 - Population growth in Ontario and increasing electrification of its economy will also drive significant demand growth over the next two decades
 - A robust, sustainable and affordable Ontario electricity system requires ongoing investment, both to maintain existing assets, and to build new assets, as they are required. This is not a given, since developers face global opportunities for their time, capital and expertise.
- Over the longer-term, there is increasing pressure to plan for electricity emissions reductions
 - In its Pathways to Decarbonization report, the IESO identified the potential to eliminate emissions from Ontario's electricity system – but only after a transition that sees natural gas generation maintain reliability until nuclear refurbishments are complete and new non-emitting technologies such as storage mature.
 - To achieve decarbonization, we need to build out our non-emitting resource mix further, taking into account the time it takes to build all that new infrastructure, and allow new technologies to mature.
 - ESG requirements amongst investors, manufacturers and property owners are also putting pressure on the grid to achieve net zero and other sustainability outcomes.
 - The federal government has released a draft of its Clean Electricity Regulation (CER) to mandate a net zero by 2035 pan-Canadian electricity grid.
 - $_{\odot}$ $\,$ Federal funding such as that from CIB and ITCs will drive further system changes.
 - Considerable debate has been taking place at a municipal level about the future of electricity supply.
 - The Ontario Government recently released "Powering Ontario's Growth", which lays out important directions based in part on leveraging the existing resources of the grid today, while looking forward to additional technologies such as large scale new nuclear, SMRs, hydroelectricity and storage, lower carbon fuels, demand response and conservation as key opportunities.

- Additional considerations:
 - Reliability and affordability¹ will remain key issues for government and ratepayers
 - There is a consensus that both wise use of existing assets and the need for a pathway for prudent and affordable longer term electricity investment are required.
 - Innovations in energy storage, nuclear, and other supply areas are promising, but could be affected by supply chain challenges and long-lead times. Other potential non-emitting technologies (e.g. hydrogen, CCUS) are not yet readily available or commercially viable.
 - A number of new, critical electricity transmission projects will be required to support Ontario's resource adequacy plans.
 - There is strong support for "Made-in-Ontario" solutions among politicians and residents of the province.
- **Bottom Line**: Reliability, Affordability and Sustainability will underpin policy decisions that shape the electricity grid of tomorrow.

IESO Role:

- The IESO's role is to operate the electricity system with a primary objective of maintaining reliability.
 - Planning should drive key decision-making, particularly on needs assessments to support procurement pathways through the IESO or the OEB. Competitive procurements should be pursued where possible, but it is also understood that the OEB and regulatory oversight on a cost-of-service basis can serve as a useful surrogate to competitive tension (particularly on certain long lead and large-scale capital projects, e.g., nuclear power, very large hydro storage).
- The IESO must be transparent on how the electricity system will continue to support reliability. It should take into account detailed socio-economic analysis and input on demand growth, electrification and energy transition, informed by input from the Ministry of Economic Development, Job Creation and Growth, the Ministry of Northern Development,

the Ministry of Natural Resources and Forestry, and the Ministry of Mines. This work should be included as part of the analysis forming the APO.

- The IESO should take a Conservation First approach, and work with LDCs as part of an updated 2021-2024 CDM Framework to optimize CDM programming and planning.
- The IESO should work aggressively to enable DERs and NWAs to participate in the IESO Administered Market.
- The IESO should provide clear and plain language information to municipalities and Indigenous communities on electricity planning.

Role of Others:

- The IESO should work with the Electricity and Energy Transformation Panel ("EETP") once it reports on its findings as well as the Ministry of Energy's "Cost-Effective Energy Pathways Study" and other relevant ministries to better understand:
 - \circ The drivers of electricity demand tomorrow and in the years ahead, and

¹ According to recent research on impressions of the Energy Transition: "4-in-10 generally feel good about the energy transition, but skepticism is growing." (Politics of the Energy Transition; Innovative Research, September 2023)

- The sustainability or emissions profile of that electricity supply needed to support economic development imperatives in key sectors and amongst the general population.
- Active and ongoing engagement with municipalities, Indigenous communities, business groups and other stakeholders will be critical to help inform decision-making.

Strategic Considerations and Committee Advice:

- The initiative to roll the APO and AAR into one annual update document should be continued.
- IESO should work with the Ministry of Energy and other key organizations in the energy ecosystem, including the natural gas industry to transform the APO/AAR into a coordinated provincial energy plan. This Plan will provide Ontario's the basis for coordinating provincial and federal net zero objectives.
- Decarbonizing Ontario's economy requires an "all hands on deck" and "all resources" approach:
 - Take a "safe bets" approach: proven technologies + Ontario's sustainable/reliable electric system + a reliable/resilient and affordable natural gas distribution infrastructure, provides a pathway to a reliable, sustainable and affordable 2030 outcome;
 - Electrifying technologies across various sectors, particularly transportation, manufacturing and industry, could mean real progress in reducing overall provincial greenhouse gas emissions.);
 - Given the scale of Ontario's gas peak demand (90,000 MW) and the resilience of the gas system, electrification of building heat could benefit from a hybrid heating approach. Leveraging heat pumps and furnaces for heat to minimize duplication of infrastructure to deliver peak heating requirements and increased emissions from using gas fired generation in lieu of the direct use of gas, when needed.
 - Post 2030 decarbonization will call for a massive deployment of capital-intensive infrastructure soon.

