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Acronyms

APO	IESO's Annual Planning Outlook
BESS	Battery Energy Storage System
CCRA	Connection and Cost Recovery Agreement
CEP	Community Energy Plan
CIA	Customer Impact Assessment
CIP	Community Improvement Plan
CPPS	Community Planning Permit System
DER	Distributed Energy Resources
DSC	Distribution System Code
DSP	Distribution System Plan
EA	Environmental Assessment
EASR	Environmental Sector and Activity Registry
eDSM	Electricity Demand-Side Management
ERO	Environmental Registry of Ontario
ESA	Electrical Safety Authority
EV	Electric Vehicle
GIS	Geographic Information System
GTA	Greater Toronto Area
IESO	Independent Electricity System Operator
IPP	Independent Power Producer
LDC	Local Distribution Company
MECP	Ministry of Environment Conservation and Parks
MEM	Ministry of Energy and Mines

MEP	Municipal Energy Plan
MMAH	Ministry of Municipal Affairs and Housing
MPIC	Major Projects Identification Committee
NOCA	Notice of Conditional Approval
OEB	Ontario Energy Board
OEBA	Ontario Energy Board Act
OIC	Order-In-Council
OLT	Ontario Land Tribunal
PPS	Provincial Planning Statement, 2024
RAF	Resource Adequacy Framework
REA	Renewable Energy Approval
SIA	System Impact Assessment
TSC	Transmission System Code
TSSA	Technical Standards and Safety Authority
TWG	IESO Technical Working Group

1 Introduction

This guide is meant to support municipal planners and decision-makers with implementing the energy-related policies contained within the Provincial Planning Statement, 2024 (PPS). The PPS is a key part of Ontario's policy-led planning system: it sets out the policy foundation for regulating the development and use of land province-wide. The PPS policies require that planning authorities integrate land use planning with infrastructure planning in a coordinated, efficient, and forward-looking manner to ensure that infrastructure, including energy infrastructure, is available to meet current and projected municipal needs.

Energy infrastructure is fundamental to supporting housing, employment, transportation, economic development, and climate change mitigation. As Ontario experiences rapid growth and increasing electrification, coordination between municipal land use planning and energy system planning is necessary to ensure the safe, reliable, and affordable delivery of energy while avoiding infrastructure constraints, project delays, and unnecessary costs.

Land use and energy system planning must be closely connected, as municipal decisions on growth and development can impact energy demand, while energy system planning can shape the type, timing, and feasibility of development.

This guide explains how Ontario's energy system planning processes work, where municipal land use decisions intersect with those processes, and how municipalities can meaningfully engage to support coordinated planning outcomes. This guide also highlights the importance of effective collaboration, communication, and coordination between municipalities and the energy sector.

This guide is intended to support municipalities at various stages of the planning process, including:

- Preparing or updating official plans, secondary plans, and zoning by-laws;
- Assessing growth scenarios and infrastructure needs;
- Reviewing development applications with potential energy implications;
- Coordinating with electricity and natural gas distributors;
- Participating in regional and local energy system planning processes; and
- Consideration of other municipal by-laws and decisions that impact energy demand.

Many of the topics in this guide are explained in greater detail in the appendices.

The guidance in this document is based on information available at the time of publication. As legislation, policies, and emerging practices evolve, updates to guidance may be required. Municipalities should use their professional judgment and consult

current regulatory and policy sources when applying the information contained in this document.

2 Energy Planning and the Role of Municipalities

2.1 Introduction

Integrated energy planning in Ontario is a coordinated, long-term process used to identify future electricity and fuels needs (primarily natural gas) and determine how those needs will be met. The overarching policy objectives and priorities for energy planning are set by the provincial government, with technical electricity system planning led primarily by the Independent Electricity System Operator (IESO), in coordination with Local Distribution Companies (LDCs) and the Province, and planning for natural gas led by utilities. The Ontario Energy Board (OEB) provides oversight related to both electricity and natural gas planning.

Ontario's energy mix is forecast to become more electricity intensive as heating, transportation, and industry increasingly electrify. At the same time, other fuels such as natural gas and petroleum products remain essential across Ontario's economy, including for many heavy-duty transportation applications, aviation, and rural or remote areas not yet suited for electrification.

Emerging energy opportunities such as hydrogen, district energy, renewable fuels, and carbon capture and storage continue to offer pathways to reduce emissions and create jobs. As energy use patterns shift, energy planning in Ontario must continue to ensure access to reliable and affordable electricity and other fuels to support jobs, energy security, and emissions reductions in every part of the Province.

This section explains how electricity and fuels planning processes work in Ontario, and the role that municipalities have in these processes. More details on Ontario's energy system and information on different energy system partners can be found in Appendix C.

Integrated Energy Planning

The Ministry of Energy and Mines (MEM) sets the broad policy objectives and priorities for energy system planning, primarily through the development of integrated energy plans and the issuing of implementation directives to the IESO and the OEB. The Ministry's policy direction informs technical electricity planning at the provincial, bulk, regional, and local levels, and planning for natural gas and other fuels.

Under the *Electricity Act, 1998*, the Minister must develop an integrated energy plan at least every five years that considers all energy sources in a coordinated manner. To inform the plan's development, the Minister is required to undertake public consultation with consumers, distributors, generators, transmitters, Indigenous communities and other stakeholders. This consultation provides an important opportunity for municipal

stakeholders to engage with the Province to inform the provincial policy priorities which guide planning at other levels of the energy system.

On June 12, 2025, the Ontario government released *Energy for Generations*, its first integrated energy plan under the current legislative framework, which introduced a range of new initiatives to better align energy planning processes with the pace of demand growth and electrification across the economy. For example:

- The Ministry directed the IESO to establish a Major Projects Identification Committee (MPIC) process to enhance its regional electricity planning process. MPICs are intended to support early identification of major projects that may have an impact on demand forecasts – for example, where a municipality is trying to attract an electricity intensive manufacturer to its economic or employment lands, or where a municipality is planning to market lands for these types of activities. Municipalities play an important role in validating major projects given their responsibilities for siting, permitting, and other applicable land use approvals. Further, municipalities can also proactively engage the IESO on potential projects either through the MPIC process or as part of engagement initiatives to support bulk and regional electricity planning. This enables the IESO to use this information to inform its forecasting scenarios, and identify, at an early stage, the types of system investments that would be needed to support these projects, should they materialize.
- The Ministry directed the OEB and IESO to ensure that the planning of the IESO and electricity and natural gas distributors incorporate reference, low, and high energy demand scenarios, assess risks for these scenarios, and incorporate best practices. Input from municipalities is often considered in the IESO and utilities' energy modelling. Municipalities may wish to consider incorporating these practices into their modelling and planning. For example, municipalities could consider low and high scenarios of Electric Vehicle (EV) adoption in their plans and policies.
- The Ministry directed the OEB to create a gas-electric coordination information sharing forum to support integrated planning across fuels sources. While avoiding duplication with other processes, the shared information will likely include information from municipalities pertinent to local and regional gas-electric coordination, and information from local and regional gas and electric planning that will be relevant to municipalities. For more details, see OEB's website.

These and other initiatives in *Energy for Generations* reflect new approaches to coordinating across energy sources, governments, and sectors of the economy, underscoring the importance of ongoing municipal engagement as they evolve.

Municipalities should consider that any development near energy infrastructure must demonstrate the following matters of provincial interest:

- The orderly development of safe and healthy communities;

- The protection of the financial and economic well-being of the Province and its municipalities;
- The ongoing operation of facilities vital to ensuring energy security for the Province;
- The protection of public health and safety; and,
- The appropriate location of growth and development.

2.2 Electricity System Planning

Electricity system planning is the process of making long-term decisions to develop and maintain electricity infrastructure and operations. This entails managing existing infrastructure and forecasting and planning to address future electricity needs. Electricity system planning includes consideration of:

- Local and regional electricity planning;
- Investments in infrastructure;
- Long-term demand forecasting;
- Resource adequacy and supply management;
- Emissions reduction strategies; and,
- Grid modernization.

Identifying Electricity System Needs and Planning Resources

Ontario's electricity system is planned through a structured, forward-looking framework designed to ensure reliability, adequacy of supply, and alignment with provincial growth and policy objectives. The IESO is responsible for identifying when electricity resources will be needed and how those needs are met through procurement, ensuring that sufficient resources are available to meet electricity demand under a range of scenarios.

The Annual Planning Outlook (APO)

The APO is the primary public planning document through which the IESO communicates its assessment of medium and long-term electricity needs and system conditions. The APO forecasts electricity demand, assesses the reliability of the electricity system, identifies capacity and energy needs, and explores the province's ability to meet them, providing a single view of anticipated system requirements over a long-term planning horizon (20+ years).

The APO plays a critical role in determining:

- Whether additional electricity resources are required;
- The timing and scale of potential supply gaps;
- The types of resources that may be suitable (e.g., generation, energy storage, or demand-side resources); and,
- Regional or locational constraints that may influence siting of infrastructure.

For municipalities, the APO provides important context for understanding why new energy projects may be proposed and how they relate to broader provincial planning objectives.

Quarterly Reliability Outlooks

The IESO publishes quarterly reports that evaluate Ontario's preparedness to meet reliability requirements over an 18-month period. This near-term outlook is used to plan maintenance outages, provide updates on new resources entering service, and give sector participants a gauge of when supply will be tight leading to higher electricity prices.

For municipalities, these outlooks may provide insight into seasonal changes in electricity prices and conservation and demand-side management initiatives.

IESO's Resource Adequacy Framework

In 2020, the IESO launched the Resource Adequacy Framework (RAF), a long-term strategy to acquire electricity resources while balancing ratepayer and supplier risks. The framework is a multi-pronged approach with a range of procurement mechanisms (e.g., competitive procurements, bilateral negotiations, standard offer contracting programs). The RAF focuses on competitive procurements, where feasible, to deliver the best value for ratepayers.

From Planning to IESO Procurement

Should the APO, bulk system planning, or any related reliability assessments identify a need for new resources, MEM works with the IESO to consider policy options, under the RAF, for addressing those needs.

If procurements for new or existing supply are determined to be the appropriate mechanism, the Minister of Energy and Mines may issue a Ministerial Directive via an Order-In-Council (OIC) that sets out procurement objectives, resource eligibility, capacity targets, timelines, and authorities. The Minister's directive-making authority is derived from the *Electricity Act, 1998* and formally authorizes the IESO to proceed with procurement activity aligned with identified system needs. For more information on the *Electricity Act* and other key provincial policy and legislation, please see Appendix B.

The IESO then designs and delivers procurement processes to secure the required resources. Procurements are designed and launched to ensure that projects can be delivered within the timelines necessary to maintain system reliability.

Recent Ministerial Directives to authorize procurement of new resources have included requirements for proponents to demonstrate municipal engagement and a council resolution of support. A municipal support resolution does not substitute required permits or approvals. A municipality may choose to require a community benefits agreement as a condition for passing a municipal support resolution. This kind of bilateral agreement would require a developer to provide specific funding, amenities,

and/or mitigations to a local community. Electricity procurement project resources can be found on the Association of Municipalities of Ontario's website.

Bulk System Planning

Through bulk system planning, the IESO, supported by transmitters, considers the capacity and location of large power plants, high-voltage transmission lines, and inter-jurisdictional transmission connections in relation to regional demand forecasts, broader market outlooks, public policies shaping electricity demand, and emerging technologies. Bulk planning reports typically stem from the IESO's Annual Planning Outlook and assess whether Ontario's transmission system can deliver electricity from generation and storage resources to customers, meet all applicable reliability standards, and can supply growing demand. Recommended actions identified in bulk planning reports are considered as part of regional system planning to determine any impacts to local reliability and future growth needs.

Regional System Planning

Regional system planning ensures that a reliable supply of electricity is available and reflects local growth patterns, infrastructure conditions, and system constraints.

The IESO divides the province into **21 electricity planning regions** for the purposes of regional electricity system planning. These planning regions are broadly aligned with major transmission corridors, load centres, and system characteristics, and are used by the IESO, transmitters, and LDCs to assess regional electricity needs.

Each planning region typically includes:

- One or more transmission stations;
- Multiple LDCs; and,
- A mix of urban, rural, and remote communities with differing load characteristics.

Regional planning considers:

- Forecast electricity demand over a 10- to 20-year horizon;
- Existing and planned transmission and distribution infrastructure;
- Opportunities to address needs through a combination of wires and non-wires solutions (NWS), such as energy efficiency, distributed generation, storage, and transmission upgrades; and,
- Local development patterns, growth pressures, and emerging loads (e.g., EV charging, electrification of heating).

