

# UNDERSTANDING THE INTERSECTION BETWEEN ENERGY POLICY & MUNICIPAL GOVERNMENTS

AMO WEBINAR ON REGIONAL  
PLANNING IN ONTARIO

# THANK YOU FOR JOINING

- We have over 60 participants registered for today
- Running in webinar format – everyone is automatically muted
- For Technical Difficulty: Use the Chat button
- For Question/Answer: Use the Q & A button, or “raise hand” to be unmuted by panelists
- Slides will be shared with participants after the presentation
- Presentation is being recorded and will be posted online

# TODAY'S OBJECTIVES

**Part 1:** Inform Municipalities about AMO's Role in Energy Policy & Why Municipalities Should Care

**Part 2:** Educate Municipalities about the Regional Energy Planning Process

**Part 3:** Present Different Perspectives on Regional Energy Planning & Question/Answer Period

**Part 4:** Key Takeaways & Resources to Learn More

# AMO'S ROLE IN ENERGY POLICY

## Background

- Energy policy in Ontario covers electricity generation, transmission and conservation, as well as energy facilities, such as those for wind, solar, and renewable natural gas.
- The [Independent Electricity System Operator](#) (IESO) manages the power system to ensure the lights stay on (i.e., supply meets demand) and the [Ontario Energy Board](#) (OEB) regulates the electricity & natural gas sectors.
- Both the IESO and OEB receive direction from the [Ontario Ministry of Energy](#).

## AMO's 2023 Strategic Objectives re: Energy

- Better integration of [infrastructure](#) investment, [climate change](#), [energy](#) and [social policy](#)
- Continue to advance [Municipal-Indigenous relations](#) in Ontario
- Advance [LAS's](#) initiatives that support AMO's work on green economy (renewable natural gas)

## AMO Provides the Municipal Perspective Through:

- The Ontario Energy Board's [Regional Planning Process Advisory Group](#)
- The Ontario Energy Board's [Natural Gas Integrated Resource Planning Working Group](#)
- The Province's [Electrification and Energy Transition Panel](#)

# AMO'S ADVOCACY ROLE IN ENERGY

Some examples of AMO's advocacy in energy:

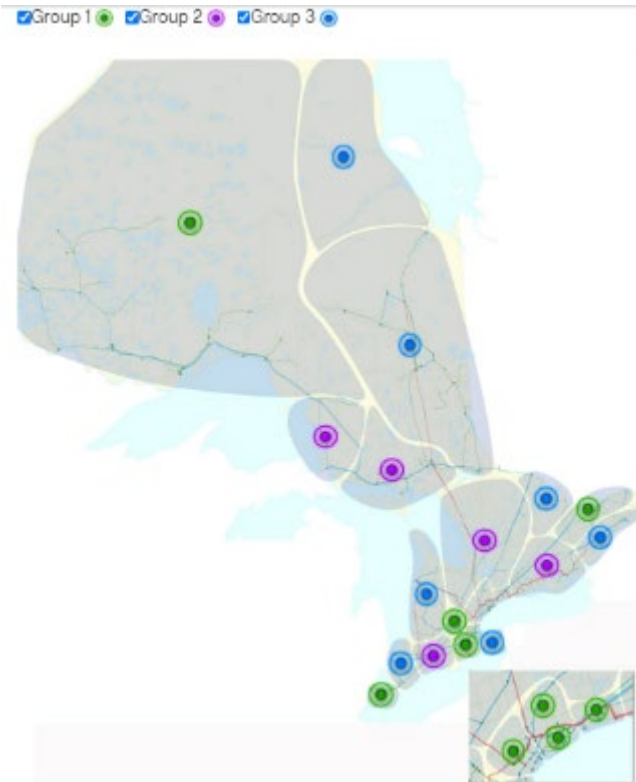
- Ensure that Local Distribution Companies (LDCs) remain solvent.
- Push for more incentives to municipal governments, local businesses, and citizens to increase participation in energy conservation programs and practices (e.g., net zero construction).
- Support Municipal Energy Plans/Community Energy Plans to promote green energy.
- Support the expansion of programs that provide electricity data to consumers.
- Wherever locally supported, encourage distributed generation projects to meet local energy needs. Municipal ownership of energy generation and distribution reduces the need to transmit power long distances, creates local jobs, and contributes to a stable energy system.
- Increase municipal participation and representation in regional energy planning processes to ensure an adequate energy supply for economic and residential growth.

# WHY MUNICIPALITIES SHOULD CARE

- Municipal governments are increasingly involved in energy policy. As large consumers of energy for public facilities, energy prices have an impact on municipal budgets.
- Energy policies also impact large industrial consumers and residential customers, both critical ratepayers in the community as well as sources for increased economic development activity.
- Residents are calling for municipal governments to take action against climate change by decarbonizing the energy supply and reducing energy consumption.
- Municipal governments must have a voice in energy policy to ensure that these economic, environmental, and social concerns are adequately considered.

# REGIONAL PLANNING IS HAPPENING

- There is a considerable opportunity for municipalities to be involved in regional planning processes happening through these three channels:





# Regional Electricity Planning in Ontario

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Association of Municipalities of Ontario

Presenter: Tracy Garner

April 17, 2023



# Agenda

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**01** The OEB: Who we are & what we do

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**02** Introduction to Regional Planning: What it is & How it has Evolved

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**03** Regional Planning Process Review: Recommendations & Improvements

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**04** Focus: RPPAG Recommendation - Holistic Coordination of Planning Processes

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**05** Summary & Questions

# The OEB: Who we are and what we do

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**The OEB is the independent regulator of Ontario's electricity and natural gas sectors. We make decisions and rules to ensure that consumers are treated fairly and that the energy sector is reliable and sustainable. We:**

- Review and approve the delivery rates energy utilities can charge and changes to corporate structures (i.e. mergers)
- License electricity companies and natural gas marketers
- Monitor the financial and operational performance of utilities and the wholesale electricity market
- Review and approve major new electricity transmission lines and natural gas pipelines
- Ensure licensed companies follow rules that protect consumers and the energy sector operates in a way that is fair, transparent and accountable.
- Support policy objectives of the Ontario government