Challenge Statement:

- Attending to the climate emergency with urgent action is part of the mandate of many organizations both in the sector, and in other industries that rely on the energy sector. Building grid resiliency in the face of climate change is of the utmost importance.
- As a sector, we must turn our minds to building grid resiliency in partnership with Indigenous communities. Working together through this energy transition is critical.
- For over a century, there has been mostly one-way flow of electricity, with stable demand curves. The sector has long operated based on the principle that the future will be overwhelmingly like the past.²
- As a sector, we are on the precipice of massive change. It is not just that people are using more energy efficient air conditioners and switching out their gas stoves for electric, but transformational change is occurring in the economy. Electricity will serve fundamentally new roles in our lives as a fuel source, as a marketplace, as an enabler of more connected cities.³
- While we have the certainty of fundamental change, we are also uncertain about the pace and particulars of that change. We need to plan from the center out: from certainty to uncertainty. The choices made today have long-term implications. Those trade-offs are more important than they have ever been.
- As a sector we must not lose sight of the importance of helping those who need it most. Those who may be grappling with the pressing affordability consequences that can flow from taking the necessary action in support of grid modernization and electrification.
- Public policy, customer expectations and technological advancements are converging around three key themes which impact the ways electricity is produced, delivered and used:
 - Increased demand we know that demand for electricity could double by 2050³. We know more electricity is required to meet that demand but we also must remain flexible to scale as needed based on market conditions which continue to change.
 - Grid modernization we need to lay the foundation of this future state through a series of upfront modernization-focused investments in the grid and in our operations. These investments are not nice to haves. They are need to haves. Grid modernization lays the foundation for meeting rising customer expectations for reliability, resiliency and efficiency.⁴
 - **DERs** are recognized as having an important role in managing and enabling the energy transition.
- **The challenge then, is this:** to modernize a historically linear system so it is agile and adaptable to inevitable change, while continuing to deliver on familiar customer and system imperatives.

Supportive Facts and Rationale:

The path to decarbonization has begun, but how and when it is achieved remains uncertain

² 2022 OEA Energy Conference TH Speaking Notes ³ 2022 OEA

Energy Conference TH Speaking Notes

³ Powering Ontario's Growth

⁴ Comments from Northwinds Panel – Unlocking and Leveraging Potential with Distribution Systems

- Decarbonization will shift electricity demand from a stable steady state seen in recent decades to a dynamic and uncertain future of (potentially exponential) growth. Bulk system demand forecasts in successive IESO Annual Planning Outlooks have increasingly tended towards a higher demand scenario identified in the 2022 Ontario Planning Outlook.^{5 6}
- What remains uncertain is by how much, when, and in what ways demand will increase, and correspondingly by how much, when, what types, and in what ways supply will ramp up to meet that demand, as there many inputs to demand (and supply) both global and local, which will affect the pace of change.⁷
- Working Group Recommendation: while there are multiple potential paths to net zero, a good plan now is better than a perfect plan later. To this end, Ontario is working to identify plausible forecasts and decarbonization plans for electricity demand and electricity supply⁸ and this work is critical to enable stable market conditions that drive investment and business growth in Ontario.

Customers and technology are driving change to how the electricity system operates

- There is emerging public consensus on the need to decarbonize the economy.⁹ Customers are increasingly turning to technologies, such as EVs and demand-side resources such as storage and solar panels, to reduce their environmental footprint.¹⁰ However, customers also require visibility and assistance in accessing and deploying these opportunities.
- There remains some short-to- medium-term supply chain, cost and policy challenges leading to timing and proliferation uncertainly for some technologies which can be used by utilities to address emerging local, regional and provincial needs using customer and non-utility solutions in place of, or to supplement, traditional approaches. Through technological advancement and decarbonization initiatives, DERs will become more prevalent as sources of supply and demand management tools. Tools that can assist the utility in managing the bidirectional grid to better deliver outcomes for customers, including managed energy costs, improved reliability and power quality, and reduced environmental footprint.
- Working Group Recommendation: sector must undertake "complete picture" analysis and customer engagement on the costs and values of decarbonization activities and alternatives (including pace). Those engagements should be robust and look beyond the bulk system, a particular technology, and even electricity alone, to take an all-in approach that enables meaningful analysis and engagement in the discussion about choices and trade-offs, including customer preferences and price tolerances.

⁵ IESO, Annual Planning Outlook, December 2022.

⁶ Decarbonization will increase electricity demand at an unprecedented rate and will require significant investments and rapid upgrades in the electricity system infrastructure. (Pathways to Decarbonization, IESO Dec 2022, Page – 4)

⁷ Demand depends on changing consumer preferences that are subject to a broad set of global drivers: technological innovation (e.g., EVs, heat pumps, industrial innovation), government policy (e.g. fiscal policy, inflation), global supply chain constraints (e.g., materials, commodities and equipment), global pandemics (e.g. COVID-19) and global energy prices. Demand for electricity also depends on energy policy choices here at home: supply-side factors such as bulk system capacity, demand-side tools (e.g., CDM, ICI and DERs), as well as rate design (e.g., low overnight RPP rate, GA rate design, net metering).

⁸ The IESO undertook a Pathways to Decarbonization Study, that explores the potential pathways for reaching a reliable, affordable, decarbonized electricity system in Ontario. The Ontario Government has launched an Electrification and Energy Transition Panel to provide advice on potential demand curves and coordinating long term planning.

⁹ Canadian Net-Zero Emissions Accountability Act, which became law on June 29, 2021, enshrines in legislation Canada's commitment to achieve netzero emissions by 2050. The Ontario Government has committed to decarbonizing the economy and is making investments to enable electrification. The City of Toronto has an established net zero by 2040 plan.