Municipalities may fall entirely within a single planning region or, in some cases, span more than one region. As a result, major growth or development decisions in one municipality may have implications beyond municipal boundaries and may be considered as part of a broader regional planning process.

Regional planning is led by the IESO and is conducted in close collaboration with a Technical Working Group (TWG) in each of the 21 planning regions comprised of regional transmitters and LDCs to establish load forecasts and to evaluate options, including conservation and demand-side management, generation, and transmission solutions depending on the unique needs of the region. The load forecasts upon which regional planning is based and the options that are evaluated, are subject to regular consultation with municipalities, Indigenous communities, individuals, and business groups to ensure their needs and interests are captured in the plan. The planning process is triggered at least every five years, or sooner if a need is identified, such as aging equipment or requests for increased electricity supply from new or existing customers.

Understanding the relevant planning regions, and how they relate to local development is an important step in coordinating land-use planning with electricity system planning.

For more information on electricity regional planning activities, including planning region boundaries, ongoing studies, and opportunities for municipal and stakeholder engagement, municipalities are encouraged to consult the IESO's regional planning webpage: https://www.ieso.ca/get-involved/regional-planning.

The Integrated Regional Resource Plan (IRRP) is a long-term electricity plan for a specific region led by the IESO. The process includes public consultation and engagement to incorporate local interests into planning and to build linkages with municipal land use plans, provincial growth plans, and any municipal or community energy plans.

For more information about regional system planning, please refer to the IESO's website: Regional Planning Overview.

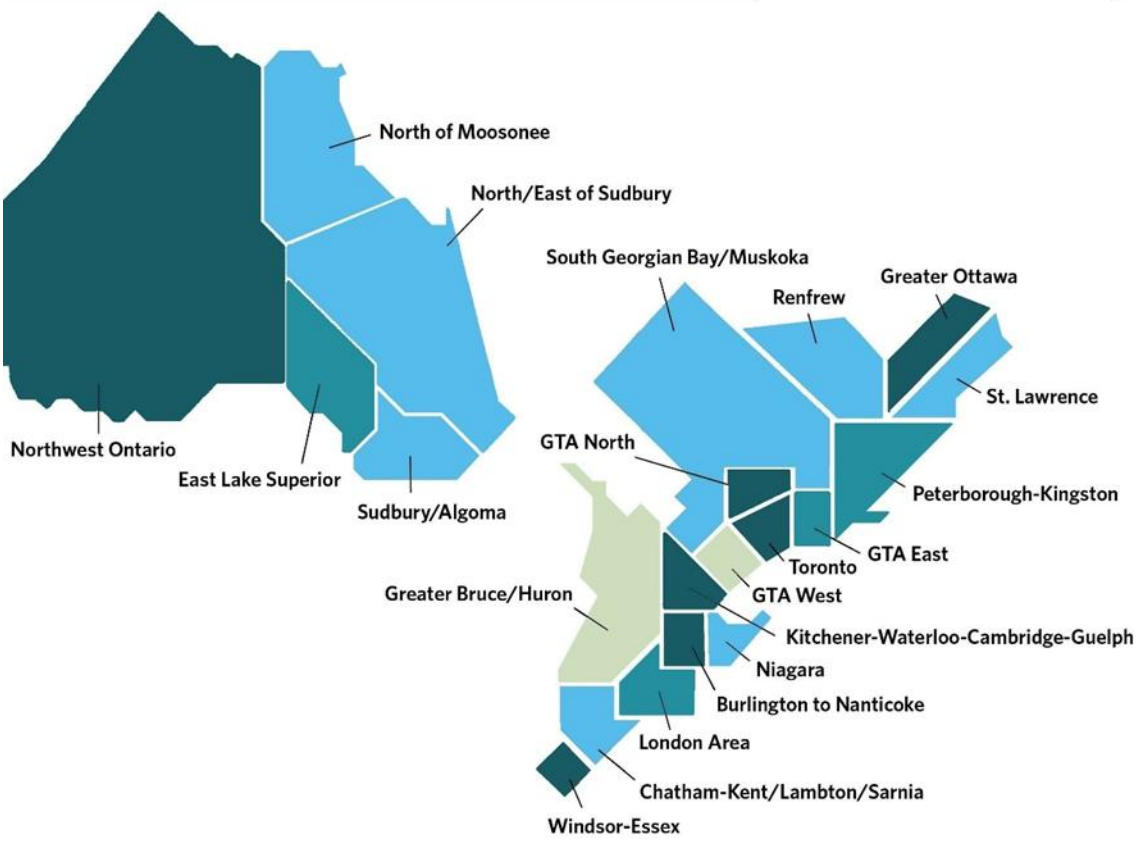


Figure 1 - Planning Regions and Geographic Context

Electricity system planning in Ontario is organized across different geographic boundaries, each serving a distinct purpose.

Local Planning

LDCs have defined services areas where they are licenced by the OEB to distribute electricity. Within their service area, LDCs are responsible for forecasting load growth and planning electricity distribution infrastructure through the creation of Distribution System Plans (DSPs). These forecasts are required to consider emerging loads, such as growing EV adoption and new housing developments, and form the basis for future system investments. Ontario's LDCs prepare load forecasts for their service territory to inform system planning, enhancements, and expansions that support the growth and energy needs of municipalities.

Municipalities may have information contained in Municipal Energy Plans (MEPs) or other documents that would assist LDCs in their forecast activities by identifying and quantifying the type and location of future electricity demand expected annually over the next 10 - 20 years. Examples include:

- Residential, commercial, and industrial buildings (number of units by type and square meter); and,

- Population growth and employment forecast by geographic area.

Other examples could include emission reduction goals:

- Projects and initiatives that are expected to achieve emissions reductions, its impact on the net electrical demand forecast (if possible, in megawatts), and its geographic location; and/or,
- Locations where Distributed Energy Resources (DERs) (e.g., rooftop solar, geothermal) in local communities are being targeted.

Note that the applicable LDC can provide helpful input to the municipality in identifying potential connection locations.

Planning and Protection of Future Transmission Corridors

Transmission corridors are a critical component of Ontario's electricity system, enabling the movement of electricity from generation sources to areas of demand.

As electricity demand grows and transmission infrastructure expands, early identification and protection of transmission corridors is essential to ensure that infrastructure can be delivered in a timely and cost-effective manner.

Provincial Corridor Studies

In partnership with the IESO, the Province has advanced two strategic transmission corridor studies: the Northwest GTA Corridor Study and the Parkway Belt Corridor Study. These studies are focused on high-growth areas and will examine opportunities to maximize the use of existing corridors and co-locate transmission infrastructure with other linear infrastructure, such as transportation corridors, where possible. This approach supports efficient land use while minimizing environmental and community impacts. Preserving these corridors in advance ensures that Ontario can build the transmission lines it needs, when they are needed, to support affordable and reliable electricity supply, housing development, and economic growth.

Northwest GTA Corridor Study

The Province has completed a corridor study in the Northwest GTA, adjacent to the future Highway 413. This study preserves a corridor of land for future transmission infrastructure and preserves options to accommodate both 230 kV and 500 kV lines. The corridor is intended to support load growth in York, Peel, and Halton Regions while facilitating the delivery of electricity from new generation resources to high-growth areas.

Information on this completed study is available through the Environmental Registry of Ontario (ERO), at: https://ero.ontario.ca/notice/025-1133.

Parkway Belt Corridor Study

Between 1978 and 2026, the Parkway Belt West Plan played a critical role in ensuring

that electricity transmission infrastructure could be built through the Greater Toronto Area (GTA) efficiently and affordably, hosting multiple circuits of the province's bulk transmission system that transfers electricity to and through the GTA. This Plan was revoked on July 1, 2026. In March 2026, the Province initiated the Parkway Belt Transmission Corridor Study, which continues to preserve lands for transmission infrastructure throughout the GTA, providing an opportunity to enhance transmission supply with minimal new land requirements. While specific technical needs will be identified through future system planning by the IESO, the corridor is expected to accommodate new high-voltage transmission lines (230 kV and/or 500 kV) and new transmission stations. Lower-voltage infrastructure may also be required to connect growing residential, manufacturing, and commercial loads.

Information on this study can be found on the environmental registry: https://ero.ontario.ca/notice/026-0347.

For clarity, *planned corridors* under the PPS are not limited to provincially identified transmission corridor studies. The PPS definition also includes corridors identified through other provincial infrastructure plans, Class Environmental Assessment (EA) processes, or planning studies where a provincial ministry, agency, or the IESO is actively pursuing or has completed the identification of a corridor.

As a result, *planned corridors* may be identified through multiple processes and at different stages of advancement. Once identified, these corridors are subject to PPS policy direction, including requirements to protect them from development that could preclude their intended use.

Information on corridor studies initiated by the IESO will be available on the IESO website at www.ieso.ca.

2.3 Natural Gas and Fuels Planning

Identifying Natural Gas System Needs

There are two rate-regulated natural gas utilities in Ontario: Enbridge Gas and EPCOR. Enbridge Gas manages most of the natural gas transmission and distribution pipelines in Ontario, serving nearly all natural gas customers in Ontario. Natural gas planning processes and documents can provide municipalities with valuable information on upcoming projects.

Gas Supply Plan

The Gas Supply Plan is developed by natural gas utilities and outlines how the utility secures natural gas supply, upstream transportation, and storage, to meet the forecast natural gas delivery demands of customers. These upstream aspects of the gas supply chain are not owned by the utility. Regulated natural gas utilities file a comprehensive five-year gas supply plan for review once every five years and are also required to submit annual updates.

Asset Management Plan

Asset Management Plans are developed by natural gas utilities and include information on transmission and distribution pipelines, distribution stations and underground storage to meet the forecast natural gas delivery demands of customers. These plans also include information on the utility on aspects such as:

- Asset management policy;
- Strategy and objectives;
- Assessment of the condition of capital assets; and
- Assessment of current and future system operating conditions.

The Asset Management Plan covers planned investments and system needs over a period of ten future years, but emphasizes investments that will occur in the next five years.

Integrated Resource Planning (IRP)

As described by the OEB, Integrated Resource Planning (IRP) is a planning strategy and process that evaluates and compares traditional and non-traditional (e.g., non-pipeline) solutions and their linkages to address the natural gas system needs identified in the Asset Management Plan. The IRP Framework only applies to Enbridge Gas and involves four steps:

1. Identification of Constraints: potential system needs are identified up to 10 years into the future, which are also included in the Asset Management Plan.
2. Screening Criteria: a Binary Screening Criteria is applied to assess the needs identified in the Asset Management Plan to determine whether IRP evaluation is appropriate.
3. Two-stage Evaluation: a two-stage evaluation, which involves a technical feasibility evaluation and an economic evaluation, is applied to determine whether to proceed with an IRP Plan to meet identified needs. Enbridge Gas would then file an application with the OEB for approval of the IRP Plan if it is determined that an IRP Plan is the best alternative to address an identified need.
4. Monitoring and Periodic Review: Enbridge Gas must file an annual IRP report with the OEB for information.

2.4 Energy and Land Use Planning

Land Use Compatibility Near Major Energy Infrastructure

When completing or making amendments to official plans, municipal staff shall ensure that proposed development is compatible with existing and planned energy infrastructure and related utility systems, in accordance with the PPS and applicable land use compatibility guidelines, including separation distance guidelines prescribed by the Ministry of Environment Conservation and Parks (MECP).

Energy infrastructure, such as generating stations, transmission lines, transformer stations, petroleum refineries, fuel storage and distribution terminals, oil and gas pipelines, and related infrastructure, are considered critical infrastructure by the Government of Ontario. This infrastructure is vital to power industries, support agriculture, heat homes and businesses, and keep goods and people moving across the province. These facilities ensure regional and provincial energy security and are also considered *major facilities* under the PPS. For detailed definitions of PPS terms, please see Appendix A.

Energy Supply Security and Protection of Critical Infrastructure

Existing energy facilities represent established essential services, critical to the local, provincial, and national economies by providing reliable energy supply and distribution services across Ontario. In addition to serving Ontario residents, these facilities support a broad range of sectors, including construction, aviation, rail, road transport/logistics, infrastructure, manufacturing, governments, and the military.

Due to significant challenges associated with siting and constructing new energy infrastructure, relocating existing facilities can be highly complex and costly. As a result, protecting existing facilities from incompatible development and encroachment to support their continued safe and reliable operation should be prioritized.