# Introduction to Regional Planning

# What is Regional Planning?

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- A multi-party planning process for solving electricity supply problems
- Local distribution companies, transmitters, and the IESO are the core participants
- A multi-stage process, that considers wires (transmission and distribution) and non-wires (demand and supply resource) solutions as part of integrated planning
- Includes stakeholder and community engagement activities
- Aims to optimize and increase the cost effectiveness of electricity system investments
- Has existed in Ontario for decades, initially as an ad hoc process, but more recently has been formalized
- Is a collaborative effort both in terms of the process evolution and the planning outcomes

# How was the regional planning process formalized?

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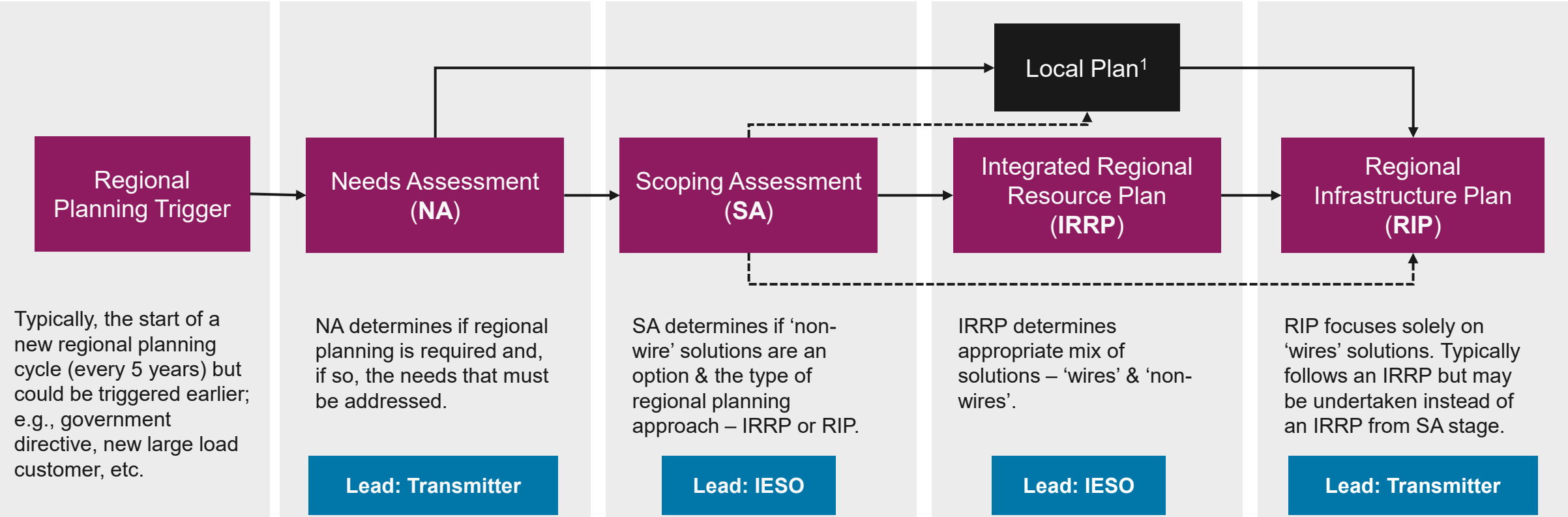
## 2012

- OEB convenes the Planning Process Working Group (PPWG) of industry participants to develop a more structured and transparent regional planning process to better ensure optimal investments are made.

## 2014

- In May, the PPWG provides its final report to the OEB, identifying 21 defined electricity planning regions
- The OEB endorsed the PPWG's report and then formalized the process through changes to its Codes (for transmitters and distributors) and the IESO's licence setting out their regional planning process obligations (e.g., timelines, information sharing requirements, etc.).

# Current Regional Planning Process in Ontario



<sup>1</sup> Local Planning (LP) is used if a 'wires' solution is needed but regional planning / coordination is not required; e.g., only one LDC has a need (*transmitter-led*). Typically determined during NA stage to use LP but sometimes during SA stage. Completed LPs in a region are included in the RIP.



# Regional Planning Process Review

# How has the process been reviewed?

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## 2016

- The first cycle of the Regional Planning Process was completed for all 21 regions

## 2017 - 2018

- The IESO receives direction from the Minister of Energy to review and report on the regional planning process and provide recommendations
- The OEB receives similar direction from the Minister to undertake a review including consideration of recommendations from the IESO
- The IESO establishes an Advisory Group to assist in its review

## 2021

- The IESO issues its final report in February consisting of a list of high-level recommendations, and identifying which of the IESO or OEB should take the lead on implementing the recommendation, based on their respective mandates.

***Meanwhile, regional planning activities continued across Ontario***



# OEB's Regional Planning Process Review

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## 2020

- In December, the [OEB initiates a consultation process](#) to undertake its review of the regional planning process.
  - The primary purpose of this review was to improve the efficiency and effectiveness of the process, including assessment of February 2021 recommendations.
  - A Regional Planning Process Advisory Group (RPPAG) assisted the OEB with this review: comprised of LDCs, Hydro One, the IESO and stakeholders representing municipalities, distributed energy resource (DER) / non-wire developers, consumers and a natural gas utility (see Appendix for list of members).

## 2021

- In December, the RPPAG provides its [Report to the OEB](#), including recommendations intended to improve the regional planning process.

# Overview of RPPAG Recommendations

Clarify Scope between IRRP & RIP on Wires investments	OEB	RPPAG
Improve Consideration of Cost Responsibility through Better Understanding of Rules	OEB	
Better Address End-of-Life (EOL) Asset Replacement through Sharing of Information	OEB	RPPAG
Provide General Education on Regional Planning Process	OEB	RPPAG
Achieve Holistic Coordination of Planning Processes	OEB	RPPAG
Provide Open Stakeholder Access to (IESO) Planning Information	OEB	
Propose Changes to Conservation Demand Management Guidelines to include Transmission Deferral	OEB	
Establish Criteria to Address Concerns related to Option to Bypass IRRP Process		RPPAG
Create Load Forecast Guideline for Ontario to Standardize & Streamline		RPPAG

Note: Many of the recommendations on this slide are essentially themes and have multiple recommendations, with references to the OEB and RPPAG identifying the leads on implementing.