¹⁰ Electric Autonomy Canada reports that electric vehicles (battery electric, plug-in hybrid, hybrid electric and fuel cell vehicles) sales surged to nearly 11% of the total market share in Canada in Aug 2023, highest proportion ever. See: <u>https://electricautonomy.ca/2023/08/25/zevmarket-share-canada-q2/</u>. Additionally, battery electric vehicles registrations saw an increase of 46.3% in Q2 August 2023

The electricity system must incorporate more technology to optimize its operations and enable change that customers expect

- The electricity grid has provided one-way flow of electricity for over 100 years. Actions taken to build and operate the electricity grid more efficiently to meet relatively consistent customer expectations over that period have been consistent with that century-old paradigm.
- The availability of new technologies and changing customer expectations plus decarbonization means that the grid must now evolve to incorporate more capabilities: e.g. automation, enhanced observability and control, two-way flow of (more) electricity, and increased electronic transactional and information-sharing processes with customers.
- As DERs proliferate over time, there are increasing expectations for utilities to play a greater role connecting and integrating supply and demand side resources into new, varied, and concurrent opportunities.¹¹
- The grid must be there for customers when they need to "plug in", which will require investment in grid, systems, people, and partnerships ahead of when the demand materializes.
- Working Group Recommendation: align planning, coordination, and incentives.
 Modernization will require an evolution to grid operational processes and plans (e.g., bulk procurement, energy markets, regional planning, etc.) to better incorporate the needs of customers (individually and in aggregate), as some elements of modernization present challenges to conventional market and regulatory incentives, such as funding electrification driven investment or in its treatment of DER-backed non-wires alternatives.¹²

IESO Role:

- Issue bulk system demand and supply forecasts that incorporate consumer trends on electrification and are consistent with an Ontario plan for decarbonization (in coordination with the Province and Electrification and Energy Transition Panel).
- Maintain bulk system reliability through the transition to decarbonization.
- Operate and evolve efficient energy markets, including as part of Market Renewal. Develop coordination protocols in collaboration with utilities to better integrate DERs into energy markets, leveraging groups like the Transmission-Distribution Coordination Working Group and pilot projects testing models aggregating DERs. Design DER-oriented market rules such that they remain agnostic to the role of utilities in order to enable different paths of grid modernization (e.g., DSOs).
- Evolve procurement mechanisms to better integrate value-stack opportunities presented by DERs connected to the distribution system; partner with utilities (remaining agnostic on their role) to leverage local information and incorporate local distribution considerations in procurement design.

¹¹ For example, utilities need to invest in short-term forecasting, planning, and dispatching capabilities that together will allow for the active, real-time management of DER value as it relates to highly dynamic and complex system needs.

¹² Some utilities are already implementing DER-backed Non-Wires Alternatives (e.g., Toronto Hydro Local DR) as an engineering tool, however evolutions to frameworks and incentive regimes are needed to more broadly enable these approaches.

OEB Role:

- Maintain a baseline of regulatory stability and strong consumer protections during the transition to net zero, evolving regulatory mechanisms in a targeted fashion to address specific and identified barriers or emerging needs (e.g. reconciling timing between investment in the grid and when demand materializes).
- Maintain an outcomes orientation in its approach to regulation, having regard for changes in the relative importance of those outcomes (and potential introduction of incremental outcomes) and the potential need for a wider lens for benefit-cost analysis (e.g. beyond the meter) during a period of intense change.
- Monitor, review and relevant policies promptly in response to emerging trends: e.g. following the Framework for Energy Innovation Working Group output, develop a non-wires alternative framework.

Local Distribution Companies' Role:

- Develop, review and revise grid expansion plans that best anticipate customers' incremental electrification requirements, with a base of investments that support the widest range of credible demand scenarios.
- Modernize distribution systems to incorporate the operational benefits of technology, and prepare for decarbonization and demand-side tools such as DER-backed non-wires alternative opportunities.
- Work collaboratively with the OEB, the IESO, each other, and third parties on emerging issues, such as the integration of behind-the-meter DERs

Theme 5:Community AlignmentSAC Members:Tonja Leach (lead), Ed Gilbert, Scott McFadden, Michael Di Lullo,
Pat Chilton, Frank Kallonen

Definition of Community:

Communities encompass both Indigenous and non-Indigenous entities, such as their governing bodies, utility providers, those involved in development, technology and service providers, and potentially other stakeholders specific to the local context or investment opportunity. These communities are situated within a defined geographical area that is smaller in scale than a province or territory and governed by an organized authority, which may consist of regions, cities, townships, hamlets, reserves, or settlement areas, among others.

Challenge Statement:

- Communities have a critical role to play in enabling the growth of Ontario's electricity sector by building buyin and raising awareness for sustained implementation of new electricity resources, by reducing the need for electricity capacity through energy efficiency measures and implementing thermal networks, by coordinating parties from various sectors, and by establishing Community Energy and Emissions Plans that set local and regional priorities which inform electricity resource planning.
- Local governments and Indigenous communities are vital partners as a resource to the electricity system when establishing the conditions needed for the communications, planning and expansion of the grid to meet tomorrow's energy demands.

Supportive Facts and Rationale:

- Communities in Ontario are responsible for over 65% of energy use and 60% of Ontario's greenhouse gas emissions.¹³
- Local governments (Indigenous and municipal) control urban planning. This includes land use, transportation, building location and design, landfill, water and wastewater systems, industry location and integration; all of which require energy and produce emissions.
- Local governments are the **level of government closest to individual Canadians** giving them the greatest ability to influence human behaviour, ensure local interests are being met, and build the necessary and lasting support for aligned climate and energy policy and implementation.
- Local governments have the ability to significantly influence energy supply and demand locally, regionally, and provincially through Community Energy and Emissions Planning. A Community Energy and Emissions Plan (CEEP) is a tool that defines community priorities around energy with a view to improving efficiency, reducing greenhouse gas emissions, and driving economic development. Local governments have a role to play in advocating for the collective interests of local participants and partners.
- The Ministry of Energy presently does not assess the official plans of Ontario's municipalities, despite these plans having direct implications for energy matters, notably electricity consumption. To ensure coherence,

¹³ NRCan energy end-use database and include residential, commercial, and a portion of personal transportation, 'light' industrial, and freight that occurs in communities but not between communities.

the mandate by the Ministry of Energy should align with the growth plans of municipalities, which are guided by the Provincial Policy Statement setting land use planning rules in Ontario.

