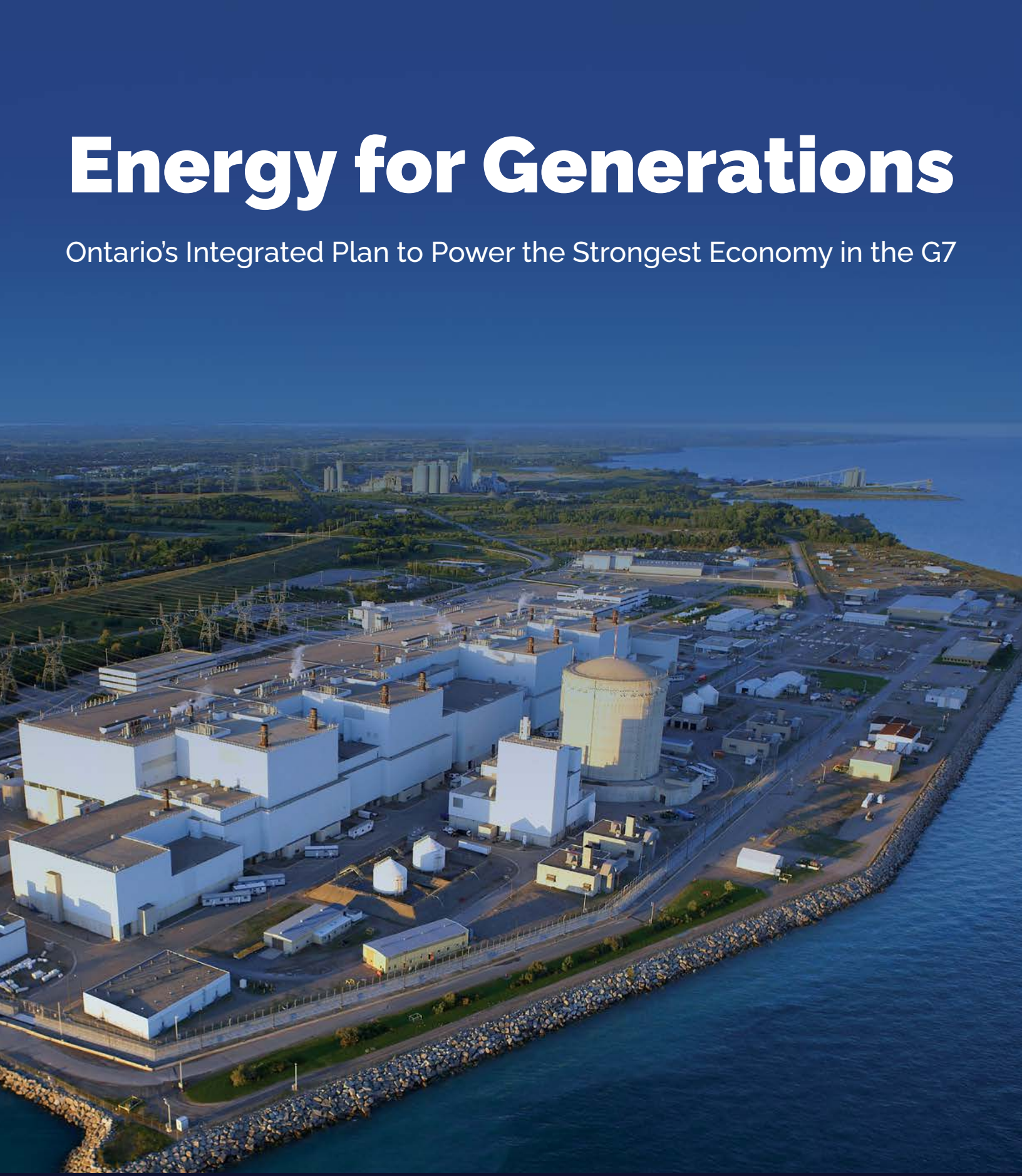
Energy for Generations

Ontario's Integrated Plan to Power the Strongest Economy in the G7



June 2025

Ontario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ONTARIO
ENERGY
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Contents

Minister's Message

Energy keeps Ontario's economy growing and people working. It powers our lives and our livelihoods.

The choices we make about energy policy today will determine our success for generations and today Ontario faces a clear choice: take a wait-and-see approach, or act decisively to secure our energy future. We are choosing to be bold, because how we plan, generate, and deliver energy will shape the strength of our economy, the jobs of tomorrow, and affordability for decades to come.

We are home to the critical minerals, natural resources, skilled workforce, and industrial base that global markets need. But none of it moves – none of it grows – without the energy to power it.

As the world searches for affordable, secure, reliable, and clean energy, Ontario is doing big things. We are leading the largest expansion of nuclear energy on the continent, building the largest battery storage fleet in the country, adding thousands of kilometers of new electricity transmission, and modernizing our grid to meet the needs of tomorrow.