Holistic  
Coordination  
of Planning  
Processes

# Improving Coordination with Regional Planning

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## **RPPAG Recommendation: Achieve Holistic Coordination of Planning Processes**

Specific recommendations related to municipal planning include:

- Educate municipalities of importance of providing information in their municipal energy plan (MEP) that indicates how MEP goals will be achieved, with a focus on aspirational goals (e.g., net zero) which LDCs cannot translate into load forecasts used in the regional planning process without that necessary information.
- Produce a brief document to be provided to municipalities that includes a list of the specific information LDCs need from municipalities to improve the accuracy of their load forecasts. (Commonly referred to as “[Municipal Information Document](#)”)

# Improving Coordination with Regional Planning - 2

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## **RPPAG Recommendation: Achieve Holistic Coordination of Planning Processes**

Other recommendations to achieve holistic coordination with regional planning relate to:

- Natural Gas Planning
- Electricity Bulk Planning
- Electricity Distribution Planning



# Summary

# Why is regional planning important?

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For the past ten years, the formalized regional planning process has provided a forum for utilities and industry participants to work together to address electricity problems in an integrated and efficient manner.

This has resulted in optimized investments and increased involvement by stakeholders and communities in regional electricity planning.

Recommendations are being implemented that will:

- Build linkages between regional electricity planning and other types of planning
- Improve planning inputs, and
- Continue to derive value from this established process.

# Question & Answers

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# Appendix: RPPAG Membership

Organization	Type of Representative
School Energy Coalition (SEC)	Consumer
Common Voice Northwest	Consumer
Alectra Utilities	Distributor
Elexicon Energy	Distributor
London Hydro	Distributor
Toronto Hydro	Distributor
Hydro One	Transmitter
Canadian Niagara Power, Algoma Power	Distributor and Transmitter
Association of Power Producers of Ontario (APPrO)	Generator
Association of Municipalities of Ontario (AMO)	Municipalities
Pollution Probe	Municipalities
Non-Wires Solution Group (NWSG)	Non-Wires (i.e., DER)
Versorium Energy	Distributed Energy Resources (DER)
Independent Electricity System Operator (IESO)	System Operator
Enbridge Gas	Natural Gas Distributor

**APRIL 17, 2023**

# Regional Electricity Planning in Ontario

Max Wei, Manager, Transmission Planning, IESO

Rouselle Gratela, Supervisor, Regional & Community Engagement, IESO

Ajay Garg, Manager, Transmission Planning, Hydro One

Sachna Bobal, Senior Engineer, Transmission Planning, Hydro One



# Ontario's Electricity Sector

## Connecting Today. Powering Tomorrow.

The IESO works at the heart of Ontario's power system, ensuring that electricity is available where and when it is needed.

We oversee and evolve the electricity market, driving competition to maintain affordability.

We manage the grid in real-time, balancing supply and demand and directing the flow of electricity.



We plan for the future, forecasting demand and securing the resources required to meet Ontario's energy needs.



### We work with:

**Generators** produce large amounts of electricity to meet Ontario's needs. Ontario has one of the cleanest energy supplies in the world.

→ **Transmitters** transport electricity over long distances from power plants to communities.

→ **Local Distribution Companies** (the "local hydro company") deliver electricity directly to homes and businesses in your community.

→ **Energy consumers** and the communities they live in count on electricity being available.