- Collaborating with Indigenous landowners and initiatives is vital for achieving sustainable energy goals, fostering equitable partnerships, and for a unified energy transition approach.
- There is a common issue across many Ontario communities whereby there is a lack of understanding or alignment between the local governing body and the local electricity distribution company (LDC) despite many LDCs being wholly owned subsidiaries of their local government – greater engagement is needed for parties to come together and understand needs and align priorities
- Most communities are dealing with multiple, complex and urgent issues and are not able to dedicate the resources required to understand the evolution of the electricity system and how it will impact their objectives in the future.
- There is a risk of electricity system expansion increasing the rural-urban divide due to the fact that many renewable sources exist or are more easily accessible in rural communities, and that transmission infrastructure will need to be further built out in rural areas and on unceded Indigenous lands.
- There is lack of available, reliable and resilient electricity service to some rural, remote and Indigenous communities that will exacerbate these inequities and also increase the rural urban divide if not addressed.
- There are local projects underway that help support electrification, but knowledge gained through those project implementations are not being captured and shared for the benefit of similar projects in other regions.

IESO Role:

No regret actions for the IESO that are aligned with the Pathways to Decarbonization study include:

- There is a need for better understanding and dialogue between LDCs and local governments. The IESO should play a role in enabling this outcome by being available upon request to come to a municipality and present on provincial topics as part of LDC-led engagement initiatives.
- The IESO should continuously provide supporting materials and assist LDCs in communicating what is transpiring with the electricity grid, the challenges of expansion and what will be needed of them (specific to their region) for Ontario to be able to meet its energy and climate objectives. The IESO should request that communities respond to a call for information on what their communities would and would not support, allowing for flexibility in their responses.
- The IESO should establish a dedicated resource for rural and Indigenous communities on how to capitalize on the opportunities for local economic development and prosperity as a result of grid expansion.
- The IESO should become a champion and knowledge hub for local projects that support electrification so that they can more easily be replicated in other communities.

An additional action that the IESO should consider is:

The IESO should collaborate with the Ministry of Energy to review municipal official plans (OPs) from an energy needs perspective, ensuring alignment between Ontario's energy plan and approved community growth plans. Municipal OPs are integral to the Municipal Comprehensive Reviews, which derive from growth allocations provided by upper-tier authorities or the Province. These reviews guide phased build-outs necessary to achieve OP development objectives, in coordination with Municipal Infrastructure Planning for water, wastewater, and roads, all incorporated into the Municipal Long-Term Capital Budget. It is imperative that LDCs are aware and engaged with this comprehensive process to support sustainable community growth and energy demands.

Role of Others:

- LDCs and the governing bodies of the communities that they serve need to convene regularly with the specific objective of better understanding the functions and activities of one another as plans are implemented and continually updated.
- The Ministry of Municipal Affairs and Housing and the Ministry of Energy need to coordinate, share and understand the energy implications of Municipal Official Plans within the current timeframe and approval process. Additionally, while it is out of jurisdiction for the Provincial government to review the plans of Indigenous communities, doing so should be encouraged to further inform the Provincial Energy Plan.
- The Ministry of Municipal Affairs needs to expand the framework of Master Service Plans to include services delivered to communities by external service providers (i.e. energy & communications).
- Local governments, in collaboration with their LDCs, need to lead engagement with local businesses and constituents to build awareness of the challenges and opportunities of electricity system expansion and to gather important information for the LDC's on what solutions the community would and would not support. The IESO should strive to reconcile local inputs with overarching system needs.
- The Ontario Energy Board has a role to play in understanding communities, what their plans are with respect to energy end-use and where energy usage is going to increase as a result.
- With support from the Provincial government, communities implementing local projects that support electrification (e.g. EV charging infrastructure, building energy retrofit, thermal grids, etc.) need to document methodology, best practices and lessons learned throughout the process for efficient replicability.
- Communities need assistance from the Provincial government in attracting private sector capital investments and de-risking new financial tools or methodologies for the scale-up of local projects.
- With multiple, complex and urgent issues to address, communities need support to build local capacity to implement local energy projects and meaningfully engage with energy planning and forecasting mechanisms.
- Entities such as the Ministry of Energy, IESO, local LDCs and local communities need to be leveraging various organizations, such as the Association of Municipalities of Ontario (AMO), Rural Ontario Municipal Association (ROMA), etc. who can play an important role bridging information sharing.

Strategic Considerations and Committee Advice:

Coordination and Communication: Encourage and support cross-sectoral – municipal, Indigenous, industry, energy service provider and provincial – understanding, collaboration and coordination to foster a culture of innovation and learning, and to accelerate the implementation and replicability of projects.

Planning Alignment: Integrate CEEPs into the provincial energy planning process and expand Master Servicing Plans to include services delivered to communities by external service providers. Doing so will help ensure that the energy objectives and priorities of communities align with the broader provincial goals and enable a more cohesive and coordinated approach to electricity resource planning, capital forecasting and development.

Awareness and Education: Strengthen educational and knowledge-sharing campaigns and activities framed around the competing priorities of reliability, affordability and environment. Raise awareness of what is transpiring with the electricity grid, the challenges of expansion, and what will be needed of communities, and build mechanisms and capacity for community engagement. Of critical importance is an understanding by local political leadership on the constraints of the electricity system that may impact the ability to achieve local goals and projects.