Ontario's first Integrated Energy Plan is a blueprint to ensure our province has the energy it needs to power its homes and industries, today and in the decades ahead. A Plan that puts affordability first and focuses on the needs of families and realities facing businesses, while supporting the long-term security and reliability of our clean energy supply.

This Plan is designed with flexibility in mind – because now more than ever, no one can predict the future with any certainty. It ensures we can be self-reliant, and that we have options available to meet whatever challenges or opportunities come at us as a province, and as a country.

That starts with ending the siloed planning processes that have held our province back for far too long. It starts with a new approach that integrates every part of Ontario's energy system. For the first time, we are bringing together planning for electricity, natural gas, hydrogen, and other fuels into a single, coordinated plan that makes our economy more competitive, resilient and self-reliant.

Just as past generations built Ontario's hydro and nuclear fleet, this Plan advances generational projects including new nuclear at Bruce Power and Port Hope, the first Small Modular Reactor in the G7 and new hydroelectric stations in the north, while unlocking the full potential of emerging energy solutions across Ontario.

Our Plan will modernize the grid to support a smarter, more flexible system – one that can better integrate and manage new technologies like battery storage, smart devices, and distributed energy resources. This transformation will empower families, communities, and businesses to not only use energy, but to produce and store it, making them active participants in our energy future.

At the same time, we are maintaining and strengthening access to reliable and affordable fuels like natural gas, which remains critical to Ontario's industries, farmers, and rural communities. Alongside this, Ontario is creating space for new and emerging resources – including low-carbon hydrogen and renewable natural gas – that can enhance energy flexibility and help reduce emissions over time.

And we are doing all of this while working in partnership with Indigenous communities, municipalities, businesses, industry, and energy system stakeholders, who need the certainty this Plan provides to make long-term investment decisions in Ontario.

When we strike the right balance, Ontario won't just power itself, we will unlock new opportunities for our workers and our economy. We will cement Ontario's position as a national, continental and global energy superpower.

Energy policy can determine the success of a generation. If we want to protect affordability, ensure energy security, and drive long-term prosperity, this Plan is the way forward. This is our Plan to protect Ontario's future – ensuring our kids, and their kids, inherit an affordable, secure reliable and clean energy system that will help build and power the strongest economy in the G7.

Stephen Lecce,
Minister of Energy & Mines

Executive Summary

Businesses are choosing Ontario to invest and grow. People are choosing Ontario as the best place to live, work and build their futures. Across every part of life, from transportation to industry, Ontario families and businesses are choosing to electrify. Together, these choices are increasing energy demand. Ontario is ready to meet the moment.

Energy for Generations: Ontario's Integrated Plan to Power the Strongest Economy in the G7, Ontario's first Integrated Energy Plan, establishes a planning horizon out to 2050 and brings together the full force of our energy system – electricity, natural gas, hydrogen, storage, and other energy sources – to make our economy more competitive, resilient and self-reliant over the long term.

Rather than addressing energy needs in silos, this Plan enables smarter decision-making, better system coordination, and more cost-effective investments that will benefit families, workers, and businesses across the province. It marks a clear departure from the previous government's fragmented approach, which led to some of the highest electricity cost increases in North America – forcing families to make impossible choices between heating their homes and putting food on the table.

This integrated approach builds on the foundation Ontario has established over the past seven years – an energy advantage rooted in the province's ability to deliver power that is affordable, secure, reliable and clean. These four principles are now the central focus of Ontario's first integrated energy plan:

- **Affordability** means keeping energy costs low for families, businesses, and industry.
- **Security** means having the supply, infrastructure, and domestic capabilities to stay self-reliant and resilient, while keeping Ontario's power system secure.
- **Reliability** means building a system that works 24/7, in every season and every part of the province.
- **Clean energy** means attracting investment and building our economy while providing North America with a continental solution to reduce emissions.

These principles are embedded throughout the Plan – guiding decisions about new infrastructure, regulatory frameworks, technology deployment, and public investments.

The following chapters outline the actions Ontario is taking to turn these principles into results – delivering an energy system that is affordable, secure, reliable and clean, while keeping pace with growing demand, responding to the challenges and opportunities ahead, and protecting Ontario's long-term competitiveness.

Chapter One (Energy Efficiency) outlines the actions government is taking to help people and businesses save money and energy through expanded electricity and natural gas efficiency programs that also improve reliability and reduce emissions.

Chapter Two (Affordable, Secure, Reliable and Clean Electricity) details how Ontario is building on one of the world's cleanest electricity grids by adding new generation – including nuclear and hydro – to ensure it remains affordable, reliable, and secure as demand grows by 75 per cent by 2050.

Chapter Three (Building More Transmission) explains how the government is accelerating the development of transmission infrastructure to connect people and businesses to reliable, affordable, and clean power, and to unlock new economic growth across the province.

Chapter Four (Ontario's Future Electricity Grid) highlights how Ontario is driving high performance in the distribution sector, including through modernizing the grid to better integrate distributed energy resources and smart technologies that improve reliability, lower costs, and support greater system flexibility.

Chapter Five (Important Role of Natural Gas) outlines Ontario's approach to protecting access to natural gas as a reliable and affordable energy source, chosen by customers for home heating and to power industry.