# About the IESO



Reliably operate Ontario's province-wide electricity system on a 24/7 basis



Support innovation and emerging technologies



Ensure affordability through electricity market efficiencies



**Work closely with communities to explore sustainable options**

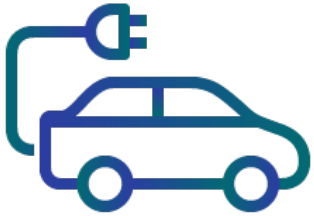


**Plan for Ontario's future energy needs**

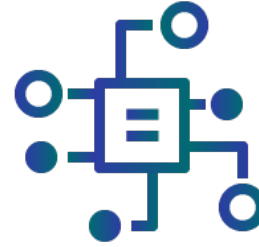


Enable province-wide energy conservation

# Municipal Input Integral to Electricity Discussions



Importance of climate goals



Exploring alternatives to traditional infrastructure and technologies



Working to attract commercial, industrial business development



Accommodating emerging expansion plans in the industrial sector



Tools for businesses to earn revenue, reduce demand and save money



Community energy plans helping to outline goals for the future

# Electricity Planning in Ontario



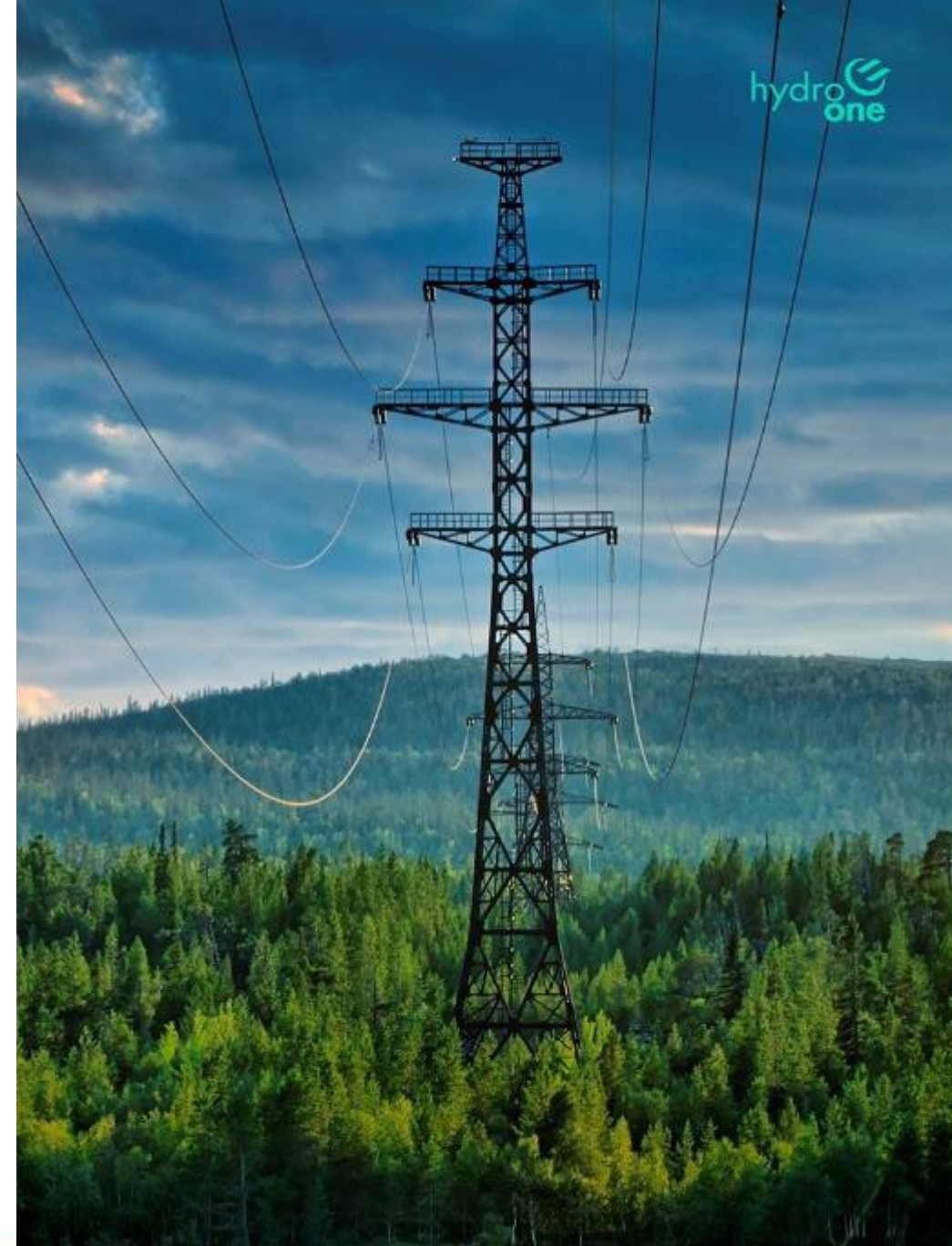
# Engaging with Municipalities to Meet Local Electricity Needs

- There are 21 planning regions in Ontario
- Municipalities play an integral role in the planning process based on each community's unique needs, priorities and characteristics
- They provide input on the following components within the plan:
  - Help to identify future electricity needs
  - Seek input on a variety of options to meet needs
  - Provide feedback on plan recommendations



# About Hydro One

- Transmit electricity from nuclear, hydroelectric, natural gas, wind and solar sources to local distribution companies and industrial customers across Ontario.
- Accounts for ~98% of Ontario's transmission capacity with approximately 30,000 circuit km of HV transmission lines.
- Hydro One is the transmitter for 20 of 21 regions in Ontario. As required by OEB, Hydro One initiates the Regional Planning Process (RPP) by identifying needs in the region. Hydro One leads this first phase and the last phase of the process with participation of IESO, LDCs and input from stakeholders, including municipalities.
- Hydro One is also one of the major distributors in Ontario and participates as an LDC in the RPP.
- Today's discussion will be focused on the information required from municipalities for electricity planning





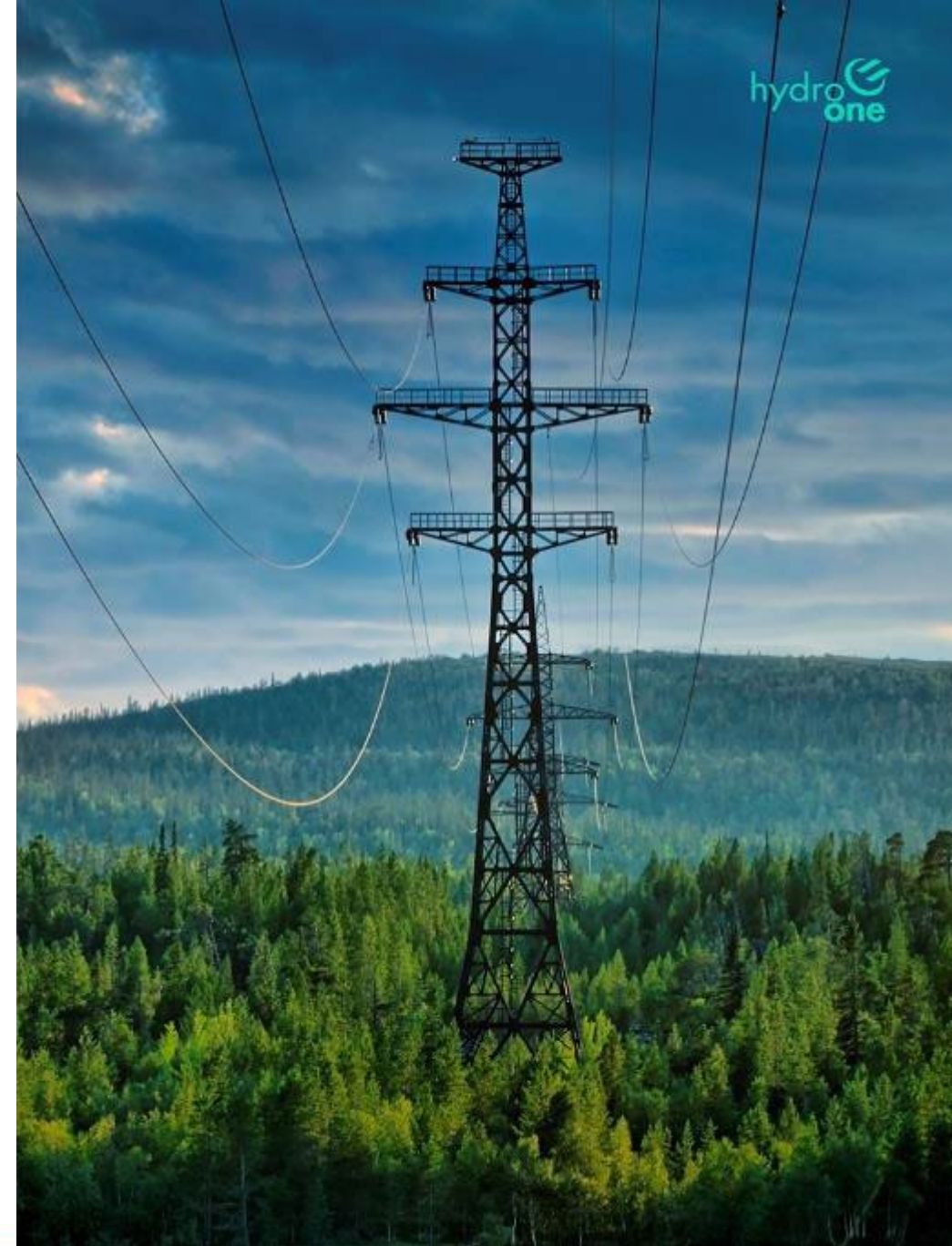
# Municipal Input in Electricity Planning

