

Ontario's Energy Framework **Community Perspective**

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Agenda

- Overview of the Energy Sector and the Independent Electricity System Operator
- Energy Consumption and Demand Forecasts
- IESO Strategic Advisory Committee
- Introduction of a New Challenge Statement – Community Perspective
- Q/A



Overview of Energy Sector

- **Government:** Ontario's Ministry of Energy shapes energy policies through legislation and regulations, steering the province's energy sector.
- **Ontario Energy Board:** Regulates electricity and natural gas distribution, pricing, and services, ensuring fair practices, consumer protection, and reliable energy delivery.
- **Independent Electricity System Operator:** Oversees the management of the power system across transmission lines, linking generators, transmitters, utilities and industrial users
- **Natural Gas:** Integral to Ontario's energy system, facilitating heating, industrial processes, and electricity generation.
- **Renewable Energy:** sustainable alternatives that aim to reduce reliance on fossil fuels, promote environmental conservation, and diversify the province's energy mix.



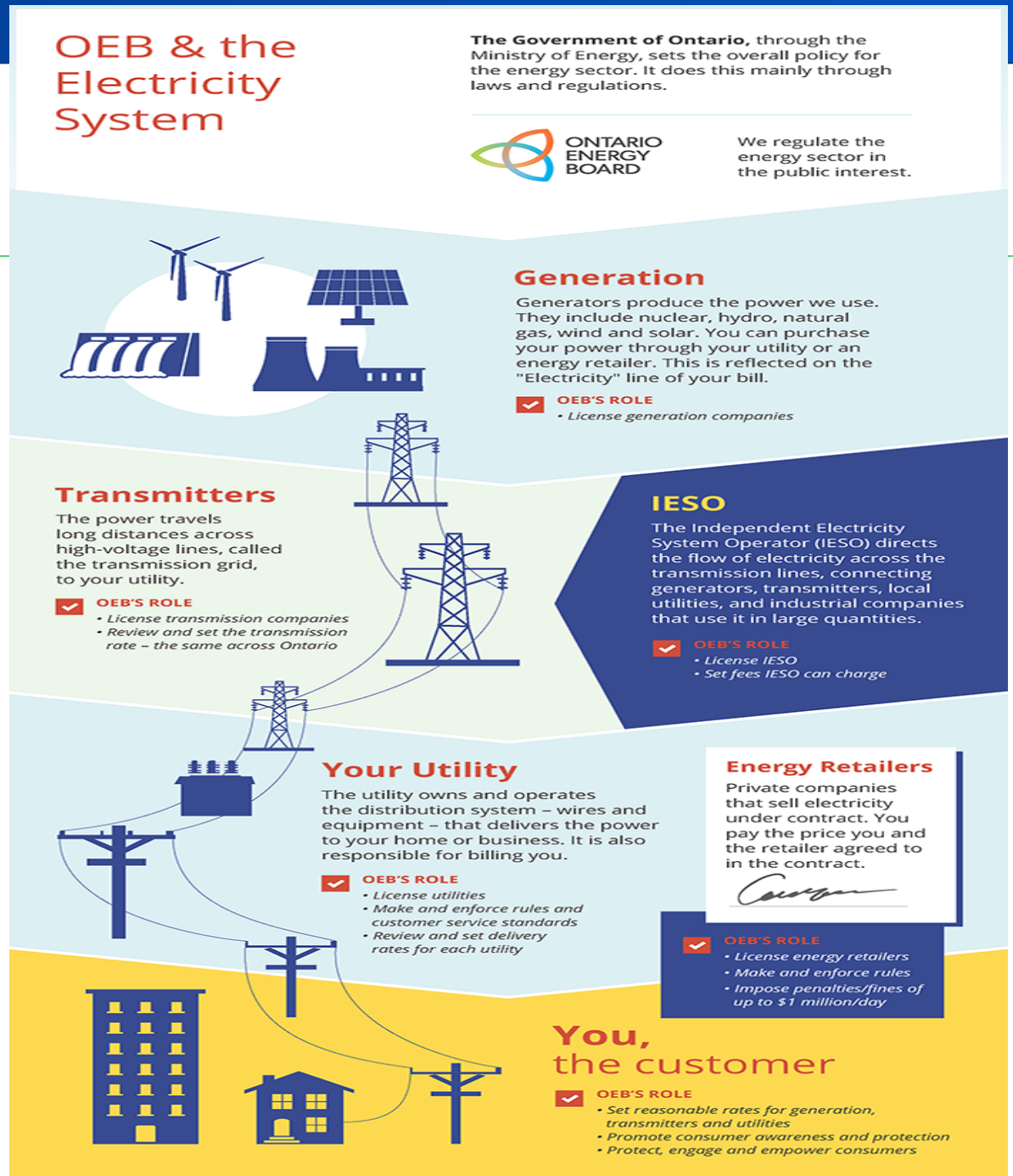
Energy Use in Ontario

- **Energy Demand:**
 - Electricity – 21%
 - Natural Gas – 39%
 - Refined Petroleum – 36%
- **Evolution:**
 - Electricity is projected to **double** by 2050
 - Natural gas and refined petroleum will continue to play a role