Knowledge Sharing & Engagement: Establish a knowledge-sharing and engagement platform where communities can share experiences, best practices, and lessons learned from local energy projects and provide input into Provincial energy planning such as the IESO's Annual Planning Outlook process. This platform can serve as a valuable resource for communities looking to implement similar initiatives and for energy planning purposes.

2024 Challenge Statements – Community Alignment Chapters

Municipal Participation in the Energy Transition

SAC Members: Michael Di Lullo (lead), Tonja Leach, Scott McFadden, John Avdoulos, Amanda Klein, Paul Grod, Dave Landers, Annette Verschuren, Agnieszka Wloch

Definition of Community

Communities include groups of people who share common geography, characteristics or interests. We define community including First Nations and as non-Indigenous local government entities including regional, county and municipal governments. Community also broadly encompasses utility providers, economic and technology development agencies, a wide variety of other stakeholders, and most importantly the residents that call these areas home. Within each geographic community, sub-communities with specific economic, cultural, and service and environmental needs may exist.

Challenge Statement

Today's electricity system is undergoing a significant transformation thanks to new objectives of decarbonization, customer-centricity and equity, and resilience. These are additional to current objectives of reliability, affordability, and access. Communities are at the heart of this transformation, where changes in consumer behaviour and preferences as well as increases in municipal and industrial activities result in volatility in demand and supply.

Communities thus have a critical role to play in shaping the growth of Ontario's electricity sector. This could take various forms such as:

- supporting system planning in improving community objectives beyond the least-cost optimization
- integrating decarbonization and equity goals with local energy supply and demand forecasts
- building buy-in and raising awareness for sustained implementation of new electricity resources
- reducing the need for electricity capacity through improved energy efficiency measures
- implementing thermal networks by coordinating parties from various sectors
- establishing Community Energy and Emissions Plans (CEEPs) that set local and regional priorities that inform electricity resource planning
- taking ownership of the community's energy priorities, including by evaluating and implementing local distributed energy resource solutions
- supporting more efficient management and optimal utility of the transmission and distribution system and of bulk and new infrastructure investments
- providing data showing how costs and benefits such as access and reliability are distributed across the community, with particular focus on priority populations.

First Nations and local governments are vital partners and resources for communicating, planning and expanding the electricity grid to meet tomorrow's energy demands.

"Understanding the benefits and challenges of electrification is essential for municipalities to make informed decisions about policies, investments and partnership related to energy and transportation."

Supportive Facts and Rationale

Being responsible for over 65% of energy use and 60% of Ontario's greenhouse gas emissions, communities must have a seat at the table when discussing the province's electricity system. In a March 17, 2022, letter to all heads of council, the Ministry of Energy said that municipalities are "not only key but critical for any energy development" in your communities. (Energy is Everything, pg.2).

- First Nations and local governments control key elements of planning, including land use, transportation, building location and design, landfills, water and wastewater systems, and industry location and integration, all of which require energy and produce emissions. They are responsible for large electrification projects in transportation and infrastructure and are key players in energydependent economic development.
- First Nations and local governments are the level of government closest to individual Canadians, giving them the greatest ability to influence behaviour, ensure local interests are being met, and build the necessary and lasting support for aligned climate and energy policy and implementation.
- First Nations and local governments have the ability to significantly influence energy supply and demand locally, regionally, and provincially through CEEPs. CEEPs are tools that define community priorities around energy with a view to improving efficiency, reducing greenhouse gas emissions, and driving economic development.
- First Nations and local governments have a role to play in advocating for the collective interests of local participants and partners.
- First Nations and local governments are electricity rate payers for large public facilities.

Despite being well-positioned to support growth and development of the electricity grid, communities across the province face challenges in offering that support:

- There is often a lack of understanding or alignment between the local governing body and the local electricity distribution company (LDC) despite many LDCs being wholly owned subsidiaries of their local government.
- Most communities are dealing with multiple, complex and urgent issues and are not able to dedicate the resources required to understand the evolution of the electricity system and how it will impact their objectives in the future.
- There is a risk of electricity system expansion increasing the rural-urban divide as many renewable sources exist or are more easily accessible in rural communities. As a result, transmission infrastructure will need to be further built out in rural areas and on unceded Indigenous lands. Further, there is lack of available, reliable and resilient electricity service to some rural and remote communities that exacerbates these inequities.
- Although many local projects are underway that support electrification and local supply and demand management, the lessons learned from these projects are not being captured and shared for the benefit of similar projects in other regions.
- The Ministry of Energy and Electrification presently does not assess the official plans of Ontario's municipalities, to determine alignment and provincial energy goals and objectives despite these plans having direct implications for energy matters, notably electricity consumption.

IESO Role

Recognizing the Independent Electricity System Operator (IESO)'s specific mandate under the Electricity Act including the proposed amendments, the IESO also plays a critical role in supporting communities to achieve the outcomes of the Pathways to Decarbonization study along with the province's vision for Ontario's energy future as articulated in "Ontario's Affordable Energy Future: The Pressing Case for More Power" as well as the Integrated Energy Resource Plan. Specifically, the IESO has a role to play in working with others across the sector:

- in engaging in collaboration and dialogue with and among First Nations, local governments and local distribution companies (LDCs);
- in providing supporting materials to assist First Nations, local governments and LDCs at both the governance and staff level in undertaking the energy transition through toolkits, conferences and other speaking engagements;
- in acting as a conduit for cascading relevant community information to support local energy planning;
- in offering supporting materials in collaboration with others to assist in the energy transition, for a wide variety of communities and interest groups, including local residents; and
- in fostering alignment between government ministries to ensure alignment of community official plans, CEEPs, and other guiding documents with Provincial energy goals and objectives.