## Regional Planning (RP) Load Forecast:

- LDCs are required to provide their demand forecast as part of the regional planning process to identify infrastructure needs within local communities
- The work done by municipalities, through their MEPs/CEPs for example, includes underlying information that have linkages with the information LDCs need to prepare their load forecast.
- The information provided by municipalities (e.g. MEP/CEP) does not frequently have the specificity required for LDCs to translate into electricity load forecasts

## Municipal Information Guideline

- To address the information gap, OEB's Regional Planning Process Advisory Group (RPPAG) developed a guideline in Dec. 2022 with input from AMO and representatives from Hydro One, IESO, LDCs, and other stakeholders.
- Provides a list of key MEP/CEP outputs that LDCs need from municipalities in order to translate into their electricity demand forecast.



# Municipal Input in Electricity Planning

## Process:

- **LDCs and municipalities to engage and coordinate the information required prior to the kick-off of the regional planning process**
  - For 2023, Hydro One sent an email to all relevant municipalities where RP is planned to be undertaken as a heads up and request to prepare planning information per Guideline to the extent possible
  - RP timelines are relatively short and mandatory, so it is important that municipalities and LDCs communicate and share information in advance of kicking-off RP process
- This is not a mandatory requirement for municipalities; however, it will enhance municipal input into the electricity planning process and help LDCs to better capture municipal electricity needs
- Evolution of MEP/CEP information will be a gradual process and hope to see the full transition over the next few years with greater communication and engagement between LDCs and municipalities.

## 2023/24 Regional Planning Schedule

Region Name	Regional Planning Kick-off Schedule (Needs Assessment)
GTA North	March 2023
GTA East	Q3 2023 (date to be confirmed)
Kitchener-Waterloo-Cambridge-Guelph (KWCG)	December 2023
GTA West	May 2024
Greater Bruce/Huron	May 2024
East Lake Superior	June 2024

## List of Key MEP Outputs to Improve LDC Load Forecasting:

### A. Future electricity needs

Identify and quantify the new type of load expected annually over the next 10 - 20 years in the following categories:<sup>8</sup>

- Industrial (number of units by type and square meter)
- Commercial (number of units by type and square meter)
- Residential (number of units by type – low density, medium density, or high density residential)
- Population growth and employment forecast by geographic area
- Other, as applicable

Provide the assumption(s) and/or estimate(s) that were used in relation to the above.

### B. Net Zero Vision (or other emission reduction goal)

Where there is an emission reduction goal, such as Net Zero:

- (1) Identify the projects and initiatives that are expected to achieve that goal, its impact on the net electrical demand forecast (if possible, in megawatts), and its geographic location.
- (2) Identify locations where distributed energy resources (e.g., rooftop solar, geothermal, etc.) in local communities are being targeted (*note that the applicable LDC can provide helpful input to the municipality in identifying potential connection locations*).

### C. Considerations and Assumptions

#### ***Building Environment***

- Energy efficiency standards
- Distributed energy resources (e.g., solar and other innovative technologies such as battery storage)
- District heating and cooling considerations (medium & high density; Industrial, Commercial & Institutional [ICI])
- Large scale solar or storage for ICI
- Combined Heat and Power (CHP)
  
- Low density considerations (electric or natural gas)

#### ***Transportation***

- Electric vehicle (light duty) penetration
- Transit and other medium duty & high duty electric vehicle penetration
- Other (e.g., bi-directional charger assumptions, etc.)

# Regional Planning for the Natural Gas Sector

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Cara-Lynne Wade, Director of Energy Transition Planning, Enbridge Gas