Chapter Six (Other Energy Resources) outlines the role other energy sources play in powering the province's economy, while opening new opportunities for emerging energy sources and applications like hydrogen, renewable natural gas, and biofuels to diversify the province's energy supply.

Chapter Seven (Integrated Energy Planning) explains how Ontario is improving coordination across electricity and fuels and across energy agencies to support economic growth through integrated, cost-effective planning that ensures long-term energy security and greater system-wide affordability.

Chapter Eight (Indigenous Leadership and Partnership) details how the government is advancing economic reconciliation by building capacity, supporting Indigenous equity partnerships in energy projects and investing in more reliable and affordable energy solutions for remote First Nation communities.

Chapter Nine (Ontario as a Global Energy Superpower) describes how Ontario is positioning itself as a global energy superpower by exporting clean electricity, nuclear innovation, and homegrown energy solutions that create jobs and help keep costs down at home.

Ontario's Energy System Today

Ontario's economic success depends on energy that is affordable, secure, reliable, and ready to power growth. In an increasingly competitive global economy, jurisdictions that can deliver secure and cost-effective energy will power people's lives and attract investment, create jobs, and lead the next wave of innovation.

But not long ago, Ontario was on the wrong path. Skyrocketing hydro bills made life unaffordable for families, forced businesses to shut their doors or move elsewhere, and pushed many Ontarians into energy poverty – facing the harsh reality of choosing between heating their homes and putting food on the table.

That's why, over the past seven years, Ontario has taken decisive action to restore energy affordability, stability, and predictability. This is the result of an all-of-the-above approach that leverages a diverse mix of sources to power homes, businesses, and industries across the province.

Ontario's electricity grid, one of the cleanest in the world, relies on nuclear, hydroelectric, natural gas, and renewable generation, helping to power homes and businesses. Natural gas continues to be a key energy source for industry and home heating. Refined petroleum products, such as gasoline and diesel, remain vital for transportation and industrial processes. At the same time, emerging energy solutions – including hydrogen, renewable natural gas (RNG), distributed energy resources (DERs), energy storage, and biofuels – are playing an increasingly important role.

Energy for Generations builds on the strengths of Ontario's energy system today and ensures that all forms of energy infrastructure are working together to deliver power that is affordable, secure, reliable and clean.

Establishing Ontario's Affordable, Reliable and Clean Energy Advantage

Prior to 2018, high electricity costs were chasing jobs and investments out of the province. Between 2004 and 2016 the previous government pursued an ideologically driven energy agenda that prioritized over-market, expensive, intermittent generation at a time when it wasn't needed. This was done at the expense of affordability and system efficiency.

Over that period, more than 33,000 contracts were signed – many at rates up to 10 times the going rate for power. These long-term deals, often spanning 20 years in length, locked Ontarians into decades of overpayments, significantly driving up electricity bills for families and businesses. These costly decisions continue to burden the system today, with many contracts remaining in place through 2039.

With affordability being top of mind for families and businesses the government moved quickly, starting in 2018, to bring stability to the electricity system and lower costs for ratepayers. This included passing the *Fixing the Hydro Mess Act, 2019*, which laid the groundwork for restoring transparency and accountability in energy planning. It also included the introduction of the Comprehensive Electricity Plan (CEP) and the Ontario Electricity Rebate (OER), which continue to provide direct relief by lowering electricity bills.

Restoring affordability and stability to the sector allowed businesses to start investing, the province to build new homes and consumers to electrify. The government has spent the subsequent seven years ensuring Ontarians have long-term certainty that they will continue to have access to reliable, affordable and clean energy. To provide a strong foundation for this long-term planning, the government commissioned and released a series of major reports that advanced Ontario's energy objectives.

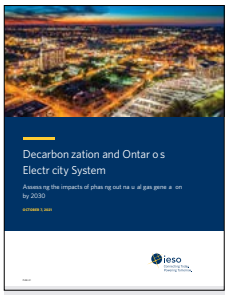
At the request of the Minister of Energy, Ontario's Independent Electricity System Operator (IESO) released two reports which laid the groundwork for future government decision making. *Decarbonization and Ontario's Electricity System* and the *Pathways to Decarbonization* affirmed the need for an all-of-the-above approach that continues to integrate new energy sources, as well as new nuclear and hydroelectric generation, to ensure the electricity system can meet growing demand in a cost-effective way. These reports provided valuable insights into Ontario's evolving energy needs, and set the foundation for *Powering Ontario's Growth*, released by the government in 2023, which laid out the first steps for new electricity production in the province.

Powering Ontario's Growth advanced a range of actions to meet electricity demand including new nuclear generation, refurbishment of hydroelectric facilities, competitive energy procurements, expanded energy efficiency programs, and new transmission projects to connect energy to end users.

The government also established the Electrification and Energy Transition Panel (EETP) to provide advice on the actions the Province could take to prepare for increasing electrification, support emerging electricity and fuels planning needs, and enhance effective governance and decision-making. The Panel's final report, *Ontario's Clean Energy Opportunity*, was released in January 2024.