Role of Others

While the IESO has a leadership role, others also have a role to play in achieving the outcomes of the Pathways to Decarbonization study. These include:

- First Nations, local governments, and LDCs have a role to play in convening regularly with the specific objective of better understanding the functions and activities of one another as plans are implemented and continually updated. They should work together to foster better connections and communications to ensure effective implementation of energy initiatives.
- First Nations and local governments, in collaboration with their LDCs, have a role to play in leading engagement with local businesses and specific communities to build awareness of the challenges and opportunities of electricity system expansion and to gather valuable information for the LDCs on what solutions their communities will and will not support. Further, they have a role to play in ensuring the voices of priority populations such as low-income residents, climate vulnerable, and other disadvantaged groups are heard at the table.
- LDCs have a role to play in coordinating energy projects, fostering better alignment with communities and serving as a common point to the electricity system. To support First Nations and local governments in developing the necessary capacity, it is crucial to ensure a regional integrated planning approach that involves the active participation of energy utilities.
- The Ministry of Municipal Affairs and Housing and the Ministry of Energy and

Electrification have a role to play in coordinating, sharing and understanding the energy implications of Official Plans and other municipal servicing plans.

• The Ontario Energy Board (OEB) as part of their mandate to serve public interest has a role to play, in collaboration with the IESO, in understanding the costs and risks brought forth by a proponent on local solutions that could help meet part or all of the increased demand. This could take the form of regular updates to studies such as the integrated electricity-natural gas Achievable Potential Study which

serves to identify and quantify the technical, economic, and market potential for energy savings from demand-side resources in the province by technology, sector, customer segment, and region.

- The federal and provincial governments have roles to play in policy development and funding grants that enable grid modernization, enabling LDCs to empower local and community solutions that result in broader sector wide benefits.
- Associations such as the Association of Municipalities of Ontario (AMO) and the Rural Ontario Municipal Association (ROMA) have a role to play in bridging information sharing, education, awareness building, and seeking opportunities for collaboration on areas of mutual interest.

Strategic Considerations and Committee Advice

To ensure that communities can fully engage with and support Ontario's current energy transformation, we advise the IESO to consider the following strategies:

- Coordination and Communication Encourage and support cross-sectoral (First Nations, local government, LDCs, industry, and provincial government) understanding, collaboration and coordination to foster a culture of innovation and learning, and to accelerate the implementation and replicability of projects.
- **Planning Alignment** Ensure that the energy objectives and priorities of communities align with the broader provincial goals and enable a more cohesive and coordinated approach to electricity resource planning, capital forecasting and development.
- Awareness and Education Raise awareness of what is transpiring with the electricity grid, the challenges of expansion, and what will be needed of communities, and build mechanisms and capacity for community engagement. Of critical importance is an understanding by local political leadership on the constraints of the electricity system that may impact the ability to achieve local goals and projects.
- **Resource Building** Advocate on behalf of First Nations and local governments to ensure they have the capacity (funding, staffing) to engage in and implement energy plans. Support local economic development programs and invest in fair and equitable grid modernization.

Recommendations

Recommendation	Lead(s)
Strategy: Coordination and Communication	
Establish forums for knowledge-sharing and engagement where communities can share experiences, best practices, and lessons learned from local energy projects and provide input into Provincial energy planning such as the Integrated Energy Resource Plan, IESO's Annual Planning Outlook, IESO's regional planning, and IESO's resource adequacy processes. This platform can serve as a valuable resource for communities looking to implement similar initiatives and for energy planning purposes.	IESO Provincial Government
"Each Municipality and Utility need to support the energy plans of each other, ensuring that Municipalities are educated and aware of the Utility's roadmap and that Utilities are aware of the Municipality's strategies for decarbonization and energy development." (Energy is Everything pg. 4)	

Ensure that LDCs and communities implementing local projects that support beneficial electrification, enhanced management of the existing infrastructure (e.g., EV charging infrastructure, building energy efficiency retrofit, distributed storage, thermal grids, etc.), clean energy development as well as improved equitable access, affordability, and resilience are documenting methodology, best practices and lessons learned throughout the process for efficient replicability.	LDCs Provincial Government IESO
Continue to attend, where possible, community meetings, open houses and events (for example, council meetings), and present on provincial topics as part of LDC- led engagement initiatives, critical work underway to secure new supply resources, and the energy transition.	IESO LDCs
Similar to the Indigenous Energy Support Program, implement a "local champions" program whereby representatives of a community are trained to relay information about opportunities and challenges specific to that region, which can help guide support and programming tailored to local needs. This would be of particular interest to areas with priority populations (low-income residents, climate vulnerable groups, etc.).	IESO
Provide training to LDCs of all sizes and capabilities with detailed use-cases on developing longer-term load forecasts and submitting their distribution rate applications that account for local solutions, particularly for the cases where the generation can be co-located with the load.	OEB
Provide more granular electricity pricing, such as locational or distribution locational marginal pricing, as well as locationally guided resilience values (as applicable), which will better guide the value of local electricity resources and solutions and enhance the management of the electricity system as a whole.	IESO OEB
Lead the development of an open-access distribution network akin to the open- access principles that guide bulk level transactions at the transmission level, which would serve to guide distribution-level markets for competitive procurement of local solutions in a transparent manner.	OEB IESO
Strategy: Planning Alignment	
Develop systems that encourage a regional alignment in utility and infrastructure planning (encompassing water, natural gas, electricity, transit, and housing), explore opportunities for integrated and localized distribution system plans that account for anticipated new large loads, enabling effective decision-making informed by municipal community energy plans and regional strategies and supporting the province's clean economy for all Ontarians.	LDCs
Integrate CEEPs into the provincial energy demand forecasting and resource adequacy planning process.	Provincial Government IESO
Collaborate with the Ministry of Energy and Electrification to review official plans from an energy needs perspective, ensuring alignment between Ontario's integrated energy resource plan, a new Ontario energy roadmap (as recommended by the Canada Electricity Advisory Council in their report, "Powering Canada: A blueprint for success" (May 2024)) approved community growth plans as	Ministry of Energy and Electrification IESO LDCs