Key Players in Electricity

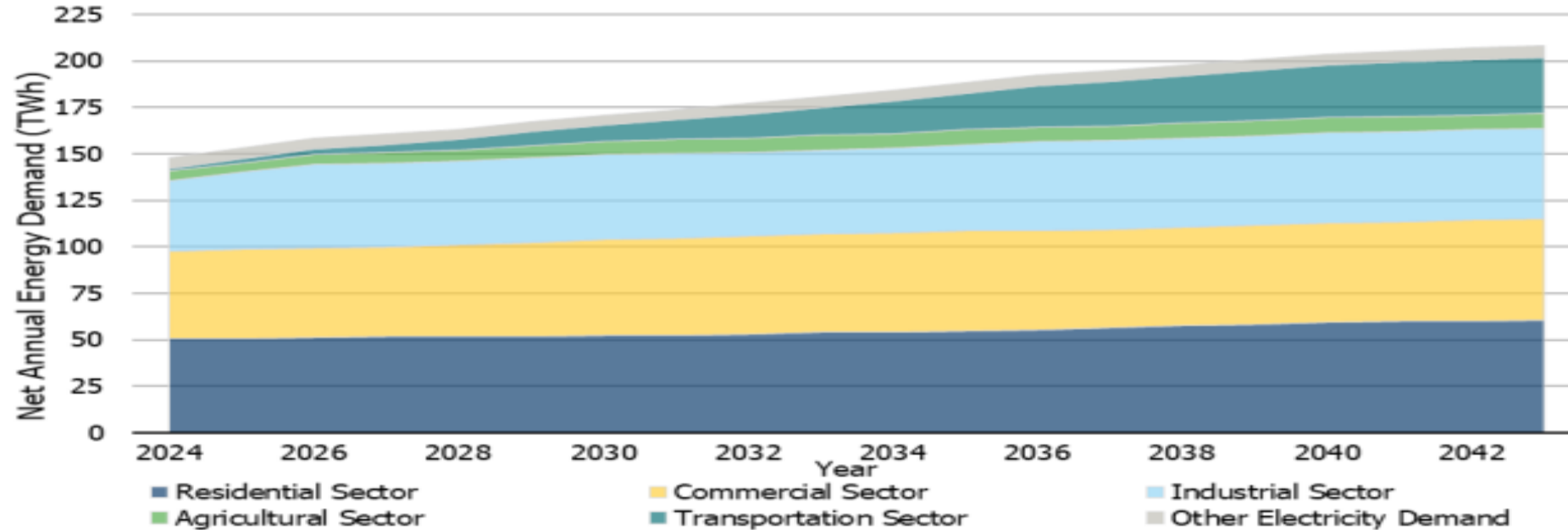
- Ontario Energy Board
- IESO
- Utility Companies – Hydro One
- Municipalities and Indigenous Communities
- Ratepayers/Customers





Future of Electricity Demand in Ontario

Figure 1 | Annual Energy Demand



- The IESO 2022 forecasts show a steady average growth in electricity demand of about 1.9 percent a year.
 - Published by IESO on December 28, 2022: [2022-Annual-Planning-Outlook.pdf](#)



Electricity Challenges on the Horizon

- The province's rapidly growing population, electrifying industry, and aging nuclear reactors will shift the province's electricity grid from decades of comfortable surplus to critical shortages in just a few years. By 2026, the province's grid could strain to meet demand during peak hours; by 2030 soaring demand could outpace generation capacity
 - Published by RBC Capital Markets, June 26, 2023



Ontario Electricity System Capacity

- According to the Independent Electricity System Operator's (IESO) Pathways to Decarbonization (P2D) report high-growth scenario, in less than 30 years Ontario could need more than double its electricity generating capacity, from 42,000 megawatts (MW) today to 88,000 MW in 2050
 - Published by Ministry of Energy – Ontario's Plan for a Clean Energy Future, 2023: <https://www.ontario.ca/page/powering-ontarios-growth>