Building on these foundational reports and initiatives, the government released *Ontario's Affordable Energy Future: The Pressing Case for More Power* in the fall of 2024. This document marked a critical step in Ontario's energy planning journey – providing a comprehensive assessment of the challenges facing the province's energy system, including the need to meet rapidly growing demand, electrify key sectors, and maintain reliability, all while keeping energy rates down.

Ontario's Affordable Energy Future reaffirmed the government's commitment to energy policies that support economic growth, job creation, and cost stability for families and businesses. These commitments are reflected in the principles that now form the foundation of this Integrated Energy Plan – affordable, secure, reliable and clean energy – and guide the decisions made in this document that will shape the future of Ontario's energy system and, in doing so, the future of Ontario's economy.

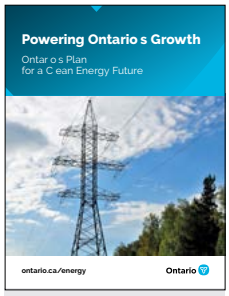


Decarbonization and Ontario's Electricity System

October 2021

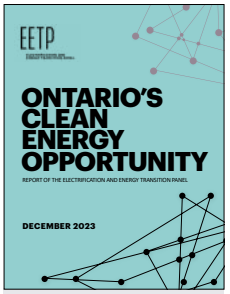
Pathways to Decarbonization

December 2022



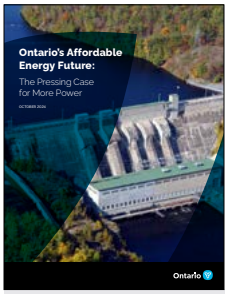
Powering Ontario's Growth

July 2023



Ontario's Clean Energy Opportunity

December 2023



Ontario's Affordable Energy Future

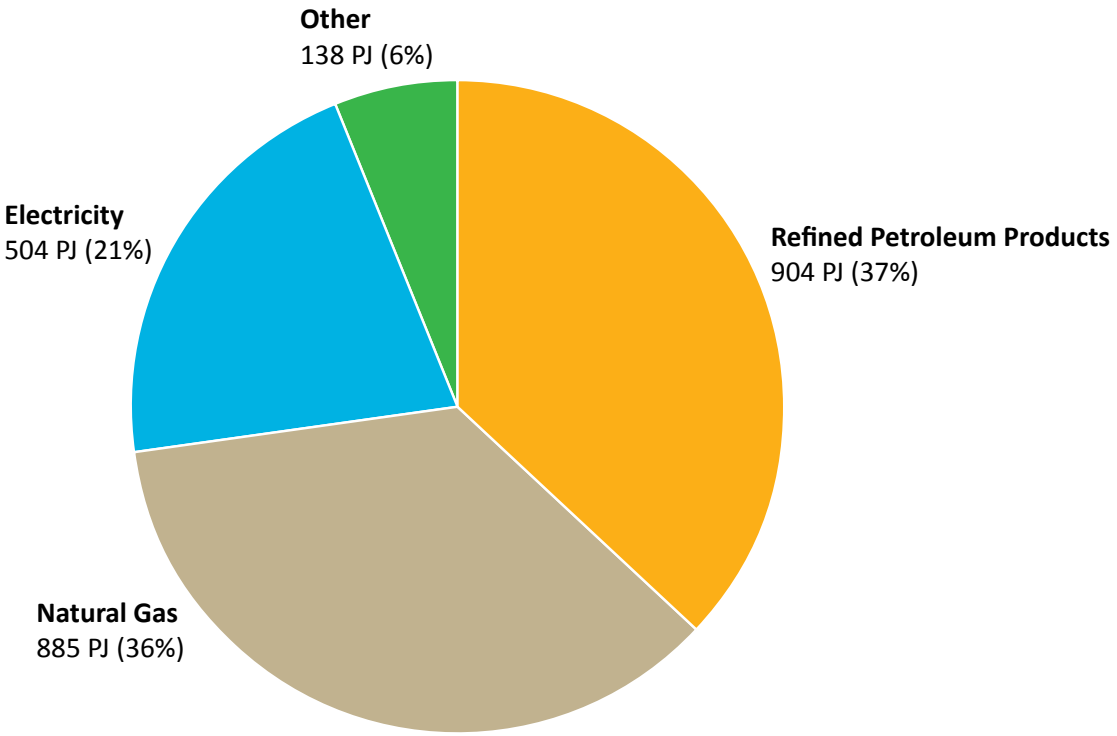
October 2024

Ontario's Energy Mix

Today, electricity, natural gas, oil and refined petroleum products are all part of Ontario's energy mix. They work together to power our economy, transport people and the goods they rely on, and heat, cool and light the homes of more than 16 million people – a number that is continuing to grow. Electricity, natural gas, and refined petroleum products together account for 96 per cent of the energy Ontario needs. Other fuel types such as hydrogen, biofuels and industrial fuels account for the remaining four per cent.