# Enbridge Gas Inc.

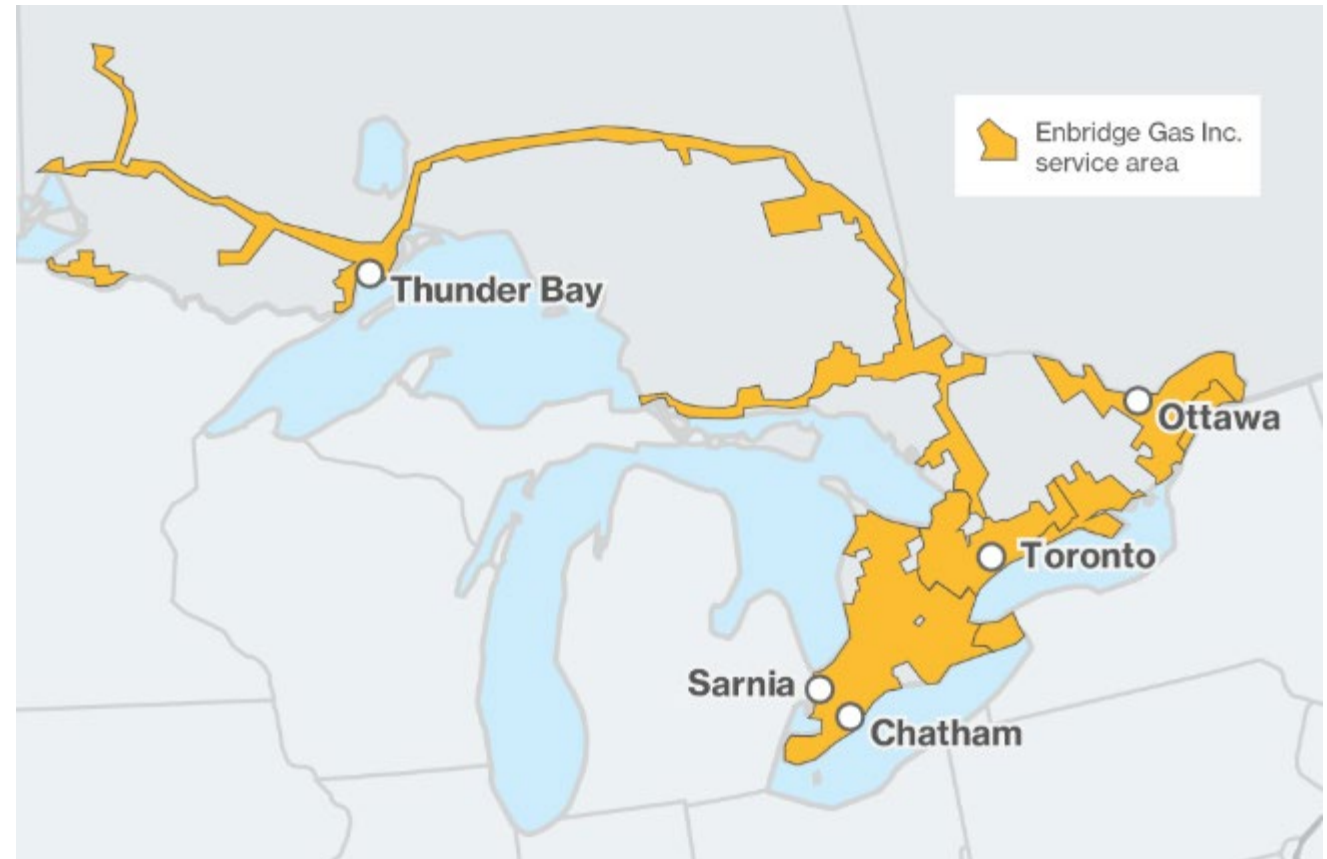


Proudly Serving Ontario | 175 YEARS

North America's largest natural gas storage, transmission and distribution company

**We deliver the energy that enhances people's quality of life.**

- **Values:** Safety, Integrity, Respect, Inclusion.
- **Ambition:** To be the sustainable and reliable energy provider of choice.
- **Experience:** 175 years of experience in safe and reliable service.
- **Distribution business:** 3.9M customers, heating >75% of Ontario homes.
- **Dawn Storage Hub:** Canada's largest integrated underground storage facility and one of the top gas trading hubs in North America.
- **Leading Ontario's transition to net-zero emissions**  
Advancing conservation, renewable gases and clean technologies for heat, transportation and industrial processes.



# How we are planning our system today



- Demand Forecast:
  - Economic forecast
  - Customer additions
  - Energy Transition
  - Municipal and Indigenous Engagement
- Hydraulic and annual simulation modelling
- Asset Management Plan
- IRP assessment process

# Pathways to Net Zero Emissions for Ontario

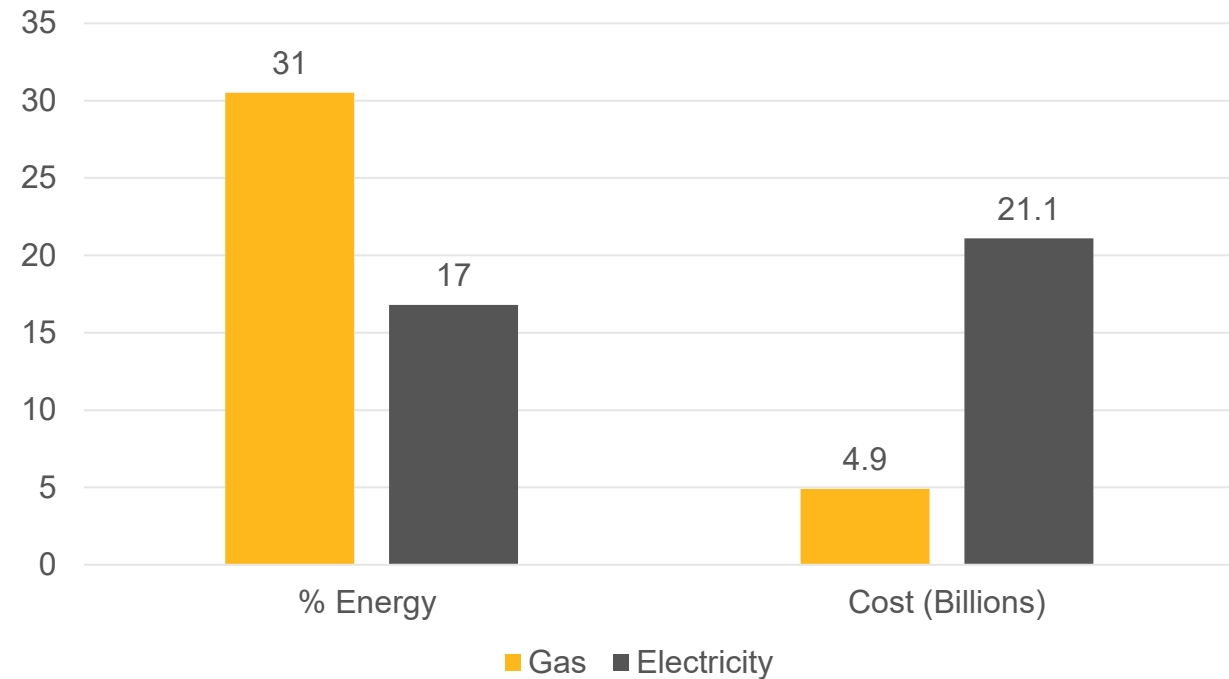
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# Ontario's energy systems

## Ontario's energy system reality

Natural gas provides almost twice the energy needs of Ontarian's and less than 1/4 the cost

Ontario's Energy Mix\*



\*% Energy: Canada's Energy Future 2021 report's database. Cost Electricity: \$18B operating revenues, OEB's 2021 yearbook and \$3.1B Renewable Cost Shift Subsidy, Financial Accountability Office of Ontario's Report, Ontario's Energy and Electricity Subsidy Programs, February 2022. Cost Gas: Total operating revenues for Ontario's gas distributors, OEB's 2021 yearbook.