Planners should also consider that crowding or increasing building density in the vicinity of critical energy infrastructure, such as major transformer stations, can create operational challenges by limiting the access options for new connecting lines, potentially increasing the cost of maintaining and expanding electricity infrastructure.

Under the PPS, planning authorities should provide opportunities for the development of energy supply, including electricity generation facilities, transmission and distribution systems, energy storage systems, district energy, renewable energy systems, and alternative energy systems, to accommodate current and projected needs. For more information on how this is described in the PPS, please refer to Appendix B.

Public Safety

Operators of energy infrastructure are subject to oversight by safety regulators[1] and follow standard safety and operational management practices for their industry. These safety procedures and controls are designed to reduce the likelihood and potential consequences of unplanned or accidental incidents. While risks are managed and mitigated to the greatest extent possible, they cannot be eliminated completely.

Energy facilities, such as refineries, pipelines, and fuel terminals, operate 24 hours/day, 7 days/week, 365 days/year. For petroleum products, large volumes of flammable products are transferred to and from the facilities by trucks, pipelines, and rail. A safety incident at a pipeline or petroleum product facility can potentially be quite serious and

impact the local area and nearby residents. Examples include fires or explosions, damage to property, adverse effects on the environment, or even loss of life / serious injury.

Increasing building density in the vicinity of critical energy infrastructure, including high-pressure pipelines, may require additional monitoring and maintenance activities, create operational challenges, and potentially increase the cost of operating and maintaining existing energy infrastructure.

In addition, locating sensitive land uses in close proximity to energy infrastructure may increase the risk of damage or safety incidents during construction, excavation, or other ground disturbance activities.

Ontario's fuel supply depends on the continued, uninterrupted operation of these facilities, making their long-term viability critical. The operations must therefore be protected from the encroachment of incompatible land uses that could pose public safety and operational concerns, such as land-use conflicts, noise, odor, and safety complaints.

The PPS requires that *major facilities*, including energy infrastructure, and *sensitive land uses* should be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects related to odour, noise and other contaminants, public health and safety risks, and to ensure long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.

Where avoidance is not possible, planning authorities are required to protect the long-term viability of existing or planned industrial, manufacturing or other *major facilities* that are vulnerable to encroachment by ensuring that the planning and *development* of proposed adjacent *sensitive land uses* is only permitted if potential adverse effects to the proposed *sensitive land use* are minimized and mitigated, and potential impacts to industrial, manufacturing or other *major facilities* are minimized and mitigated in accordance with provincial guidelines, standards and procedures.

Transmission infrastructure and corridors are designed and operated in accordance with applicable safety standards and guidelines. Transmission lines carry high-voltage electricity. As a result, maintaining appropriate clearances from conductors is critical to protecting public safety and ensuring the reliable operation of the electricity system.

Transmission towers, structures, and corridor widths are designed to provide the clearances necessary for the safe operation and maintenance of transmission facilities. Activities that alter ground conditions within a corridor, such as excavation, grading, or changes to drainage patterns can affect these clearances and create safety, operational or reliability concerns. When planning for development adjacent to transmission facilities, or secondary uses within transmission corridors, municipalities and proponents

should engage the transmitter early to understand applicable safety, access, maintenance and operational requirements.

2.5 The Role of Municipalities

Municipalities play a critical role in enabling the timely and coordinated development of energy infrastructure needed to meet Ontario's electricity needs. While IESO bulk and regional planning processes identify system-level electricity requirements, municipalities establish the local planning framework that guides the siting, land use compatibility, and approval of proposed energy procurement projects.

Through responsibilities such as preparing official plans, developing zoning policies and bylaws, and other land use planning instruments, municipal decisions can influence when and how electricity infrastructure is developed.

Municipal planning documents, including growth forecasts, official plans, secondary plans, and economic development strategies, are important inputs for LDCs, natural gas distributors, the IESO, and other system planners. These documents provide insight into the scale, timing, and location of future growth, helping planners anticipate electricity demand, identify infrastructure and investment needs, and ensure the electricity system can support planned growth and development.

This information supports the development of LDC DSPs, which outline the utility's strategy for managing and expanding its electricity distribution system. Municipal land use and development plans help inform demand forecasts and investment priorities, ensuring that electricity infrastructure can support planned residential, commercial, industrial, and economic development.

By sharing planning information early and regularly, municipalities can help improve coordination between land use planning and electricity system planning, reducing the risk of infrastructure constraints and supporting more efficient system investment.

Where Municipal Planning and Energy Planning Intersect

The PPS supports an integrated approach to planning that recognizes energy infrastructure as essential to community development and economic activity, while also emphasizing efficient land use patterns, infrastructure optimization, and compatibility with existing and planned land uses. Official plans are the most important vehicle for implementing the PPS and for achieving comprehensive, integrated and long-term planning. Zoning bylaws and community planning permit system (CPPS) bylaws are also important tools for implementing the PPS. These should be forward looking, facilitating opportunities for growth and development, and focused on helping to achieve the goals and objectives set out in a municipality’s official plan. These tools provide a legal and precise way of managing land use and future development in a municipality.

The Province has an interest in ensuring that land use planning supports broader objectives, including economic competitiveness, housing supply, climate resilience, and energy system reliability. Municipalities can support these objectives by considering current and future energy needs early in the planning process, including opportunities for energy conservation, efficiency, demand management, and the development of energy infrastructure where appropriate.

Municipal land use planning decisions play a critical role in shaping Ontario's future energy needs and influencing where, when, and how energy infrastructure is required. While municipalities do not plan or approve energy system investments directly, they have the authority to approve or deny planning approvals for some types of electricity generation / storage projects, and siting decisions about the location of energy projects. Municipalities can also provide municipal support resolutions where these are required. Municipal decisions affect growth patterns, development timing, density, land use compatibility, and transportation networks – all of which have implications for electricity and fuels planning.

Planning authorities play a critical role in considering energy needs and opportunities early in the planning process, including opportunities for energy conservation, demand-side management, and efficiency. They can also explore opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, energy storage systems, renewable energy systems, alternative energy systems, and district energy where appropriate and to accommodate projected needs.

The PPS provides policy direction on matters of provincial interest related to land use planning and development. Planning authorities, in their day-to-day decisions on land use planning matters and through their official plans, zoning by-laws and other planning documents, are required to be consistent with the PPS. The PPS policies require planning authorities to integrate land use planning with infrastructure planning in a coordinated, efficient, and forward-looking manner, ensuring that infrastructure, including energy infrastructure, is available to meet current and projected needs.

How Municipal Decisions Influence Energy Planning

As municipalities grow, decisions about the location and form of infrastructure, transportation systems, and land uses—including residential, employment, and mixed-use development—can have significant implications for electricity distribution capacity, transmission requirements, and demand for natural gas and other fuels.

Coordinating energy and land use planning increases the likelihood that energy infrastructure will be available at the right locations and at the right time. It can also help avoid delays, capacity constraints, and unnecessary infrastructure investments.

Municipal land use planning decisions influence energy systems by shaping:

- The location of growth;

- The density and form of development;
- The timing and phasing of development; and,
- Transportation and servicing patterns.

These decisions affect:

- Overall electricity and fuel demand;
- The geographic concentration of energy use;
- Peak demand patterns; and,
- The need for new or upgraded infrastructure.

Because energy infrastructure must be planned in advance, early clarity on municipal growth and development is critical to ensuring that infrastructure is available when needed.

For example:

- Designating employment lands for industrial or large commercial uses can create significant electricity demand that may require new or expanded infrastructure;
- Policies or development decisions that support electrification (e.g., EVs or electric heating) can increase electricity demand and affect local system capacity; and,
- The location, scale, and timing of development can influence where electricity infrastructure upgrades are required and how efficiently existing infrastructure can be used.

Examples: How Municipal Planning Can Impact Energy Planning

Passenger Transportation

A variety of zoning and road, traffic, and transit planning decisions can encourage more efficient driving or people to drive less, thereby reducing gasoline and electricity demand. In turn, this:

- Reduces the costs for supply, transmission and distribution of gasoline and electricity;
- Reduces gasoline and electricity bills;
- Reduces greenhouse gas emissions from gasoline and electricity; and,
- Improves energy security since gasoline is either imported or the crude oil used to make gasoline in Ontario is imported.

Policies that support EV charging can support EV adoption. EV adoption reduces gasoline demand but increases electricity demand. In turn this:

- Reduces the costs for supply, transmission, and distribution of gasoline but increases these costs for electricity;
- Reduces gasoline bills but increases electricity bills;

- Reduces net emissions; and,
- Improves energy security since gasoline is either imported or the crude oil used to make gasoline in Ontario is imported.

Overall energy use is significantly lower for electric transportation options versus their gasoline equivalent, and studies generally show savings for consumers when switching to EVs.

Transit

Policies that encourage the use of public transit would likely reduce gasoline and electricity demand. In turn, this could:

- Reduce the costs for supply, transmission and distribution of gasoline and electricity;
- Reduce gasoline and electricity bills
- Reduce emission from gasoline and electricity; and
- Improves energy security since gasoline is either imported or the crude oil used to make gasoline in Ontario is imported.

Space Heating

Policies and planning decisions, such as zoning and development charges, can have significant implications for energy consumption patterns, especially space heating. Denser communities tend to encourage using less energy for space heating, which reduces the demand of space heating fuels (e.g. natural gas, electricity, heating oil, propane, wood).

District Heating

Policies that encourage district energy systems and usage of waste heat from industrial facilities, wastewater systems, and data centres can reduce:

- Demand for conventional space heating fuels (e.g., natural gas, heating oil, propane, wood); and,
- Costs associated with the supply, transmission and distribution of these fuels, potentially reducing consumer heating bills, decreasing greenhouse gas emissions, and improving energy security.

Municipalities can encourage the deployment of district energy systems through integrated energy planning, including prioritizing district energy systems in certain land use designations or through financial incentives and cost-recovery tools (e.g., grants or tax incentives).

3 Working with Energy Sector Partners

3.1 Supporting Energy System Planning

Land use and energy system planning are closely connected, as municipal decisions on growth and development can impact energy demand, while energy system planning can shape the type, timing, and feasibility of developments.

This section outlines practical best practices to improve collaboration, communication, and coordination between municipalities and energy sector stakeholders. By aligning processes and sharing information more effectively, and working together towards common goals, all parties can support more efficient infrastructure planning.

Municipalities play an important role in supporting electricity system planning by providing information that informs forecasting, regional planning, and infrastructure investment decisions.

Supporting Load Forecasting

LDCs, natural gas distributors and system planners rely on municipal information to develop electricity demand forecasts.

Municipalities should provide:

- Population and employment forecasts;
- Planned residential, commercial, and industrial development;
- Major infrastructure projects or site-specific developments (e.g. data centres); and,
- Policies or initiatives that may affect energy demand (e.g., electrification, emissions reduction targets).

To support effective forecasting, municipalities should aim to provide:

- Geographically specific information (e.g., by neighbourhood, growth area, or planning district);
- Development phasing and timing assumptions; and,
- Updates where plans or assumptions change significantly.

Providing this information early, and updating it regularly, improves forecast accuracy and helps ensure that energy infrastructure planning aligns with growth.

Supporting Transmission Corridors

Preserving strategic transmission corridors has important implications for municipal planning under the PPS.

The initiation of a study has the effect of designating the transmission corridor study area as a planned corridor under the PPS which prohibits planning authorities from approving any development which could preclude the future use of the corridor for the purpose for which it was identified.

Municipalities can support coordinated infrastructure planning for transmission corridors by:

- Recognizing identified or emerging transmission corridors in official plans, secondary plans, and growth strategies, where appropriate;
- Sharing development applications for lands within planned transmission corridors with MEM for review;
- Avoiding land-use designations or permissions within *planned corridors* that would preclude future transmission infrastructure or materially increase the costs and impacts of infrastructure development;
- Considering future electricity infrastructure needs alongside transportation, housing, and employment planning, particularly in high-growth areas; and,
- Engaging early with the Province, the IESO, and transmitters where major growth or redevelopment is proposed near existing or potential transmission corridors.

Planning for Secondary Uses on Transmission Corridor Lands

In addition to supporting the transmission of electricity, many provincially-owned transmission corridor lands can accommodate compatible secondary uses that advance municipal priorities and community objectives.

Municipalities are encouraged to consider potential uses for these transmission corridor lands as part of broader planning activities. There have been successful examples across Ontario of walking/biking trails, community farming, co-location of some linear infrastructure, environmental projects (such as pollinator gardens), and other compatible community uses. Where appropriate, municipal planning policies and zoning should support the safe and efficient use of existing transmission corridors while preserving their primary electricity transmission function.