Through strategic investment, modern regulation and innovative public policy, the Ontario government will continue to be a driving force in ensuring the province has access to the reliable, affordable supply of energy needed to keep people safe, create jobs and grow the economy.

Figure 1: Ontario's Current Energy Mix: End Use Demand by Fuel Type (Petajoules)



Petroleum Products

Petroleum products, derived from crude oil, make up 37 per cent of Ontario's end-use energy consumption. Petroleum products are critical fuels to move goods and people, heat homes, and support non-energy applications.

Transportation fuels account for 86 per cent of Ontario's end-use energy demand for petroleum products. The main fuels are gasoline (59 per cent), diesel (28 per cent), and jet fuel (10 per cent). These fuels also provide energy for non-transportation applications, including energy for industrial, commercial, and agricultural uses (e.g. equipment, motors, etc.) and heating.

Petroleum products also have non-energy uses. Non-energy use includes inputs to the petrochemical sector, asphalt production and other applications like lubricating oils, greases and waxes. Non-energy use of petroleum accounts for about 14 per cent of Ontario's overall (energy and non-energy) petroleum demand.

Natural Gas

Natural gas makes up 36 per cent of Ontario's end-use energy consumption and is the dominant fuel used for heating in Ontario, serving about 3.9 million residential and business customers. About 75 per cent of Ontario's residential customers use natural gas to heat their homes. Additional uses for natural gas include industrial processes such as producing chemicals and for process heat, as well as a transportation fuel. It is also used for electricity generation.

Electricity

Electricity makes up 21 per cent of Ontario's end-use energy consumption. Ontario's electricity system represents a true competitive advantage for the province. It is one of the cleanest and most reliable in the world, providing affordable electricity to serve a growing population, attract new investment and continue to power the province's strong economic growth.

Approximately half of the electricity used by Ontarians every day comes from nuclear power. The remainder comes from a mix of hydroelectric, natural gas, solar, wind, storage and bioenergy. Since no single resource can always meet all of the system's needs, maintaining a diverse supply mix is an effective way to ensure ongoing reliability.

Thanks to this diverse supply mix, Ontario's world-leading clean electricity sector accounts for five per cent of the province's total emissions, and as such is a key tool in helping other sectors of the Ontario economy reduce emissions through electrification.

To meet increasing demand as Ontario's economy electrifies, new generating resources will need to come online to provide the key services the grid needs, like capacity and energy.

Other Energy Sources

Other energy sources are playing a growing role in Ontario's energy system. This includes biofuels, RNG and low-carbon hydrogen.

Biofuels are renewable fuels that can be used as direct substitutes for a wide range of conventional fuels, including diesel, natural gas and aviation fuel. Biofuels include a range of products such as ethanol, RNG and biodiesel. They are a derivative of biomass, which can also be used directly as a fuel – such as wood chips, pellets or agricultural waste.

RNG can be blended with conventional natural gas in existing natural gas networks for homes and industry. It can also be blended into natural gas-fired electricity generation facilities. Low-carbon hydrogen is being used worldwide in a wide range of industrial applications, especially in hard-to-abate industries. Ontario already has active hydrogen and RNG projects in municipalities across the province including London, Ottawa, Toronto, Markham, Hamilton, Ilderton and Niagara Falls.

Affordability First: Supporting People, Jobs and Growth

Affordable, predictable, and stable energy costs are the foundation of Ontario's economic success, and the quality-of-life families count on every day. Whether heating a home, charging a vehicle, or running a business, affordable energy enables nearly every part of life in Ontario.

For households, affordable energy means more money left at the end of the month – money that can be spent on things that matter most, from groceries and childcare to housing and other essential household expenses. For businesses, stable and competitive energy prices are critical for long-term planning, investment, job creation, and growth. Whether it is a manufacturer expanding production or a small business deciding to hire, confidence in the energy system supports job creation and economic development.

Today, Ontario is entering a period of unprecedented energy demand and there is no scenario where Ontario can meet this growing demand without building new energy infrastructure. That reality requires smart planning and responsible investment to ensure energy remains affordable for families and businesses across the province.

That is why the government is putting affordability first in every decision it makes to build Ontario's energy future – while also ensuring that system is secure, reliable and clean.

Delivering these outcomes are essential to Ontario's long-term competitiveness, economic resilience, and energy self-reliance. Through energy efficiency programs, competitive energy procurements, leveraging private capital, the Future Clean Electricity Fund, rate mitigation programs and strong collaboration with other levels of government, Ontario is taking decisive action to keep costs stable and predictable – today and for generations to come.

Saving Money with Energy Efficiency

Ontario is leading the most ambitious energy efficiency effort in its history, helping families and businesses save money and save energy. Through a historic $10.9 billion investment in electricity efficiency programs and continued support for natural gas efficiency, Ontario is working to defer or avoid the need for new energy infrastructure wherever possible.

While Ontario is maximizing energy savings through the historic investments outlined in Chapter One of this Plan, meeting future demand will still require new energy infrastructure.