well as distribution and transmission planning and IESO's demand forecast and procurement processes.	
Coordinate, share and understand the energy implications of Official Plans within the current timeframe and approval process, serving as an input to the province's Integrated Energy Plan to support healthy, diverse populations and communities.	Ministry of Municipal Affairs and Housing Ministry of Energy and Electrification
Expand the framework of master service plans to include services delivered to communities by external service providers (i.e., energy & communications)	Ministry of Municipal Affairs and Housing
Strategy: Awareness and Education	
Strengthen (develop) and continue to explore educational and knowledge sharing campaigns and activities to guide local energy procurement in aligning with the province's integrated energy resource plan and IESO's planning processes, including through municipal guidance, support and capacity building, framed around the priorities of reliability, affordability and environment	Ministry of Energy and Electrification IESO
Continue to provide information and support for First Nations and local governments regarding the potential benefits of procuring and integrating distributed energy resources to advance local energy priorities and align with the province's supply and flexibility needs.	Ministry of Energy and Electrification OEB IESO
Provide forums such as IESO's regional and bulk planning process to share supporting materials and assist LDCs in communicating what is transpiring with the electricity grid, the challenges of expansion and what will be needed of them (specific to their region) with sufficient lead time for community driven solutions to enable Ontario to meet its energy and climate objectives.	IESO Ministry of Energy and Electrification OEB
Request that local governments respond to a call for information on what their communities would and would not support, allowing for flexibility in their responses.	IESO First Nations Local Governments
Work towards strengthening meaningful relationships with First Nation communities and organizations and seeking early engagement and regular dialogue on regional and territorial energy interests, underpinned by economic empowerment, capacity support and relationship agreements.	
"Improving data availability and transparency at the regional and local levels is vital for effective planning. Accessible information on energy consumption, renewable energy potential, grid infrastructure, market dispatches of distribution-connected assets, and energy efficiency measures supports regional and local planning efforts, enabling informed decision-making by the LDC." (EPC EETP Submission, pg. 4)	

Co-host public energy literacy workshops that are responsive to customer demands who wish to be more empowered in helping to shape a more customer-centric and equitable electricity system transformation.	Ontario Ministry of Energy and Electrification LDCs IESO
Engage with local businesses and residents to build awareness of the challenges and opportunities of electricity system expansion and to gather information for the LDCs and the IESO on what solutions the community would and would not support as well as how costs and benefits such as access and reliability are distributed across communities, with particular focus on priority populations. LDCs should strive to reconcile local inputs with distribution system planning and rate applications. The IESO should strive to reconcile local inputs with overarching regional planning and resource adequacy needs as well as to help inform the design of Demand Side Management programming. <i>"Active engagement with local stakeholders, including municipalities, communities, Indigenous groups, businesses, and residents, is paramount. By integrating their knowledge, perspectives, and aspirations, energy plans can be tailored to reflect the specific needs and priorities of local communities. Encouraging the formulation and implementation of community energy plans empowers communities to actively shape their energy future, identifying opportunities for energy efficiency, renewable energy generation, and localized energy systems." (EPC EETP Submission, pg. 4)</i>	First Nations Local Governments LDCs IESO
Strategy: Resource Building	
Provide capacity building for local and regional trade allies such as best practices on installation of energy efficient and clean technologies through Demand Side Management or other initiatives, that support beneficial electrification, equitable and reliable access, resilience, and decarbonization goals.	IESO
Assist communities in attracting private sector capital investments and derisking new financial tools or methodologies for the scale-up of local projects.	Provincial Government
Invest in grid modernization to empower local and community solutions while resulting in broader sector wide benefits. This includes implementing the necessary tools and technology at the IESO, OEB, and LDCs to facilitate the participation distributed energy resources and other "grid edge" technologies	Federal Government Provincial Government
"Without a strong influence on and connection to system planning to ensure local objectives, Municipalities are at risk of failure to meet targets or compete in a centrally planned energy environment. In fact, municipalities have already lost billions of dollars in economic development due to a lack of electricity capacity." (EPC EETP Submission, pg. 8)	

Continue undertaking work to drive broader participation of distributed energy OEB resources and distributed energy resource aggregations to participate in the IESO's administered markets, with the goal of enhancing the use of the existing transmission and distribution infrastructure and empowering local solutions.	DEB Provincial Government ESO
Develop governance models and protocols for coordination of resource planning that enables the LDCs that are capable to procure local supply through distribution level markets that are informed by distribution level reliability and closely	eso Deb

Indigenous Participation in the Energy Transition

SAC Members: Paul Norris (lead), Mark Passi, Kim Lauritsen, Bala Gnanam, Frank Kallonen, Ed Gilbert, Chief Joe Miskokomon, Heidi Bredenholler-Prasad, Monica Gattinger

Challenge Statement

Economic reconciliation with Indigenous Nations and communities is a crucial societal priority and a complex long-term process. Ontario's energy system transformation provides a significant opportunity to create specific and targeted programs and policies that can substantially contribute to advancing Indigenous participation and equitable access to energy while simultaneously advancing electrification and decarbonization.