Securing New Energy Supply

- The three primary factors impacting Ontario's future supply and demand are:
 - **Decommissioning:** Power plants have a finite lifespan and the Pickering nuclear generating station is scheduled to come out of service by 2025
 - **Refurbishments:** Renovations and improvements are currently underway for several power plants in Ontario, reducing their ability to produce electricity while the work is taking place
 - **Increased Demand:** The switch to electric transportation and production processes as well as economic growth in the agricultural greenhouse and electric vehicle manufacturing sectors are increasing Ontario's overall electricity demand
 - Published by IESO: <https://www.ieso.ca/en/Learn/The-Evolving-Grid/Securing-New-Energy-Supply>



Transition to clean energy: key steps

- **Energy Efficiency Focus:** To transition towards cleaner energy, prioritize reducing energy demand through enhanced efficiency across all sectors.
- **Utilizing Current Infrastructure:** Leverage existing assets like nuclear and natural gas, add renewable natural gas and hydrogen blends, and promote non-competitive transit systems alongside personal vehicles. Integrate renewables, small modular reactors.
- **Optimized Land Use:** Promote sustainable land management aligned with cleaner energy goals, revise land use practices to accommodate renewable energy installations, and optimize energy production from available spaces.
- **Waste-to-Energy Opportunities:** Harness waste as an energy source: thermal waste from sewers and local industries, renewable natural gas from landfills, and energy derived from forestry and agriculture waste. This approach minimizes the need for extensive electricity system expansion.
- **New Infrastructure and Economic Opportunities:** Accommodate new infrastructure for generation, transmission, and distribution, fostering business models that create local economic growth opportunities.



IESO Strategic Advisory Committee

- The Strategic Advisory Committee provides appointed stakeholder representatives with the opportunity to present advice and recommendations on market development, conservation and planning decisions directly to the IESO's Board of Directors and Leadership Team
- The composition of SAC is diverse, with thought leadership member representation from consumers, generators, distributors/transmitters, related businesses/services and Ontario communities
 - Published by IESO: <https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Strategic-Advisory-Committee/Meetings-and-Materials>



SAC Mandate – Challenge Statements

- In 2022, members of the IESO's Strategic Advisory Committee (SAC) formed working groups to address challenges and opportunities within key areas of interest and importance to Ontario's electricity sector.
- Four Challenge Statements emerged that were presented to the Board of Directors and Executive Leadership Team and these have influenced important documents such as the IESO's Annual Planning Outlook and the Pathways to Decarbonization Reports
- Link to 2022 Challenge Statements:
<https://www.ieso.ca/en/Sector-Participants/Engagement-Initiatives/Strategic-Advisory-Committee/Meetings-and-Materials>



2023 Addition of Community Perspective

- In 2023, the community representatives of the SAC came forward and worked collaboratively to create a new and fifth challenge statement with a community lens
- Although not yet shared with the IESO Board of Directors, the Community Statement has received general support from the SAC membership's advice and collaboration



Why a Community Challenge Statement?

- DYK: Communities in Ontario are responsible for over 65% of energy use and 60% of Ontario's greenhouse gas emissions
- Local Governments control urban planning – key policy decisions such as land use, transportation, water and wastewater systems which all requires (reliable) energy supply
- Being closest to the people, local governments and indigenous communities have the ability to significantly influence energy supply and demand
- For these reasons, a new Challenge Statement emerged that put the spotlight on community which acknowledges us as having a key role to play in the energy sector and transition



Key Highlights of the Community Challenge Statement?

- Recognize that all communities play a critical role in enabling the growth of Ontario's electricity sector
- Decision making in the electricity sector should take into consideration growth needs and to bridge this connection – communications and dialogue are essential prior to moving forward with large projects
- There is a lack of understanding/alignment between local governments and the local distribution companies. More engagement is needed to support one another in growing community
- The rural-urban divide is acknowledged as all areas deserve the right to sustainable infrastructure such as electricity
- Cross-communication of local projects will help benefit other communities that are growing



Role of Others and Impacts on the Community Statement

- IESO
 - The majority of municipalities do not have dedicated resources to monitor and follow the changing landscape in the electricity sector. It is important that the IESO continue to be proactive and provide information (e.g. Ongoing stakeholder engagements, Pathways to Decarbonization, on IESO-led initiatives that impact communities)
- LDCs
 - Need to convene more regularly with the specific objective to better understand the activities of one another
- MMAH and MOE
 - Greater coordination between Ministries so not operating in a silo – where applicable, review growth plans to inform the Provincial Energy Plan
- OEB
 - Understanding consumer demand in communities and where energy is most sought



Strategic Consideration – Summary

- Coordination and Communication
 - Encourage communication involving all players to foster a culture of innovation and learning and to accelerate the implementation of projects
- Planning Alignment
 - Integrate Community Energy and Emission Plans into the provincial planning process and expand Master Servicing Plans to include services delivered by external service providers such as our LDCs



Strategic Consideration – Summary

- 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
- Knowledge Sharing and 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

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