Reducing Costs Through Competitive Procurements

The government is putting affordability first by adding new electricity generation and storage using competitive, technology-neutral procurements that ensure all solutions compete on a level playing field. This open competition protects ratepayers and delivers reliable power at the best possible prices.

Whether energy storage, natural gas, renewables, or other technologies, like biomass, all proponents must compete to demonstrate value for Ontario's system and customers. By providing clear, multi-year procurement schedules, Ontario is also giving industry the certainty and time needed to develop cost-effective projects that are ready when Ontario needs them.

Looking ahead, Ontario will continue to use competitive procurement processes to secure new electricity resources. More detail on Ontario's procurement framework, upcoming opportunities, and other ways Ontario is keep costs down for new infrastructure, including the Future Clean Electricity Fund is available in Chapter Two of this Plan.

Competition Works: Securing More Power at Lower Cost

Ontario's competitive approach to securing new electricity supply is already delivering results. Through the most recent Medium-Term Procurement, the IESO secured 3,000 megawatts (MW) of energy and capacity resources. Energy projects were procured at a cost that is approximately 21 per cent lower than their previous contracts. Capacity contracts were around 65 per cent lower cost for capacity compared to building new generation.

This success stands in sharp contrast to the fixed, above-market contracts signed by the previous government, which locked Ontario into long-term costs well above market prices.

Empowering Customer Choice

Ontario's approach to affordability centres on the principle of customer choice. Whether heating a home, fueling a vehicle, or powering a business, customers are best positioned to decide which energy solutions work for them – based on their needs, preferences, and budgets.

Energy for Generations supports this choice by making a diverse range of energy options available, from natural gas and electricity to low-carbon fuels like renewable natural gas, hydrogen and biofuels. Customers can choose to stay with familiar energy sources, adopt emerging technologies like heat pumps or EVs, or combine solutions through hybrid systems. This flexibility helps households and businesses keep costs down while ensuring they have reliable energy when they need it most.

By protecting customer choice, the government is supporting energy decisions that work not just for today, but for generations to come – empowering people to manage their costs, drive innovation, and help power Ontario's economy and communities in the way that suits them best.

Expanding Rate Options to Support Customer Choice

Ontario is giving consumers more choice in how they manage their energy use and costs by expanding the electricity rate options available to residential and business customers.

- In **2020**, the government introduced optional **Tiered Electricity Pricing**, allowing residential and small business customers to choose a pricing structure that better matches their energy use.
- In **2023**, Ontario launched the **Ultra-Low Overnight (ULO) price plan** to support households and small businesses that can shift electricity use to overnight hours—providing significant savings for EV owners and other off-peak users.
- In **2024**, the government began consultations on a new **Electric Vehicle Charging Discount Rate** to support the development of new EV charging stations.

These rate options reflect Ontario's commitment to affordability and customer choice, giving people and businesses more flexibility to manage their costs and energy use in ways that work for them.

Support for Residential Customers

Ontario is maintaining energy affordability through a range of targeted programs, on-bill credits, and rebates. These supports reflect the government's commitment to ensuring that all Ontarians benefit from stable, predictable energy costs - including measures to reduce the long-term impacts of the previous government's over-market energy contracts.

Ontario Electricity Rebate
The OER implemented in 2019, provides rate relief to residential customers, small businesses and farms. For an average residential customer who uses 700 kilowatt hours (kWh) of electricity per month, the OER provides a benefit of about $17 a month or $200 a year.

Ontario Electricity Support Program
The Ontario Electricity Support Program (OESP) provides a monthly on-bill credit to assist lower-income households manage their electricity costs. Credit amounts range from $35 to $113 based on household income, need and size. The program also provides enhanced assistance to households with Indigenous family members, customers using certain electricity-intensive medical devices and those with electrically heated homes.