Supportive Facts and Rationale:

- Policy makers, system planners and project proponents must recognize that Indigenous Nations and communities approach their participation in Ontario's electricity sector from both an economic and a "rights" based perspective, with such rights being enshrined in Section 35 of Canada's Constitution.
- Ontario is home to 23% of all Indigenous peoples in Canada and, with the exception of immigration, Indigenous youth are the fastest growing demographic in the country.
- There are 133 First Nations communities located across Ontario, representing at least seven (7) major cultural and linguistic groups. Each of these communities is unique.
- T&C Recommendation 92 calls upon the corporate sector in Canada to adopt the United Nations Declaration on the Rights of Indigenous Peoples as a reconciliation framework and to apply its principles, norms, and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources.
- For more than a century, Indigenous Nations and communities were excluded from and/or negatively impacted by electricity policies, plans, programs and projects.
- Many Indigenous Nations and communities today still have inequitable access to energy and electricity benefits and affordability relative to the general population.
- Financing for Indigenous-owned infrastructure remains a significant challenge. Indigenous communities seeking equity ownership in new clean energy projects, such as transmission lines or renewable energy, face barriers to accessing competitively priced capital.
- More recently there has been a gradual shift toward beginning to include Indigenous Nations and communities in decision-making and partnerships within Ontario's electricity sector.
- Over the last two years, IESO initiatives and government policy have begun to support this shift through a number of initiatives designed to enhance Indigenous participation including;
 - Electricity procurements which have resulted in the majority of projects awarded contracts having Indigenous equity participation (e.g. ELT1);
 - Improvements to the Indigenous Energy Support Program which since its inception has supported over 170 Indigenous communities and organizations with \$71 million in funding (In 2023, the IESO approved 93 applications totaling \$12.14 million in funding);
 - The establishment of 58 full time Community Energy Champion positions in Indigenous Nations, communities and organizations; and
 - The expansion of the IESO annual First Nations Energy Symposium, with approximately 350 participants in 2024.

• This momentum and shift can be further accelerated with targeted and "by design" initiatives that enable and support Indigenous Nation and community participation.

IESO Role

Immediate actions

- IESO should sustain and expand its engagement of Indigenous Nations and communities in electricity system planning and policies (e.g. Annual Symposium) and include proponents in this Indigenous-led event.
- IESO should sustain and expand the role of Indigenous Community Champions and the number of Nations and communities with Champions to improve engagement and education at a community level.
- IESO should expand the eligibility criteria within the Indigenous Energy Support Program to include funding and capacity building to enable transmission and generation project-level participation and partnerships.
- IESO should sustain and improve, based on input from Indigenous Nations and communities and their project partners, procurement designs which enable and incent business-based economic benefits to Indigenous Nations and communities at a project level.
- IESO should modify the SAC terms of reference to create an explicit category of membership for Indigenous Nations and communities.

Additional short-term actions

- IESO should work with SAC to receive input supporting the development of a more sustainable framework for Indigenous Nations Capacity Funding that is long-term and will allow communities to actively engage early in what will be a generational build-out of Ontario's electricity system in a manner that reflects engagement with rightsholders, collaboration and meaningful economic participation.
- As a facilitator, IESO should work with other organizations to develop a simple and efficient "Indigenous Project Portal", providing a one-stop window for proponents and Indigenous Nations and communities explaining and providing easy access to federal, provincial, IESO and other (e.g. Association) resources and programs which support Indigenous participation

(e.g. CIB, Aboriginal Loan Guarantee, Indigenous Energy Support Program) for both Indigenous Nations and communities and their partners.

- IESO should formalize an annual report back to the SAC on their activities and investments designed to advance Indigenous participation in the electricity sector including:
 - Key outcomes and learnings from the annual First Nations Energy Symposium;
 - Targets, investments and progress made through the Indigenous Energy Support Program; and
 - \circ $\;$ Outcomes of procurements with respect to Indigenous equity participation.

Role of Others

Short Term

• Indigenous Nations and communities should inform and influence programs, policies and procurements that advance economic reconciliation and energy equity through Ontario's energy transformation.

- The Ministry of Energy and Electrification should respond to the IESO on its advice on the investment priorities for the Future Clean Energy Fund by prioritizing grants for Indigenous Nation and community capacity building and create a mechanism for Indigenous-led and partnered projects to recover a portion of reasonable pre-development costs.
- The Ministry of Energy should embed Indigenous Board representation on the IESO in enabling legislation.
- The provincial Aboriginal Loan guarantee program should be expanded to include gas-fired generation in alignment with Government's `all-of-the-above" approach to energy sourcing.
- Provincial regulatory agencies (e.g. MNRF, MECP) should ensure that their policies and processes do not conflict with or duplicate IESO's procurement objectives to advance economic benefits for Indigenous Nations and communities and streamline development for projects led by or in partnership with Indigenous Nations and communities.
- Investors should sustain and expand their partnerships with Indigenous Nations and communities for mutual benefit.
- The federal government should continue and expand its support of Indigenous-led projects through the Canada Infrastructure Bank, Investment Tax Credits and other mechanisms.

Strategic Considerations and Committee Advice

- The Committee is of the view that finalizing and implementing this Challenge Statement will require the input and advice of a range of Indigenous Nations and communities and recommends that the IESO build on its growing relationship with Indigenous Nations and communities to seek such input and advice in 2025. This could be achieved through opportunities within existing Indigenous structures and processes such as the Chiefs of Ontario's Economic Development Table.
- The Committee and its members are willing to support the IESO in its outreach to and engagement of Indigenous Nations, communities and organizations to advance finalization of this Challenge Statement.