Provincial Secondary Land Use Program

Through Ontario's Provincial Secondary Land Use Program (PSLUP), municipalities, public agencies, Indigenous communities, private landowners, and other proponents may apply to use eligible transmission corridor lands for compatible secondary uses. The program is designed to support a broad range of uses while maintaining the safe and reliable operation of the electricity system.

Early engagement with Infrastructure Ontario and transmission asset owners can help municipalities identify opportunities, constraints, and compatibility requirements within their communities.

For more information on the program, please visit: https://www.infrastructureontario.ca/en/what-we-do/real-estate-services/surplus-properties-sales-program-overview/hydro-corridor--provincial-secondary-land-use-program/

Supporting Natural Gas and Fuels Planning: Recommended Guidelines

This section provides guidance for planning and development decisions in proximity to major energy infrastructure and facilities that may pose land use compatibility, public safety, and operational considerations. Municipal planning authorities play a critical role in ensuring that new development is appropriately located and designed to protect public health and safety, minimize potential conflicts between land uses, and support the continued operation of essential energy infrastructure. Specifically:

- Planning authorities shall prioritize separation distance and restrict incompatible development near energy infrastructure that is classified as a Class III industry by the MECP. The D-6-3 guidelines recommends a minimum distance of 300 meters between the property line of Class III industries and sensitive land uses, such as residential areas, to protect people and the environment.[2]
- Operation Continuity: Municipal planning shall ensure the long-term operational and economic viability of major facilities.
- Planning authorities should avoid, wherever feasible, the siting of new or expanded sensitive land uses (e.g., residential, schools, hospitals, and institutional uses) near major energy infrastructure. Where avoidance is not feasible, a comprehensive land use compatibility and risk assessment should be required.
- Development near major facilities should be supported by a comprehensive land use compatibility and risk assessment that addresses:
    - Protection of major facilities and critical infrastructure from encroachment;
    - Substantive engagement with energy infrastructure owners and operators;
    - Quantitative or qualitative public safety risk assessment;
    - Emergency access and evacuation planning;
    - Demonstration that development does not hinder the expansion, access, or continued operation of facilities;
    - Adequate separation distances to ensure public safety and future expansions
    - Assessment of noise, odor, traffic, and air quality impacts; and,
    - Consultations with relevant agencies, including emergency management authorities, MEM, and Technical Standards and Safety Authority (TSSA), as applicable.

3.2 Municipal Planning Tools and Responsibilities

Official Plans

Official plans are the primary tool for establishing how municipalities address energy infrastructure within the land use planning framework. In implementing PPS policies related to infrastructure and energy supply, municipalities should:

- Ensure that official plan policies are consistent with the PPS, including policies related to energy supply, corridor protection, and energy conservation;
- Avoid policies or land use designations that could preclude or conflict with planned corridors, or other energy infrastructure;
- Ensure that land use planning supports compatibility between energy infrastructure and surrounding uses; and,
- Consider how land use patterns, density, and development influence long-term energy demand and support energy efficiency objectives.

Municipalities are encouraged to support energy conservation efforts in large broader public sector and private sector buildings within their boundaries through statements in official plans promoting compliance with benchmarking and reporting requirements outlined in O.Reg.25/23 and O.Reg.506/18.

Key Considerations for Municipal Official Plans

Under the *Planning Act* and PPS, municipalities are required to plan for infrastructure, including electricity generation, energy storage, transmission, and distribution facilities, in a manner that is consistent with provincial policy. Clear and proactive municipal policy direction can help align local planning and development decisions with provincial energy priorities, enabling the effective implementation of both.

Municipalities that provide clear policy guidance within their plans are better positioned to manage growth, protect local interests, and support the coordinated delivery of energy infrastructure as proponents report that ambiguity in official plans and zoning by-laws can lead to siting conflicts, project delays, or projects being redirected to other jurisdictions.

Municipalities are encouraged to address energy system planning explicitly in their official plans to provide clarity for communities, Indigenous partners, and energy proponents, and to support effective implementation of PPS policies.

Articulate a Clear Policy Approach to Energy Development

Official plans should clearly articulate the municipality's overall approach to energy development, including whether the municipality:

- Supports energy production and energy storage technologies, and by type;
- Allows energy production or storage projects in specific zones (e.g. Rural, Agricultural, Industrial); or,

- Takes a technology-neutral approach, subject to land use compatibility, environmental protection, and PPS requirements.

Clear policy direction helps set expectations early in the project lifecycle and reduces uncertainty during municipal engagements, ongoing procurements, and project development. Municipalities are encouraged to share information with their LDC, natural gas distributors, and/or the IESO to contribute to better alignment and informed decision making by all parties who could be impacted by an official plan.

Clearly Defined Terms

For example, the PPS, 2024 includes a new defined term for "*energy storage system*" and explicitly recognizes energy storage as a form of energy supply infrastructure. Similarly, official plans that use the term "energy storage system" should:

- Explicitly reference *energy storage systems* as a distinct or complementary land use; and,
- Clarify whether zoning and land use permissions for energy storage facilities align with, or differ from, those for electricity generation.

Clear policies related to energy storage are increasingly important given its growing role in addressing reliability, peak demand, and system flexibility for the provincial grid.

Alignment Between Official Plans and Zoning

Municipalities should ensure that zoning by-laws and performance standards are consistent with official plan policies related to energy infrastructure. Alignment between planning documents:

- Improves predictability for proponents and residents;
- Supports more efficient development review; and,
- Reduces the need for ad hoc amendments during active procurement or project development phases.

Zoning provisions should clearly identify permitted uses, performance standards, setbacks, municipal study requirements, and municipal approval pathways for both energy generation and energy storage facilities where these uses are contemplated.

Consistency with PPS

Official plans should be consistent with energy-related provision in the PPS, avoiding costly and time-consuming appeals processes and confusion among proponents. For example, official plans should clearly identify the municipality's obligation to plan for and protect *planned corridors* for infrastructure, providing clarity to proponents on development restrictions and compatible uses.

Transparency and Upfront Direction

Overall, official plans should emphasize clarity, transparency, and upfront policy direction. Clear municipal policies:

- Help communities understand how energy projects fit within local planning objectives;
- Enable meaningful early engagement with proponents and Indigenous communities; and,
- Support alignment between municipal planning decisions and provincially identified energy system needs.

Providing this clarity at the official plan stage helps municipalities retain control over local land use outcomes while contributing to the coordinated delivery of energy infrastructure necessary to support growth, reliability, and long-term planning objectives.

Municipal Requirements and Responsibilities

Planning Act **Notice Requirements**

Written notice of proposed changes to zoning by-laws and plans of subdivision must be provided to electric utilities and LDCs and, with respect to all other planning matters, may be required where LDCs are the landowner within a certain distance of a proposal, or upon request of the LDC.

LDCs have the discretion to respond to notices and there are no timelines for LDCs to provide comments to municipalities. Municipalities are encouraged to reach out to their LDC to see if they have feedback to share.

Conditional Approval

Approval authorities, generally municipalities or planning boards, may require landowners to satisfy conditions as part of a draft plan of subdivision approval, including the conveyance of utility easements before final approval is provided.

Appeal Rights

The Ontario Land Tribunal (OLT) is an independent adjudicative tribunal responsible for resolving appeals and applications on a variety of land use planning and other matters. Under the *Planning Act*, the OLT is charged with the responsibility of adjudicating all land use planning appeals.

The *Planning Act* sets out appeal rights for different types of planning matters. LDCs are included in the definition of “specified persons”, which allows them to file appeals of certain planning matters. In some cases, specified persons are required to have participated in the local process prior to the decision to be able to appeal.

Municipal Energy Plans

The MEP program is designed to help Ontario municipalities better understand their energy use through a community energy planning process. The program supports the development of municipal or community energy plans, which are comprehensive long-term plans to improve energy efficiency, reduce energy consumption and greenhouse gas emissions, foster local energy solutions, and support economic development. Plans can support integrated planning – across energy sources, and between energy land use, transportation and housing planning processes.

Through the MEP program, municipalities can receive funding to develop a plan to support their community through planning for:

- Improving energy efficiency;
- Reducing energy consumption;
- Studying the impact of future growth on energy needs;
- Fostering renewable energy production and economic development; and,
- Powering growing economies through clean energy.

The program has two funding streams:

- **Stream 1:** For municipalities who require funding to create a new plan. The Province offers up to $90,000 per project or 50% of eligible costs incurred for each milestone, whichever is less. Municipalities have up to two years to complete their plans with an additional year offered for upper tier municipalities.
- **Stream 2:** For municipalities who require funding to update a pre-existing complete or partial community energy plan or other energy plan. For this, the Province offers up to $25,000 or 50% of costs, whichever is less. Stream Two applicants have more flexibility in developing milestones but must demonstrate how their proposed project is directly related to, and how it augments or enhances, their existing plan.

The program does not provide funding to implement existing plans.

Other Tools

Below are examples of additional municipal land use planning tools that may have linkages with, and potential impacts on, various aspects of the energy system.

Community Improvement Plans

A Community Improvement Plan (CIP) is a planning and economic development tool established under section 28 of the *Planning Act*. It enables municipalities to support the rehabilitation, redevelopment, and improvement of defined areas through a structured combination of policy direction and implementation tools.

Employment Areas

Planning authorities are required to plan for, protect, and preserve employment areas for current and future uses, and ensure that the necessary infrastructure, including energy infrastructure, is provided to support current and projected needs. Some municipalities will have a municipal or regional economic development plan that identifies future employment areas (beyond the planning horizon of the official plan), strategic sites for future investments, and strategies for attracting a range and mix of employment uses to meet the long-term needs of the municipality. Since employment areas are designated areas for manufacturing, industrial, and warehousing types of uses, they typically have unique energy needs that will need to be planned for.

3.3 Best Practices for Municipalities

Communication

Communication is a cornerstone of effective coordination between municipalities and energy sector participants. Improving communication requires a shift from ad hoc, project-specific exchanges to more structured, ongoing engagement. Early and continuous dialogue allows all parties to align expectations, identify potential constraints, and respond proactively to emerging needs. It also strengthens working relationships, which are critical for navigating complex planning and approval processes.

Key strategies to enhance communication with energy system partners include:

- **Participating in formal engagement processes**, such as the IESO's regional planning process and, where appropriate, monitoring or participating in OEB proceedings related to electricity and natural gas infrastructure, to stay informed of system needs and contribute local perspectives.
- **Establishing relationships early** with local energy partners, including LDCs, natural gas distributors, and district energy providers, to understand their planning cycles, requirements, and key contacts.
- **Participating in the OEB's gas-electric co-ordination information-sharing forum** to understand opportunities to contribute to electricity and natural gas utility planning, share best practices, and collaborate on improving coordination between gas and electricity planning.
- **Regularly sharing municipal growth plans**, including forecasts, intensification targets, and major development areas, so energy providers (e.g., LDCs, natural gas distributors, district energy providers) can anticipate and plan for future demand.
- **Providing timely updates on planning changes**, such as zoning amendments, boundary expansions, changes to transportation or climate change plans, and major infrastructure projects that may affect energy infrastructure needs or load growth.

- **Developing and maintaining an MEP** as a central reference point to guide discussions and align local priorities with energy system planning. MEPs can support integrated planning across energy sources and the integration of energy planning with other planning processes, such as land use, transportation, and housing, helping to support coordinated decision-making and communication.
- **Clarifying data needs and formats**, ensuring that information exchanged—such as development size, phasing, and timelines—is actionable and useful for energy system planning.
- **Leveraging consistent communication channels and tools**, such as regular check-ins, shared platforms, or standardized reporting templates being developed through the OEB gas-electric coordination forum, to improve transparency, reduce duplication, and enhance information exchange with utilities.

Timing of Municipal Inputs

Municipalities should aim to share information with LDCs and system planners at key milestones, including:

- During official plan reviews and updates;
- When preparing or updating growth forecasts and land needs assessments;
- At the initiation of secondary plans or major planning studies;
- When large or electricity-intensive developments are first identified;
- During regional electricity planning activities, including Needs Assessments and IRRPs; and,
- When LDCs and system planners are updating electricity demand forecasts or preparing DSPs.

Early and well-timed information sharing allows system planners to incorporate municipal growth assumptions into electricity planning processes before key decisions are made regarding infrastructure investments, resource procurement, and system design.

For electricity projects, with clear and relevant information sharing between LDCs, the IESO, developers, and municipalities, projects are more likely to succeed and have the required energy infrastructure available in a timely, cost-effective manner.