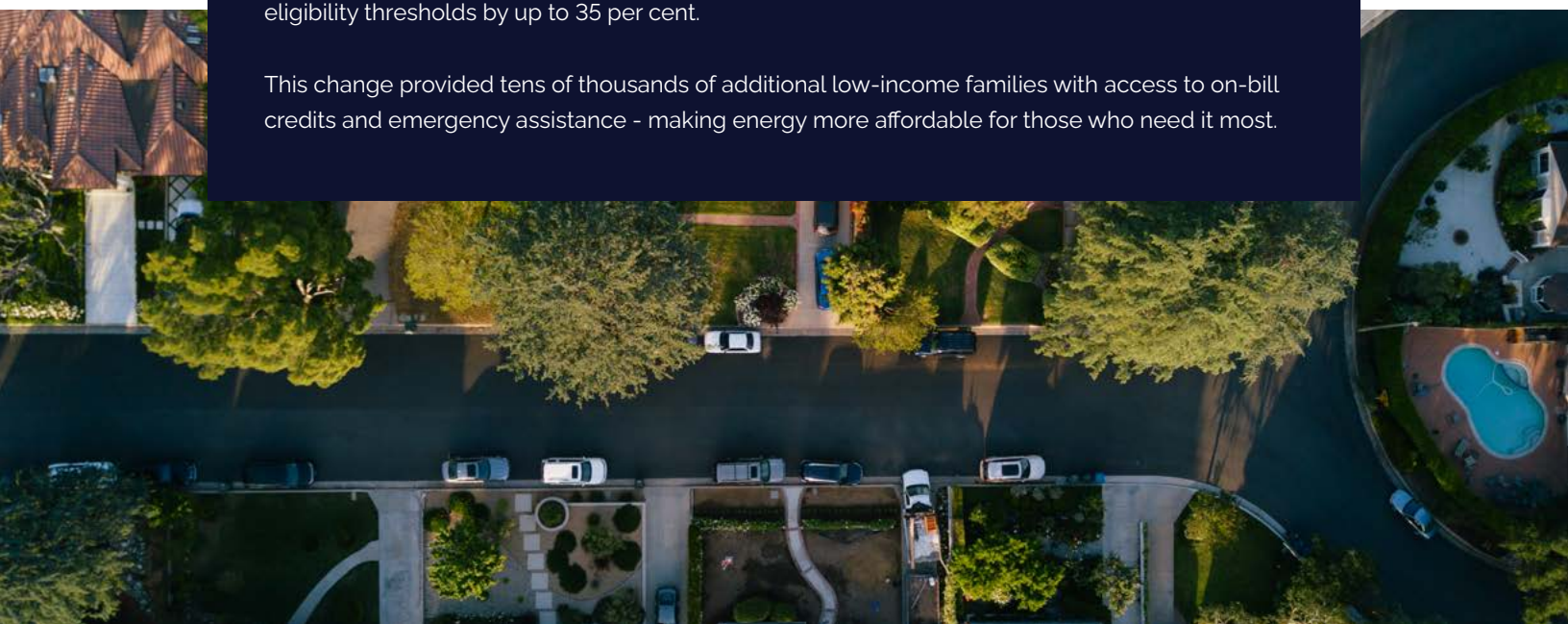
Low-income Energy Assistance Program
The Low-Income Energy Assistance Program (LEAP) provides grants toward electricity or natural gas bills for consumers who are behind on payments and face having their service disconnected.

Families who heat their homes with natural gas are eligible for a grant of $650, and families who heat their homes with electricity are eligible for $780.

Expanding Support for More Families

In 2024, the government expanded access to both the OESP and LEAP by increasing income eligibility thresholds by up to 35 per cent.

This change provided tens of thousands of additional low-income families with access to on-bill credits and emergency assistance - making energy more affordable for those who need it most.



Distribution Rate Protection
The Distribution Rate Protection (DRP) program caps the amount of base distribution charges for eligible residential customers of prescribed local distribution companies (LDCs) that had higher-than-average electricity distribution costs at the time the program was established.

Rural or Remote Electricity Rate Protection
The Rural or Remote Electricity Rate Protection (RRRP) program provides a monthly on-bill credit of $60.50 that goes towards the delivery charges for eligible rural and remote households, who often face higher electricity bills.

First Nations Delivery Credit
The First Nations Delivery Credit (FNDC) provides a monthly on-bill credit equivalent to 100 per cent of delivery charges to on-reserve First Nation residential electricity customers, who face unique challenges that impact electricity affordability.

Ontario Energy and Property Tax Credit
The Ontario Energy and Property Tax Credit (OEPTC) helps low and moderate-income individuals offset the sales tax on energy and with property taxes. As part of the Ontario Trillium Benefit, for the 2025 benefit year, eligible non-seniors and families could get up to $1,283, while eligible seniors could get up to $1,461.

Northern Ontario Energy Credit
The Northern Ontario Energy Credit (NOEC) helps low to moderate-income Northern Ontario residents with the higher home energy costs they face living in the north. As part of the Ontario Trillium Benefit, for the 2025 benefit year, eligible single residents with no children could get up to $185, while couples and single parents could get up to $285.