# Enbridge's role in Ontario's energy transition

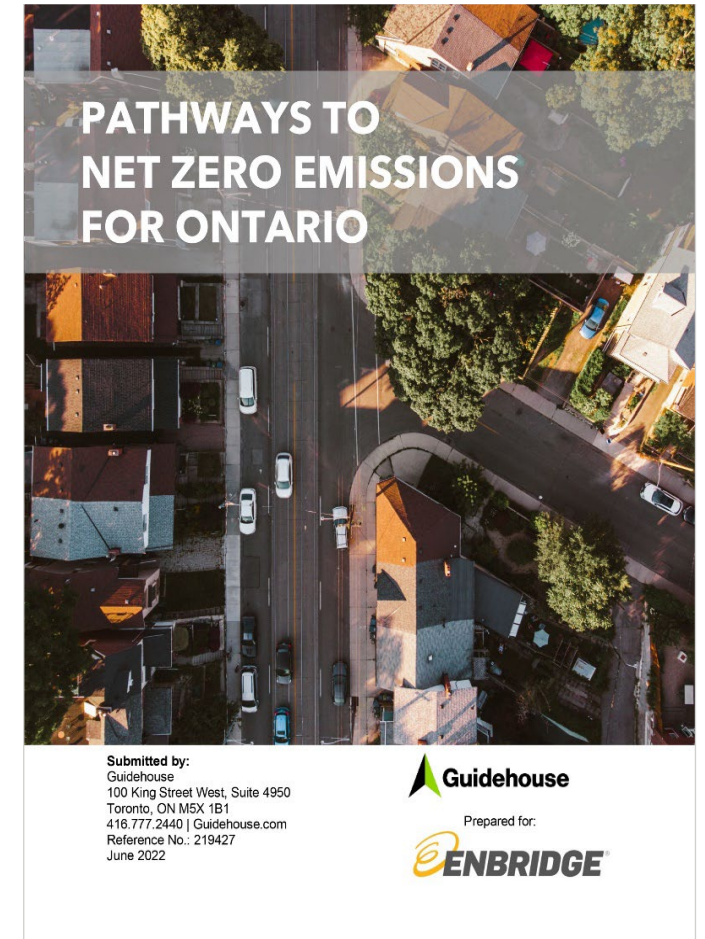


- With approximately 30% of Ontario's emissions coming from the use of natural gas, Enbridge Gas will have an important role in energy transition.
- Enbridge Gas is committed to supporting government with the achievement of their clean energy plans. We are:
  - Actively working on solutions to help meet Ontario's energy needs, while reducing emissions cost effectively.
  - Proactively engaged with a consultant to evaluate energy system pathways to net zero.
  - Working towards a net zero target by 2050 for emissions from our own operations, with an interim goal of reducing emissions intensity by 35% by 2030.
- The gas distribution system in Ontario is a resource that can be leveraged to enable further GHG reductions beyond 2030, including net zero.

# Pathway to Net Zero Study

## Two scenarios for Ontario's energy sector

- Enbridge Gas engaged Guidehouse to evaluate two pathways to net zero:
  - **Diversified Pathway:** end use electrification used in balance with low- and zero-carbon gases and natural gas paired with carbon capture.
  - **Electrification Pathway:** deep electrification of all sectors with low- and zero-carbon gases and carbon capture used only where no reasonable alternative energy source exists.
- For each, the study assessed the overall feasibility based on costs, GHG emission reductions, system reliability and resiliency.
- The study also identifies what investments are needed in electricity, hydrogen and methane supply capacity, storage and infrastructure.



## STUDY FINDINGS

**A diversified pathway that leverages both Ontario's gas and electric systems can achieve net zero, with greater:**



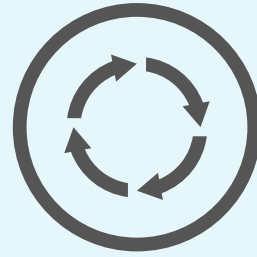
### **Affordability**

Achieves the same outcome as the electrification pathway at a lower cost



### **Reliability**

Meets the energy needs of Ontario homes and businesses, even on the hottest and coldest days of the year



### **Resiliency**

Protects against impacts from extreme events, such as weather and cybersecurity incidents



### **Consumer choice**

Allows Ontario energy consumers the flexibility to make choices on the path to net zero



### **Competitiveness**

Provides more affordable energy to help businesses stay competitive and thrive.

# Actions to achieve net zero

## “Safe-bet” actions to take today to reach net zero:



### Maximize energy efficiency

Reduce energy use.



### Optimize and coordinate energy system planning

Co-ordinate electric and gas system planning.



### Invest in low-carbon gases

Transition to increasing amounts of RNG and hydrogen over time.



### Utilize carbon capture and storage

Invest in CCS for heavy industry and blue hydrogen production.

# Energy Transition Assumptions into Demand Forecast

- Enbridge Gas has made the adjustments to the following forecasts and design elements to reflect certain energy transition policies and/or trends in Ontario:
  1. Customer Forecast
  2. Customer Additions Forecast
  3. Average Use Forecast
  4. Customer Volume Forecast
  5. Design Hour
  6. Design Day

# Integrated Resource Planning

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# Integrated Resource Planning

- Integrated Resource Planning (IRP) is an enhanced planning strategy and process.<sup>1</sup>
- Enbridge Gas evaluates non-pipeline alternatives that could be used to defer or avoid implementing a traditional pipe project to meet a system need.
- Consideration is given to safety, cost-effectiveness, and the ability for alternative solutions to meet customer demands reliably.