Coordination

Effective coordination between municipalities and energy sector stakeholders is essential to successfully implement the energy-related provisions of the PPS. Coordination goes beyond basic communication. It involves actively aligning plans, sharing timely and relevant information, and working collaboratively in areas of overlapping responsibility or shared objectives.

A key priority identified through various stakeholder engagements was the need for earlier and more consistent coordination, along with clearer expectations regarding roles, timelines, and information requirements. Municipalities are well-positioned to lead or convene coordination efforts by initiating dialogue early in the planning process and maintaining ongoing engagement throughout project lifecycles.

The OEB's gas-electric coordination information-sharing forum is also identifying the information that should be shared, developing standardized templates, and establishing a schedule for information sharing among municipalities, gas and electricity utilities, and the IESO. This initiative will support more consistent, timely, and actionable information sharing to improve energy planning in Ontario. Municipalities are encouraged to participate in this work.

Best Practices in Coordination

Initiate Early and Proactive Engagement

Municipalities should engage LDCs and other energy stakeholders early, well before formal development applications are submitted. Sharing information early in the planning stages, such as upcoming changes to official plans, zoning by-laws, growth forecasts, and infrastructure priorities, allows energy providers to plan for future capacity needs and reduces the risk of later project delays or redesigns.

Identify High-Impact Developments

Municipalities should prioritize early coordination with LDCs, gas distributors and system planners for developments that:

- Require significant electricity or natural gas capacity (e.g., large industrial facilities);
- Involve electrification of heating, transportation, or industrial processes;
- Are located in areas with known or potential electricity or natural gas capacity constraints; and/or,
- Are expected to be delivered within short timeframes.

Focusing coordination efforts on these types of projects can help ensure that potential infrastructure requirements are identified early and incorporated into planning processes.

For example, identifying a large industrial development early can allow LDCs and the IESO to assess whether new distribution or transmission infrastructure is required and begin planning accordingly.

Establish Multi-Stakeholder Working Groups

Creating new or participating in existing working groups that include municipalities, utilities, developers, regulators, and other relevant partners can support continuous, transparent dialogue. Examples of existing working groups include the OEB's gas-

electric coordination forum and the IESO's Regional Planning engagement meetings. These groups can:

- Identify and address potential conflicts early;
- Align infrastructure planning timelines;
- Share technical and policy updates; and,
- Develop joint solutions for complex or large-scale projects.

Working groups are particularly valuable in high-growth areas, for large or time-sensitive developments, or where projects span multiple jurisdictions.

Enable Structured and Project-Specific Information Sharing

In addition to ongoing relationship-building, coordination should include clear mechanisms for project-by-project information exchange. This may involve:

- Data-sharing templates or checklists;
- Defined points of contact within each organization; and,
- Regular coordination meetings at key project milestones.

Providing consistent and complete information helps all parties understand requirements, constraints, and timelines, improving overall efficiency.

Clarify Processes

Uncertainty in development processes can lead to delays and increased costs. Municipalities and energy stakeholders should work together to:

- Map out clear processes or key requirements;
- Identify process inefficiencies or duplication; and,
- Provide guidance on required studies, timelines, and approvals.

Clearer, more transparent processes reduce surprises for proponents and improve predictability for all stakeholders.

Invest in Relationships and Capacity-Building

Effective coordination requires trust and mutual understanding between all parties. Upfront investments in relationship-building can provide significant benefits. Regular meetings, joint training sessions, or shared planning exercises can significantly improve collaboration and problem-solving in projects.

Support the Development and Use of Shared Tools and Data

Tools such as cost-estimation frameworks, growth plans, capacity mapping, or integrated planning models can enhance coordination, but their adoption may depend on demonstrated value. Sharing proof points, case studies, and pilot results can build confidence among stakeholders and encourage broader uptake.

Focus Coordination Efforts Where They Are Most Needed

While coordination is beneficial in all contexts – including coordinating energy planning with land use, transportation and housing planning, it is especially critical for:

- Large-scale or complex developments;
- Projects with urgent timelines;
- Developments near municipal boundaries; and,
- High-growth communities with multiple competing demands.

In these contexts, active and structured coordination can prevent misalignment and ensure that infrastructure planning keeps pace with development.

Additional resources to support better coordination include OEB materials such as Improving the Electricity Planning Process in Ontario: Enhanced Coordination between Municipalities and Entities in the Electricity Sector. Page 5 and 6 of the document provide municipal planning information and identifies the MEP outputs that may contribute to distributors' load forecasts.

By moving beyond basic communication toward more active, structured coordination, municipalities and energy sector partners can better align their planning approaches, reduce risks, and support more efficient and sustainable community growth.

Collaboration

Collaboration represents a deeper level of partnership than coordination. While coordination focuses on aligning activities and sharing information in areas of overlap, collaboration involves stakeholders working toward shared goals, jointly shaping decisions, and actively problem-solving together. It typically brings together a broader range of participants across organizations—planning, engineering, operations, and leadership—to collectively address complex challenges and opportunities in land use and energy planning.

In the context of the PPS, enhanced collaboration is increasingly important to support growing energy demand, electrification, and the timely delivery of infrastructure to enable development. Collaborative approaches allow municipalities and energy sector stakeholders to move beyond reactive processes and toward more integrated, forward-looking planning.

Engaging with LDCs and System Planners

Municipalities can engage with LDCs and system planners through a range of formal and informal mechanisms, including:

- Establishing regular coordination meetings aligned with planning cycles;
- Circulating development applications for utility review;
- Sharing Geographic Information System (GIS) data or mapping of planned development areas;
- Identifying municipal contacts responsible for energy coordination;

- Participating in the OEB's gas-electric coordination information sharing forum; and,
- Participating in consultations related to regional planning processes.

Municipal inputs provided to LDCs are also used in regional planning processes, including IRRPs, where broader system solutions are evaluated.

Processes such as the MPIC provide additional opportunities for municipalities to share information about major developments and emerging electricity demand early in the planning process.

Best Practices for Strengthening Collaboration

Energy and Growth Planning

LDCs, natural gas distributors, and other energy providers should participate in the development of MEPs/CEPs. This collaboration can:

- Ensure that land-use plans reflect realistic energy infrastructure capacity and timelines;
- Support improved electricity load forecasting and system planning; and,
- Enable utilities to align their investment strategies with municipal priorities.

Align Land-Use and Energy Planning with Growth and Electrification Projections

A core outcome of effective collaboration is ensuring that energy infrastructure is available when and where it is needed. By working together, municipalities, utilities, and developers can:

- Synchronize development timelines with infrastructure upgrades;
- Identify and plan for electrification (e.g., electric heating, EV charging, Distributed Energy Resources (DERs));
- Achieving greater consistency between the planning inputs of different planning entities;
- Encourage conservation and energy efficiency; and,
- Reduce costly delays, redesigns, or last-minute capacity constraints.

This alignment is particularly important in high-growth areas, where demand for electricity and other energy services is increasing rapidly.

Establish Formal and Informal Collaborative Forums

Collaboration can be supported through a range of structured and flexible forums, including:

- Location-based working groups focused on specific growth areas or corridors;
- Utility coordination committees that meet regularly to address cross-cutting issues; and,

- Multi-stakeholder advisory groups contributing to municipal or regional energy plans.

Many municipalities already engage in informal meetings with utilities and developers; formalizing these into recurring forums can improve consistency, accountability, and long-term planning outcomes. Municipalities are also encouraged to engage with utilities, the IESO, and Indigenous communities through the OEB's gas-electric coordination information sharing forum.

Leverage Municipal Leadership as a Convener

Municipalities play a central role in collaboration due to their control over land use planning processes and access to key data (e.g., zoning, growth projections). As conveners, municipalities can:

- Bring together diverse stakeholders with shared interests;
- Facilitate alignment between planning and energy system priorities; and,
- Bridge gaps between technical, policy, and development perspectives.

Strengthening connections between municipal planning staff and utility planning and engineering teams is particularly important.

Explore Joint Governance and Strategic Alignment Opportunities

Where feasible, deeper collaboration can be supported through governance structures that formalize relationships between municipalities and utilities. The benefits include:

- Improve alignment between municipal policy objectives and utility decision-making;
- Provide early insight into infrastructure constraints and investment plans; and,
- Support more coordinated approaches to economic development and growth.

Even where formal governance changes are not pursued, establishing clear channels for strategic dialogue between senior municipal and utility leadership can yield similar benefits.

Build On Existing Utility Practices That Support Collaboration

Many LDCs, particularly in high-growth areas, already take proactive steps to collaborate with municipalities and developers. These practices can serve as models for broader adoption and include:

- Dedicated municipal relations or project teams;
- Regular coordination meetings with municipal staff;
- Participation in economic development initiatives and industry associations; and,
- Use of third-party resources or flexible design approaches to accelerate projects.

Balance Collaboration with Resource Considerations

While collaboration offers significant benefits, it may not be necessary or feasible for all municipalities or projects Collaborative efforts are most valuable for:

- Complex or large-scale developments;
- Emerging or less well-understood issues (e.g., electrification pathways); and,
- Long-term planning initiatives such as MEPs and CEPs.

By fostering a collaborative approach, municipalities and energy sector stakeholders can better align infrastructure investments with growth, support electrification readiness, and enable more predictable, efficient development outcomes. Strong collaboration helps shift planning from reactive to proactive, ensuring that communities are better prepared for future energy needs.

Appendix A: Glossary of Terms

A.1 PPS Definitions

Alternative Energy System: means a system that uses sources of energy or energy conversion processes to produce power, heat and/or cooling that significantly reduces the amount of harmful emissions to the environment (air, earth and water) when compared to conventional energy systems.

Energy Storage System: means a system or facility that captures energy produced at one time for use at a later time to reduce imbalances between energy demand and energy production, including for example, flywheels, pumped hydro storage, hydrogen storage, fuels storage, compressed air storage, and battery storage.

Impacts Of A Changing Climate: means the present and future consequences from changes in weather patterns at local and regional levels including extreme weather events and increased climate variability.

Infrastructure: means physical structures (facilities and corridors) that form the foundation for development. Infrastructure includes: sewage and water systems, septage treatment systems, stormwater management systems, waste management systems, electricity generation facilities, electricity transmission and distribution systems, communications/telecommunications including broadband, transit and transportation corridors and facilities, active transportation systems, oil and gas pipelines and associated facilities.

Major Facilities: means facilities which may require separation from sensitive land uses, including but not limited to airports, manufacturing uses, transportation infrastructure and corridors, rail facilities, marine facilities, sewage treatment facilities, waste management systems, oil and gas pipelines, industries, energy generation facilities and transmission systems, and resource extraction activities.

On-Farm Diversified Uses: means uses that are secondary to the principal agricultural use of the property, and are limited in area. On-farm diversified uses include, but are not limited to, home occupations, home industries, agri-tourism uses, uses that produce value-added agricultural products, electricity generation facilities and transmission systems, and energy storage systems.

Planned Corridors: means corridors or future corridors which are required to meet projected needs, and are identified through provincial transportation plans, preferred alignment(s) determined through the *Environmental Assessment Act* process, or identified through planning studies where the Ministry of Transportation, Metrolinx, Ministry of Energy and Mines, Ontario Northland, Ministry of Northern Development, or IESO or any successor to those ministries or entities is actively pursuing, or has completed, the identification of a corridor. Approaches for the identification and

protection of planned corridors may be recommended in guidelines developed by the Province.

Renewable Energy Source: means an energy source that is renewed by natural processes and includes wind, water, biomass, biogas, biofuel, solar energy, geothermal energy, and tidal forces.

Renewable Energy System: means a system that generates electricity, heat and/or cooling from a renewable energy source.

Appendix B: Key Provincial Policy and Legislation

This section identifies the policy and legislation that applies to land use and energy systems and infrastructure. Ontario's land use and energy systems are governed by a coordinated set of provincial policies, legislation, and regulatory frameworks. Together, these policies and legislation establish the roles and responsibilities of planning authorities, energy agencies, utilities, and regulators, and shape how land is used and how energy infrastructure is planned, protected, and integrated with growth and development. For municipalities, these frameworks establish both requirements and opportunities to coordinate land use planning with energy system planning. This section provides a high-level overview of the key provincial policies and the various pieces of legislation that are relevant to municipal energy and land use planning.

B.1 Planning Act

The *Planning Act* is provincial legislation that sets the ground rules for land use planning in Ontario and describes how land uses may be controlled. The "supply, efficient use and conservation of energy and water" is identified as a "matter of provincial interest" under section 2 of the *Planning Act*. Decision-makers must have regard to these matters when carrying out their responsibilities under the Act.

The PPS is a policy statement issued under section 3 the *Planning Act* that requires all decisions affecting planning matters be consistent with policy statements issued under the Act.

Provincial plans (e.g., the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan) build upon the PPS's policy foundation. Provincial plans provide additional land use planning policies to address issues facing specific geographic areas in Ontario and are to be read in conjunction with the PPS. They take precedence over the policies of the PPS to the extent of any conflict, except where the relevant legislation provides otherwise.

All decisions affecting planning matters must conform with provincial plans.

B.2 Provincial Planning Statement, 2024

The PPS applies Province-wide and provides policy direction on matters of provincial interest related to land use planning and development. The provincial policy-led planning system recognizes and addresses the complex inter-relationships among environmental, economic, health, and social factors in land use planning. The PPS supports a comprehensive, integrated, and long-term approach to planning, and recognizes linkages among policy areas by providing provincial policy direction on key land use planning issues that affect communities, including planning for the appropriate transportation, water, sewage, energy, and other infrastructure necessary to accommodate current and future needs, engaging with Indigenous communities to facilitate knowledge-sharing, support consideration of Indigenous interests in decision-

making on land use planning matters and protecting Aboriginal and treaty rights, and building more housing where it is needed among other things.

The PPS is to be read in its entirety, and the relevant policies are to be applied to each situation. Energy infrastructure and energy-related considerations are embedded throughout the PPS (e.g., policies addressing energy conservation and efficiency, infrastructure planning and energy supply). When more than one policy is relevant, a decision-maker should consider all of the relevant policies to understand how they work together. The language of each policy, including the Implementation and Interpretation policies, will assist decision-makers in understanding how the policies are to be implemented. These policies assist in the consideration of balancing priorities, such as planning for infrastructure with, for example, the protection of natural features/areas and prime agricultural areas.

A tangible example is that PPS policies require planning authorities to plan to reduce greenhouse gas emissions and prepare for the *impacts of a changing climate* through approaches that support energy conservation and efficiency and the achievement of compact, transit-supportive and complete communities. PPS policies also support consideration of opportunities to optimize existing and planned infrastructure and require planning authorities to plan for and protect corridors and rights-of-way for infrastructure, including energy infrastructure, to meet current and projected needs. All this means that municipalities are required to plan growth in a way that can be supported by infrastructure, including energy generation and storage facilities and transmission systems. The PPS requires that planning authorities plan to meet projected needs for a time horizon of at least 20 years, but not more than 30 years, informed by provincial guidance and that infrastructure planning may extend beyond this time horizon.

Energy-Related Policies in Ontario's Provincial Planning Statement, 2024

Below are excerpts from the PPS that are applicable to energy infrastructure development, as well as their implications. For ease of reference these excerpts are presented in order in which they appear in the PPS. Select definitions used in the PPS can be found in Appendix A.

2.9.1. Planning authorities shall plan to reduce greenhouse gas emissions and prepare for the *impacts of a changing climate* through approaches that:

a) support the achievement of compact, *transit-supportive*, and *complete communities*;
b) incorporate climate change considerations in planning for and the development of *infrastructure*, including stormwater management systems, and *public service facilities*;
c) support energy conservation and efficiency;
d) promote *green infrastructure*, *low impact development*, and *active transportation*, protect the environment and improve air quality; and

e) take into consideration any additional approaches that help reduce greenhouse gas emissions and build community resilience to the *impacts of a changing climate*.

3.1.1 *Infrastructure* and *public service facilities* shall be provided in an efficient manner while accommodating projected needs. Planning for *infrastructure* and *public service facilities* shall be coordinated and integrated with land use planning and growth management so that they:

a) are financially viable over their life cycle, which may be demonstrated through asset management planning;
b) leverage the capacity of development proponents, where appropriate; and
c) are available to meet current and projected needs.

3.1.2 Before consideration is given to developing new *infrastructure* and *public service facilities*:

a) the use of existing *infrastructure* and *public service facilities* should be optimized; and
b) opportunities for adaptive re-use should be considered, wherever feasible.

3.3.1 Planning authorities shall plan for and protect corridors and rights-of-way for *infrastructure,* including transportation, transit, and electricity generation facilities and transmission systems to meet current and projected needs.

3.3.3 Planning authorities shall not permit *development* in *planned corridors* that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified. New *development* proposed on *adjacent lands* to existing or *planned corridors* and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, or where avoidance is not possible, minimize and mitigate *negative impacts* on and *adverse effects* from the corridor and transportation facilities.

3.3.5 The co-location of linear *infrastructure* should be promoted, where appropriate.

3.5.1 *Major facilities* and *sensitive land uses* shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential *adverse effects* from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of *major facilities* in accordance with provincial guidelines, standards and procedures.

3.5.2 Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other *major facilities* that are vulnerable to encroachment by ensuring that the planning and *development* of proposed adjacent *sensitive land uses* is only

permitted if potential *adverse affects* to the proposed *sensitive land use* are minimized and mitigated, and potential impacts to industrial, manufacturing or other *major facilities* are minimized and mitigated in accordance with provincial guidelines, standards and procedures.

3.8.1 Planning authorities should provide opportunities for the development of energy supply including electricity generation facilities and transmission and distribution systems, *energy storage systems*, district energy, *renewable energy systems*, and *alternative energy systems*, to accommodate current and projected needs.

B.3 *Electricity Act, 1998*

The *Electricity Act* establishes the public policy objectives which guide decision-making across government agencies and regulators, and the overall structure and operating framework of Ontario's electricity system. The *Electricity Act* also governs how Ontario plans, builds, and operates the electricity system. This contrasts with the PPS which governs land use planning decisions (e.g., how land use accommodates infrastructure), which can include electricity infrastructure. In combination, both are to ensure that land use planning and electricity system planning are aligned.

The *Electricity Act* establishes the IESO, the not-for-profit Crown corporation responsible for managing Ontario's power system and wholesale electricity market and sets out provincial objectives for electricity. The IESO's key objectives include:

- Reliability and adequacy of electricity supply;
- Consumer protection (price, quality, reliability);
- Economic efficiency and sustainability;
- Conservation, energy efficiency, and demand-side management;
- Support for cleaner and renewable energy; and,
- Electrification and emissions reduction.

The *Electricity Act* also has provisions requiring the Minister to develop integrated energy plans on 5-year cycle, to set out policy priorities and actions to meet Ontario's energy needs over the long-term. *Energy for Generations,* published in June 2025, was the first integrated energy plan under the current *Electricity Act* requirements.

B.4 *Ontario Energy Board Act, 1998*

The *Ontario Energy Board Act* (OEBA) is the legislative framework that governs how electricity and natural gas are economically regulated in Ontario. It establishes the OEB as the independent regulator of the provincial electricity and natural gas systems. In electricity, the OEB is responsible for regulating the provision of electricity services, allocating energy infrastructure costs (e.g., between ratepayers and shareholders), regulating electricity transmitters and distributors rates, and for licensing Unit Sub-Metering Providers, electricity generators, and other parties. In natural gas, the OEB is responsible for regulating the provision of natural gas services, the development and

maintenance of transmission, distribution, and storage infrastructure, and the recovery of costs where those activities fall under provincial jurisdiction. The OEBA was recently amended to require that the OEB regulate the electricity sector in a way that supports economic growth consistent with provincial policy.

While the *Electricity Act* and the *OEBA* operate separately from the *Planning Act*, they frequently intersect with municipal planning decisions when energy infrastructure is to be sited on land, can affect development potential, or must be coordinated with growth and servicing strategies. The EA, OEBA, and the PPS operate in parallel policy alignment and intersect when it comes to energy infrastructure projects that require or impact land-use planning to ensure that land use planning and electricity system planning are aligned. For example, the *Electricity Act* governs how Ontario plans, builds, and operates the electricity system, while the PPS governs how land use planning decisions accommodate infrastructure, including energy infrastructure.

Other legislation that may be engaged includes *Species at Risk Act*, Conservation Authority approvals, Public Lands disposition, and the *Far North Act*. In addition, a transmitter may need to seek other approvals and permits, as applicable, from other agencies (e.g., Conservation Authorities, Electrical Safety Authority).

Appendix C: Ontario’s Energy System

This section provides a high-level description of the parties who participate in Ontario's energy system and their respective roles, duties, and processes. There is a focus on electricity as municipalities are often involved in electricity planning processes as electrical infrastructure and generation projects often interact with local land use planning decisions. In contrast, municipalities have a much more limited role in the natural gas system. Their involvement is generally limited to granting and periodically renewing a natural gas utility’s permission to use municipal roads and other public lands to deliver natural gas, which typically occurs every 20 years.

C.1 How the Energy System is Structured

Ontario's energy system is made up of many organizations, resources, and types of infrastructure that work together to deliver energy to homes, businesses, industries, and communities. The provincial government sets policy, regulators oversee the sector, and organizations such as the IESO plan for future electricity needs and operate the grid. Energy is supplied through a mix of resources, including electricity, natural gas, hydrogen, renewable fuels, oil, gasoline, and emerging technologies, and is delivered through transmission, distribution, storage, and fuel networks. Together, public and private sector entities help ensure that Ontario's energy system remains reliable, affordable, secure, and able to support future growth.

C.2 Energy Sector Partners

This section discusses the roles and duties of 3 key institutions responsible for setting and fulfilling provincial energy policy:

- The Ministry of Energy and Mines;
- The Independent Electricity System Operator; and,
- The Ontario Energy Board.

Other electricity sector participants include generators, transmitters, distributors, retailers, storage providers, and DERs who individually are responsible for providing service to customers. This section does not deal with natural gas distributors as municipalities engage with them pursuant to the *Municipal Franchises Act*. This guidance does not discuss energy sources that are provided through competitive markets (e.g., oil, gasoline, propane) and does not consider emerging fuels (e.g., hydrogen).

Ministry of Energy and Mines (MEM)

MEM provides policy direction and legislative oversight for Ontario’s energy system. It sets long-term energy policy and strategic priorities for the Province, including through the development of integrated energy plans.

As part of its role in setting overarching energy policy for the Province, the ministry:

- Supports the planning and policy framework for pipeline infrastructure that transports natural gas, oil, and other energy products to homes, businesses, and industry across Ontario;
- Supports electricity, natural gas, propane and heating oil energy efficiency and conservation, and electricity and natural gas demand-side management programs;
- Oversees the regulatory framework for electricity pricing and develops policies to reduce electricity bills for Ontario consumers and businesses;
- Supports the development and proliferation of clean technology and innovation in the electricity sector;
- Engages with Indigenous partners, LDCs, transmission companies and energy agencies in energy sector decisions; and,
- Drives efficiencies and performance for consumers.

For electricity in particular, MEM issues Ministerial Directives to the IESO (e.g., to authorize procurements or other actions required to address system needs identified through the IESO's APO, reliability assessments, and other planning processes) and to the OEB (e.g., Integrated Energy Plan Directive and Letters of Direction).

MEM'S Role in the One Window Planning Process

The Province plays an important role in developing and implementing land use planning policies and ensuring that provincial interests are considered in planning decisions. Where the Province is the approval authority, provincial ministries provide coordinated input, review, and approvals through the One Window Planning Process.

The provincial One Window Planning Service, led by the Ministry of Municipal Affairs and Housing (MMAH), provides municipalities, planning boards, developers, and the public with one-stop access for provincial planning services, integrating the perspective of multiple ministries with land use planning interests, including MEM. Like all ministries who rely on the One Window Planning process, MEM provides comments on municipal official plans and official plan amendments. Planning authorities are required to update their official plans to be consistent with the PPS 2024 through their next regularly scheduled official plan review.

MEM may also comment on other municipal planning matters, including applications for zoning by-law amendments, draft plans of subdivision, and site plan applications, etc. where MEM has a specific provincial land use planning interest.

Independent Electricity System Operator

The IESO plans and operates the bulk electricity system. Bulk system planning considers the capacity and location of large power plants, high-voltage transmission lines, and inter-jurisdictional transmission connections in relation to regional demand

forecasts, broader market outlooks, public policies shaping electricity demand, and emerging technologies to assess whether Ontario's transmission system can deliver electricity from generation and storage resources to customers, meet all applicable reliability standards, and can supply growing demand. This process is IESO led and supported by transmitters. For more information about bulk system planning please visit the IESO website.