<sup>1</sup> IRP Framework was published by the OEB on July 22, 2021.

# IRP alternatives (IRPAs)

## Non-pipeline alternatives can include:

- **Demand side alternatives:**
  - Lowering energy use through energy efficiency programs such as Enhanced Targeted Energy Efficiency (ETEE) programs or Demand Response programs
- **Supply side alternatives:**
  - Delivering more energy without adding new pipeline using compressed natural gas (CNG) or liquefied natural gas (LNG)
  - Displacing conventional natural gas with carbon-neutral renewable natural gas and hydrogen
  - Adding supply through upstream deliveries

Alternatives can be implemented individually or in combination to meet the system need cost-effectively and within the required timeframe.





# IRP assessment process

Enbridge Gas uses a four-step IRP assessment process to determine the best approach to meet system needs:

1. Identification of constraints
2. Binary screening criteria (pass/fail)
3. Two-stage evaluation process
  - Technical evaluation
  - Economic evaluation
4. Periodic review

The IRP assessment process allows Enbridge Gas to focus on investments where there is a reasonable expectation that a proposed project could efficiently and economically meet the system need.



# How does IRP support energy transition?



- Energy Landscape in Ontario is evolving
- IRP supports Ontario's Energy Transition

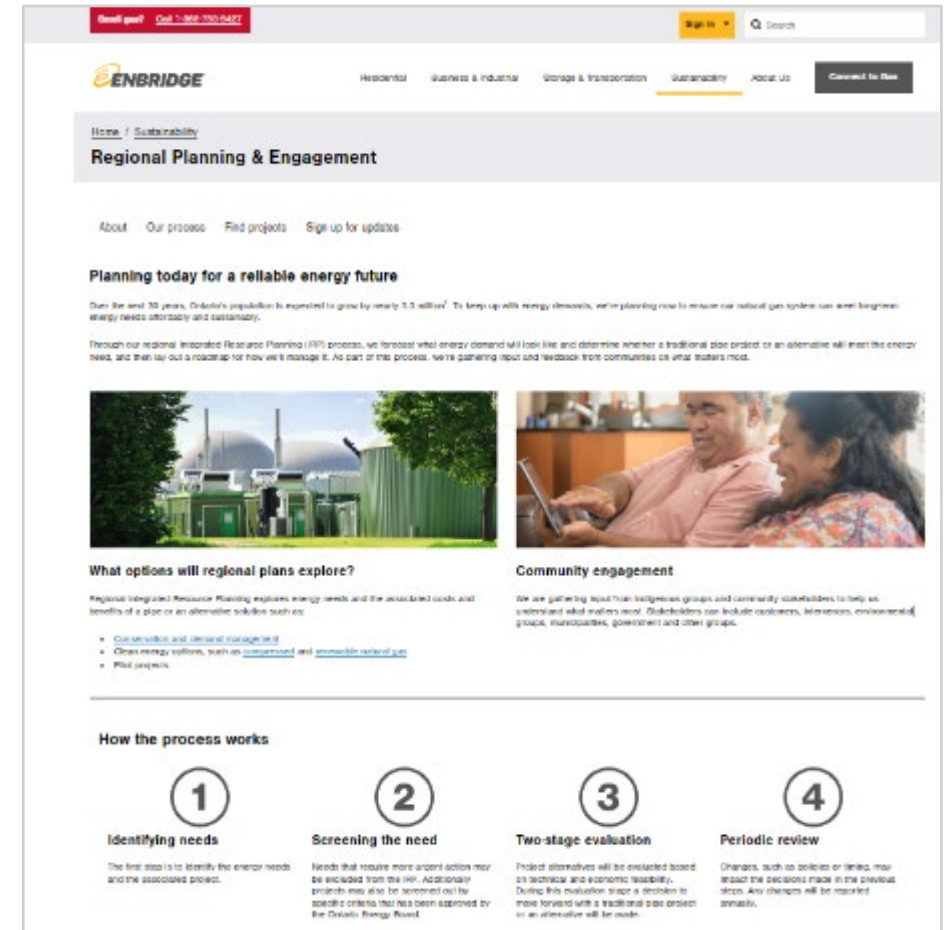
# How to stay involved

## Visit our Regional Planning webpage to:

- Sign-up for email updates to receive information on upcoming stakeholder events and webinars
- Register for events
- Review regional pages that include all IRP projects in your community
- Submit feedback through 'Have your Say'
- Search for other IRP information as required

**Sign-up for email updates today!**

[enbridgegas.com/sustainability/regional-planning-engagement](https://enbridgegas.com/sustainability/regional-planning-engagement)



# Regional IRP Webinars

- Southeast Region: [Tuesday, April 4, 2023 from 9:30-10:30am](#)
- Southwest Region: [Thursday, April 6, 2023 from 9:30-10:30am](#)
- Eastern Region: [Tuesday, April 11, 2023 from 9:30-10:30am](#)
- GTA East: [Thursday, April 13, 2023 from 9:30-10:30am](#)
- Toronto: [Tuesday, April 18, 2023 from 9:30-10:30am](#)
- Northern Region: [Tuesday, April 25, 2023 from 10-11am](#)
- GTA West: [Wednesday, May 4, 2023 from 1:30-2:30pm](#)

Additional webinars to be held in the Fall of 2023

# Thank you

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# AMO'S KEY TAKEAWAYS

- It is important that your municipality has their say as Hydro One, IESO, and Enbridge proceed through their respective regional planning processes.
- Municipal governments must have a voice in energy policy to ensure that these economic, environmental, and social concerns are adequately considered.
- AMO strongly encourages you to make connections with these companies at and between municipal conferences to get to know your local planning region.
- Review the [Municipal Information Document](#) on how to enhance coordination between municipalities and entities in the electricity sector.
- Share this presentation with your colleagues & stay connected to hear about upcoming webinars.
- Reach out to AMO staff with additional questions:

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