The IESO is also responsible for:

- Preparing individual regional plans for Ontario's 21 electricity regions;
- Forecasting provincial demand;
- Providing a reliability assessment;
- Analyzing resource adequacy;
- Preparing the Annual Planning Outlook (APO);
- Engaging with stakeholders;
- Delivering conservation and demand-side management programs;
- Conducting procurements for electricity resources including commodity and capacity (the capability to produce the energy commodity) in accordance with Ministerial Directives;
- Operating the electricity market; and,
- Managing system reliability.

The IESO plays a key role in managing the bulk system through its administration of its connection assessment process. This process applies to new and/or modified electricity consumers (e.g., large industrial customers) or generators and supports the IESO in fulfilling it responsibility for ensuring that these new connections will not adversely impact the reliability of the bulk electricity system. This process assesses system impacts, identifies any required system reinforcements or operating constraints, and coordinates with transmitters and distributors to support the reliable integration of both transmission-connected projects and distribution-connected projects greater than 10 MW.

Ontario Energy Board

The OEB is the independent regulator that oversees Ontario's electricity and natural gas distributors. It is responsible for approving the rates that utilities charge customers, licensing sector participants (e.g., distributors, storage entities), and granting leave to construct for certain infrastructure.

The OEB regulates the IESO by granting their licence to direct the operation of the transmission system in Ontario and facilitate the IESO-administered markets. The OEB regulates LDCs by granting their licence applications, authorizing rates, and monitoring their safety, reliability, and operational performance.

Non-Government Partners

Non-government partners include generators (who can be connected to the bulk system or to distribution infrastructure), electricity distributors, electricity transmitters, electricity retailers, storage entities, and DERs.

Electricity Independent Power Producers and Electricity Proponents

Electricity independent power producers (IPPs) and other electricity proponents are private entities that develop, own, and operate electricity generation, storage, or related infrastructure projects. IPPs and these proponents typically respond to IESO procurements, or other provincial initiatives, and are responsible for project development, financing, construction, operation, and decommissioning. IPPs must engage with municipalities, Indigenous communities, and other stakeholders to obtain required municipal planning approvals and provincial permits. In some circumstances, other electricity proponents will also engage with municipalities.

Bulk Connected Generators

Among the generators connected to Ontario's bulk system are Ontario Power Generation, Bruce Nuclear Generating Station, Portlands Energy Station, and Goreway Generating Station.

Electricity Transmitters

In Ontario, electricity transmission is provided by 10 licensed transmitters. Hydro One serves over 98% of the Province's transmission needs. Transmitters provide service at voltages >50kV and are responsible for operating the infrastructure that moves energy from a large generator to either a large load or a point of delivery (e.g., a city gate) or that moves bulk amounts of electricity between points. The IESO is responsible for identifying the need for new or improved transmission infrastructure. Under the *Electricity Act*, the Minister of Energy has powers to designate the proponent responsible for designing, building, testing, and commissioning transmission infrastructure.

Local Distribution Companies

LDCs deliver electricity at voltages <50kV to homes and businesses within defined service areas. They are responsible for building, operating, and maintaining the local distribution system that connects customers to the electricity grid (including poles, transformers, and underground cables), connecting new customers, upgrading service capacity, relocating infrastructure to support development and transportation projects, and manage inspections, maintenance, outages, and asset replacement to help ensure a safe and reliable electricity supply. They provide customer service and billing. Because they are the primary point of contact with customers, LDCs also play an important role in implementing provincial electricity policies and programs.

At the local or community level, LDCs conduct electricity system planning. LDC electricity system planning requires reliable information on the amount, location, and timing of the electricity required.

Appendix D: Electricity System Projects

D.1 Introduction

This section discusses some of the approaches used to implement electricity projects and provides step-by-step illustrative examples. Parties, including municipalities, are not guaranteed either connection or access to electricity capacity.

D.2 Electricity System Connections and Connection Processes

Different devices use different connections to the electricity system. For example, large generators and consumers with very large electricity requirements often connect to the transmission system (also known as the bulk system) while smaller generators, DERs, and most consumers connect to the distribution system.

Distribution Connections

The distribution system is the “last mile” of the electricity system. It is the infrastructure that delivers electricity to nearly all end users. LDCs who are planning to connect end users to the distribution electricity grid require information on the timing, location, and size of load(s) or device(s) to be connected so that the necessary infrastructure can be designed, constructed, and energized. Distribution-connected projects are commonly categorized as >10 MW and <10MW; with >10MW projects going through the IESO's connection process. Loads <10MW that will connect to a distributor’s grid are typically the subject of multi-step and often iterative connection process where engagement by and coordination between the LDC, developers, other utilities, and municipalities is encouraged. The diagram below provides a summary of the process for >10 MW connections.

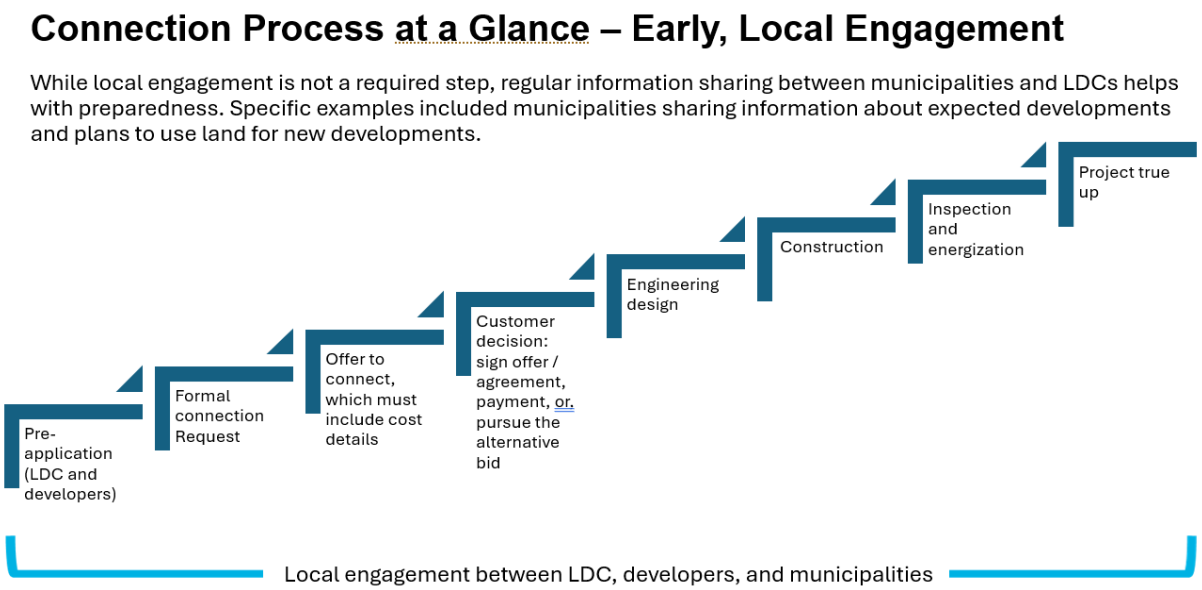


Figure 2 - Distribution Connection Process

The connection process starts with identifying the LDC that is licensed to serve the location where a potential customer wants to connect to the electricity grid. The OEB provides 2 tools to assist end users:

- Ontario Electricity and Natural Gas Utilities – Service Area Map is an interactive tool that based on an address can identify the electricity or natural gas distributor and their contact information.
- 2 versions of interactive Centralized Capacity Information Maps that can provide information on:
    - **Available Load Capacity**: the load capacity map identifies areas that can accommodate new or expanded electricity demand.
    - **Available DER Hosting Capacity**: The DER capacity map identifies areas that can accommodate new or expanded DERs (e.g., solar panels, battery storage) connections.

If a connection request requires an LDC to make system upgrades, the costs are recovered from the customer who benefits from the upgrade. This ensures existing customers do not inappropriately subsidize a new customer. The cost responsibility rules and methodology for calculating system upgrade costs are set out in the OEB's Distribution System Code (DSC).

Once the required payments are remitted to the LDC, the LDC can begin its work. The time required to complete and energize a connection can vary depending on the scale of needed infrastructure, the connection's physical proximity to existing infrastructure, the location, and magnitude of available connection capacity.

If there is neither existing electricity capacity nor the infrastructure necessary to accommodate a connection request, and the LDC needs to build new infrastructure to connect the customer, this new infrastructure is known as a system expansion (e.g., when new lengths of line must be constructed). When an expansion is needed to accommodate the connection request, the project proponent may be required to pay for the full cost of the expansion; in this case, the project proponent may, under certain conditions, be eligible to recover some of the up-front costs for building the infrastructure from future customers who connect to that infrastructure.

In comparison, the costs of a system enhancement (i.e., a modification to the distribution system that is made to maintain or improve system characteristics such as reliability or power quality or to relieve system capacity constraints resulting, for example, from general load growth) is recovered through rates.

Below is a list of the key steps for customers to become connected to a distributor:

1. Customer requests to connect
    - Customer contacts LDC and requests connection.
    - LDC identifies if the request is a simple connection or whether a system expansion is needed.
    - LDC initiates the IESO Connection process for projects > 10 MW.
    - If a distribution system expansion is needed to fulfill the request, the LDC will conduct an economic evaluation to determine costs and potential capital contributions required.

2. Economic Evaluation to Determine Capital Contribution
    - The LDC assesses the project to determine if it is economic (e.g., by comparing the capital and incremental ongoing costs of the project to the distribution revenues that the customer will remit to identify whether a shortfall will exist).
    - If there is a shortfall, the LDC may request a capital contribution from the customer.

3. LDC Provides Offer to Connect to the customer or developer
    - If the LDC will ask the customer to provide a capital contribution:
        - The LDC must advise the customer that they are to choose whether the LDC will build all of the required electricity infrastructure or if the customer will elect to build a portion of the required infrastructure.
        - The customer provides a deposit.
        - If the customer elects to build a portion of the required infrastructure, the LDC inspects and energizes it, and the customer guarantees the infrastructure.
    - If the LDC does not require that the customer provide funding, the LDC builds the infrastructure.

LDCs have an obligation to connect customers within certain timelines. They are required to:

- Respond to customer connection request within 15 calendar days;
- Provide an initial Offer to Connect within 60 calendar days (at no cost to the customer);
- Complete a connection for a new service request for a low voltage (<750 volts) service within 5 business days provided that all applicable service conditions are met; and,
- Complete a connection for a new service request for a high voltage (>750 volts) service within 10 business days provided that all applicable service conditions are met.

A specific list of information to be included in an Offer to Connect, including costs and assumptions associated with the costs is provided in Appendix B and in Part 3 of the DSC. Each LDC's Conditions of Service, a document that outlines the rules, rights, and obligations for both the LDC and its customers, provide its specific connection related information.

The steps involved in connecting a customer are often iterative and not linear, and throughout each step of the connections process, local engagement, and coordination is encouraged among the LDC, developers, other utilities, and municipalities.

Transmission Connections

Customers that may require a transmission connection are strongly advised to meet with their local transmitter as early as possible to discuss options. They are also encouraged to meet with the IESO to discuss their load and connection requirements. This early information sharing can provide the IESO, Ontario's system planner, with a more complete and forward-looking view of electricity demand, which helps to inform infrastructure planning, connection assessments, and coordination among utilities.

The transmission connection process has several steps and engages many parties. In general, the transmission connection process operates on a "first ready, first served" basis (for example, customers who fulfill certain requirements early will receive a capacity commitment before those customers who fulfill them later).

When a customer is ready to begin the process to connect to the transmission system, they must first submit an application to the relevant transmitter and to the IESO. This step can be performed by either the customer or the party who will be responsible for constructing the required infrastructure. The IESO will perform a System Impact Assessment (SIA), a mandatory assessment of the impact of the proposed connection on the reliability of the integrated power system and that identifies the technical specifications needed for the project to connect (e.g., any required mitigation measures/upgrades to address adverse impacts). Mitigation measures/upgrades are typically included as conditions of connection in the IESO's Notice of Conditional

Approval (NOCA). The NOCA provides the customer with assurance that they can connect to the system if they meet the conditions stated in the NOCA. It does not guarantee access to capacity on the grid.

The local transmitter will complete a Customer Impact Assessment (CIA) and submit it to the IESO. The CIA identifies any significant impacts on other affected transmission customers and allows the affected parties to bring forward any concerns that they may have.

The IESO can commit capacity to a customer after the customer satisfies the committed project criteria set out in IESO Market Manual 1.4: Connection Assessment and Approval. For example, one step to achieve committed status is to execute a Connection and Cost Recovery Agreement (CCRA) with the transmitter that owns the facilities into which a connection is being made. The CCRA is the transmitter's cost and scheduling commitment to the customer. After the CCRA is executed, the customer/proponent must obtain various permits (e.g., Environmental Assessments, leave to construct approval, other applicable regulatory approvals, real estate and property agreements, land acquisition agreements) before construction can commence.

Once construction is completed, the customer will work with the IESO to test the installed equipment at the facility to ensure it meets the meets the requirements and expectations that were established in the NOCA and to receive any necessary authorizations pursuant to commissioning the assets.

Municipalities can play a role in informing electricity system planning work by sharing information and ongoing updates about early-stage projects in their jurisdictions with the IESO's MPIC (which was launched in May 2026). This new forum, comprised of provincial ministries and utilities, is designed to support more informed and responsive infrastructure planning by improving visibility into where and when electricity demand is emerging in Ontario.

D.3 Project Processes

Electricity Distribution Projects

The diagram below provides a simple representation of the infrastructure that links generators to end users. The portion in the box is pertinent to the distribution sector.

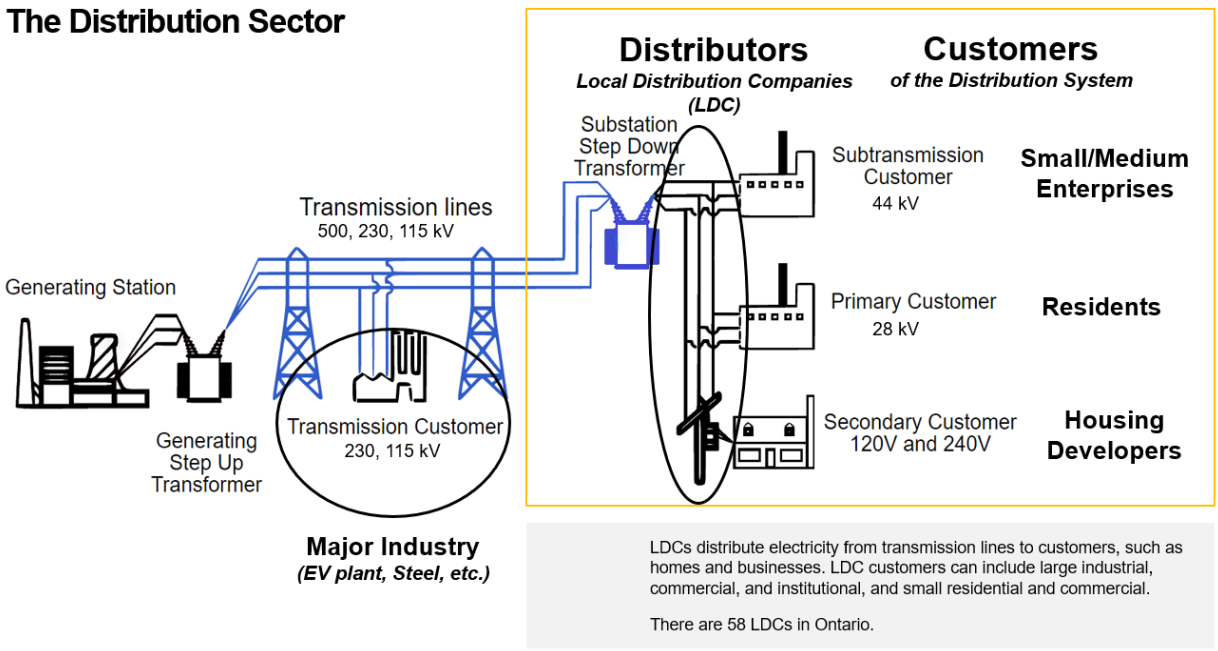


Figure 3 - Distribution Sector Diagram

Ontario's LDCs invest in infrastructure that is needed to connect new customers, to replace/upgrade existing infrastructure, and to manage changing customer needs.

Municipalities can play a role in informing electricity system planning work by sharing information and ongoing updates about early-stage zoning decisions, sharing details of development projects in their jurisdictions with the LDC(s) responsible to serve that service area, and sharing details of their permitting processes and timelines.

Electricity Transmission Projects

Once a specific transmission infrastructure project has been recommended through the bulk or regional planning process, the transmitter of record or a transmitter selected by the Minister of Energy initiates development work and seeks the necessary approvals and permits to initiate construction.

The project development process typically begins with the Class Environmental Assessment (EA) process for Transmission Facilities. Led by the transmitter, this process considers routing options, social and economic impacts, and concerns related to Indigenous culture and traditional knowledge. Through the Class EA process, the transmitter conducts detailed engineering and design, compares and assesses alternative routes, engages with potentially impacted landowners, and determines a preferred route for the infrastructure. The Class EA process is also the primary process through which rights-based consultation is conducted with potentially impacted Indigenous communities on transmission projects.

Simultaneously, the transmitter will seek leave to construct from the OEB. Through the leave to construct application process, the OEB considers the need for the infrastructure, its impact on costs, and its impact on the reliability and quality of service experienced by all electricity customers. As part of the leave to construct approval process, the OEB also determines cost responsibility using the Transmission System Code's (TSC) cost allocation rules for transmission infrastructure upgrades. Costs are allocated among provincial ratepayers, local ratepayers, and specific customers using the 'beneficiary pays' principle so that infrastructure costs are borne by those who benefit from the infrastructure and in proportion to those benefits. The cost allocation rules vary depending on whether the upgrade involves network facilities or connection facilities:

- **Network facilities** connect different regions of the Province together and benefit all customers in Ontario. New and modified network facilities are typically paid for by the transmitter and recovered from all Ontario ratepayers over time, through rates. In certain cases, the transmitter may require a capital contribution from specific customers for network upgrades where the upgrade is required to facilitate their connection and would not otherwise have occurred if not for the specific customer's need.
- **Connection facilities** can be either a line connection or a station connection. Whether line or station connection facilities are used, the connection serves a particular load, customer, or group of customers. Upgrades to connection facilities are typically paid for by the connecting customer(s) through an upfront capital contribution. It can happen that a connection facility upgrade will result in broader system benefits; in this situation, the costs may be paid in part through the rates charged by the transmitter.

The transmitter may also need to seek other approvals and permits, as applicable, including under the *Species at Risk Act*, Conservation Authority approvals, Public Lands disposition, the *Far North Act*, etc.

Following the required OEB, government, and other approvals, the transmitter will acquire land and/or land rights (e.g., from private landowners, a municipality, the Province) and will initiate construction. The OEB may issue a conditional leave to construct approval and may issue its approval before the completion of the Class EA process.

https://ero.ontario.ca/notice/026-0347

Please refer to 6.2.2 for a discussion of transmission connected projects.

Municipalities typically play a role in informing electricity transmission system planning work (e.g., by sharing information and ongoing updates about early-stage projects in their jurisdictions with the IESO's MPIC). Municipalities may wish to be aware of the location of transmission infrastructure, a transmitter's connection processes, and

timelines to be better able to support future load customers and/or generation developments.

Electricity Storage Projects

It is anticipated that distributors and their customers will be increasingly interested in the providing stand-alone Battery Energy Storage System projects (BESS) so that peak prices can be better contained and so that reliability and voltage control services, among other things, can be achieved locally and for a favourable costs. BESS projects must register on the Environmental Sector and Activity Registry (EASR). Whereas the LDC is typically exclusively responsible for providing the distribution infrastructure required by BESS projects, the transmission lines associated with BESS projects may require a Class EA for Transmission Facilities and, if appropriate, will include consultation with affected Indigenous communities. There may be other site-specific approvals as well (e.g., Environmental Compliance Approval for stormwater/wastewater).

If the BESS is integrated with a facility that will be approved under the Renewable Energy Approval (REA), the BESS component will also be approved under the REA process. The REA project may include the associated transmission line (up to a certain length).

The IESO has a suite of Electricity Demand-Side Management (eDSM) programs under the Save on Energy brand, which provide financial incentives and services in support of energy efficiency measures and upgrades, including for behind-the-meter solar photovoltaic and storage projects and DERs (please see section 6.3.4 below). For more information please see: https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives.

There are few requirements for distribution connected electricity storage projects. They are typically analyzed and evaluated as loads, for the purposes of designing and engineering the connection infrastructure and the control systems (e.g., the inverter technology used, the settings available). For example, Festival Hydro and Newmarket-Tay Hydro have deployed grid scale, grid connected batteries.

Municipalities can play a role in planning and siting electricity storage system projects by having clear policies and practices with respect to both. These projects will benefit from comprehensive planning, siting, and approval processes that are complete, clear, and well communicated.

Distributed Energy Resources

Residential and business customers are increasingly investing in DERs (e.g., rooftop solar panels, batteries, smart thermostats, EVs) to manage costs and meet their energy needs and in some situations, to offer a cost-effective resource to the grid (e.g., to support local area system efficiency, resiliency, reliability). They can provide electricity where it is needed and/or adjust loads to better match supply and demand. Relative to

other technologies, DERs or NWSs can be deployed quickly, may be more cost-effective than traditional infrastructure (like traditional poles and wires or substation upgrades), and can complement the Province's large power plants (e.g., nuclear, hydro).

DERs/NWSs situated 'behind-the-meter' have fewer permits and enabling orders. Permitting and approvals to install DERs, which often includes a grid connection with the local distributor, is an assessment by the local utility, municipal building permits, and Electrical Safety Authority (ESA) inspections. Depending on the size and location of the project (e.g., ground-mounted solar), provincial approvals may also be required, and siting requirements may apply.

An example of a customer-focused option that relies on DERs is net metering. In simple terms, it is a billing arrangement between an electricity distributor and eligible participants whereby the participants are able to offset their electricity consumption by generating electricity on-site from a renewable energy source (e.g., solar panels) for their own use, and who are able to earn bill credits for the electricity they send or export to the distribution system. The IESO's suite of eDSM programs under the Save on Energy brand are another example; they provide financial incentives and services in support of DERs (please see: https://saveonenergy.ca/For-Business-and-Industry/Programs-and-incentives).

Municipalities can play a role in planning and siting DER/NWS projects by having clear policies and practices. These projects will benefit from comprehensive planning, siting, and approval processes that are complete, well communicated, and well supported.

Electric Vehicle Charging

EV adoption is an emerging source of electricity demand that has direct implications for municipal land-use planning and infrastructure coordination. Under the PPS, municipalities should ensure that energy supply, transmission, and distribution infrastructure is planned, protected, and coordinated to support projected needs (PPS Policy 3.8). Municipal land-use decisions, including growth patterns, density, parking standards, and permitted land uses, can materially influence where large scale EV charging infrastructure is required and how efficiently it can be delivered.

Official plans, secondary plans, and zoning by-laws play a critical role in enabling the timely provision of EV charging infrastructure. Municipalities may support PPS objectives by ensuring that EV charging stations are permitted in appropriate locations as-of-right, including residential, commercial, employment, institutional, mixed-use, transit-oriented, and freight-related areas. Planning frameworks that support compact, mixed-use development and reduced reliance on private vehicles can also influence the scale, location, and load profile of charging infrastructure. Conversely, restrictive zoning permissions, reliance on site-specific amendments, or inconsistent development standards may delay deployment, increase costs, and create uncertainty for both developers and electricity distributors.

Municipal planning decisions related to EV readiness in new developments, including policies affecting parking supply, shared parking, on-street parking, and multi-unit residential buildings, may also affect future electricity and gasoline demand and bills, infrastructure needs, greenhouse gas bills, and energy security. Where municipal policies are likely to accelerate EV adoption or concentrate charging demand in specific areas, early coordination with electricity distributors can help ensure that land-use planning and electricity system planning are aligned. This also ensures consistency with PPS direction to coordinate infrastructure planning across jurisdictions and sectors.

Key Considerations for Municipal Planners

When developing official plans, zoning by-laws, or undertaking major planning initiatives, municipalities could consider:

- How growth assumptions, density, parking standards, and transportation policies may influence future EV adoption, electricity demand and bills, and greenhouse gas emissions;
- Whether municipal policies or planned developments are likely to create concentrated EV charging loads that would benefit from early coordination with the local electricity distributor;
- What municipal information (e.g., development approvals, growth forecasts, EV-related policies) could support more accurate electricity load forecasting by LDCs and regional planners; and,
- How siting decisions for large or high-capacity charging installations may affect connection costs, timelines, and local electricity system constraints.

Municipalities may wish to consult the Centralized Capacity Information Map, before consulting with the appropriate LDC.

Municipalities can play a role in informing the planning for and siting of EV charging infrastructure by sharing information, processes, and ongoing updates. Municipalities can support these investments by providing comprehensive planning documents, siting, and approval processes that are complete, well communicated, and well supported.