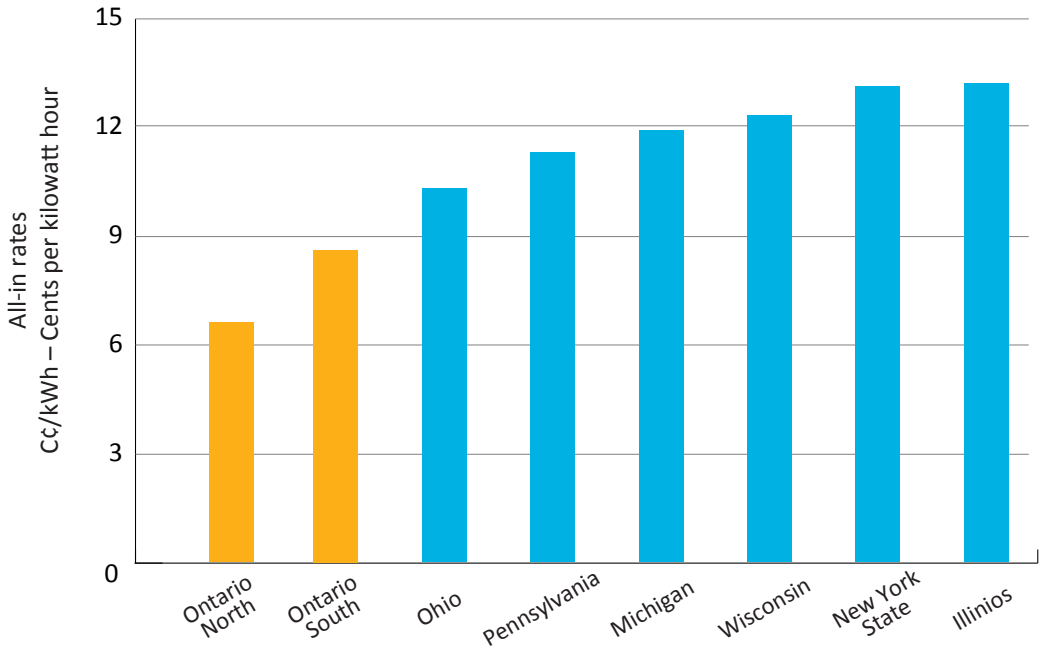
Winter Disconnection Ban
The Winter Disconnection Ban protects Ontarians and ensures they have heat and power through the winter by prohibiting electricity and natural gas utilities from disconnecting residential customers for non-payment between November 15 and April 30, and requiring previously disconnected customers to be reconnected by December 1.

Support for Business Customers

Ontario provides affordable, secure, reliable and clean energy to power the province's growing economy. Since 2018, the provincial government has lowered the cost of doing business in Ontario by $8 billion a year – driven in part by efforts to lower electricity costs for commercial and industrial customers.

Today, Ontario's electricity rates are at or below the rates in neighbouring Great Lake states. These savings attract new investments into our economy and help existing businesses reinvest in their operations, expand production, and create jobs here in Ontario.

Figure 2: Competitive Electricity Rates for Medium and Large Businesses



Comprehensive Electricity Plan

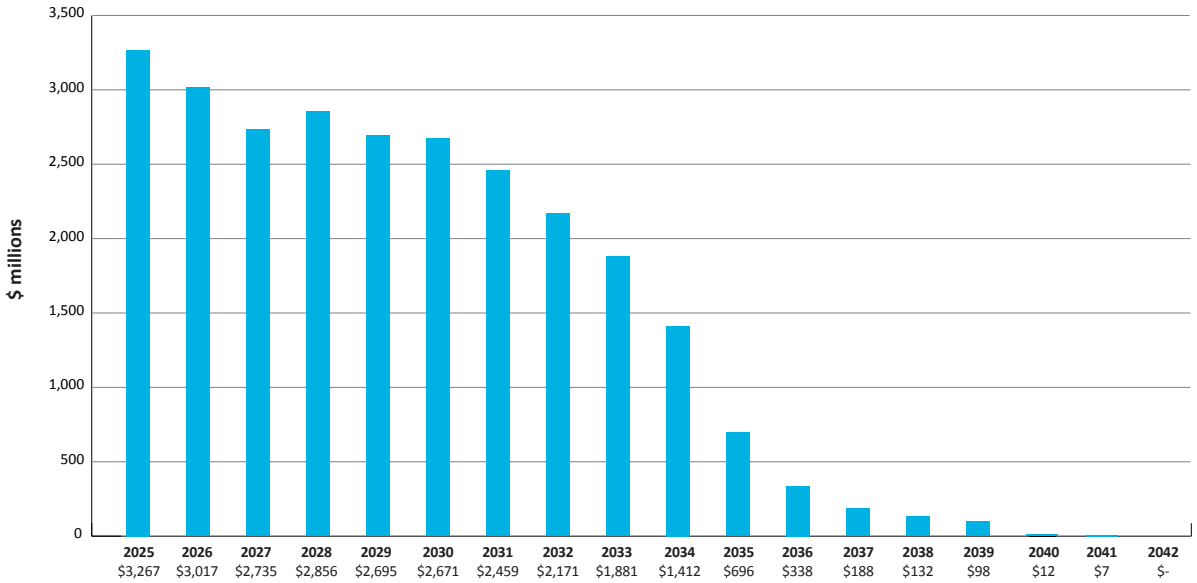
Ontario's CEP lowers electricity costs for business consumers by funding the above-market costs of the approximately 33,000 existing renewable energy contracts signed by the previous government between 2005 and 2016.

In 2025, removing these costs will result in medium-sized and larger industrial and commercial employers saving an average of approximately 11 per cent and 14 per cent on their electricity bills, respectively. As a result, Ontario went from having some of the least competitive electricity prices to prices that are lower than the U.S. average, making Ontario a more competitive place to do business.

More than 50,000 commercial and industrial customers continue to benefit from the plan, which has reduced electricity rates on secure, reliable and clean power, allowing them to focus on reinvesting in their operations and creating jobs here at home.

Over time, as the previous government's over-market contracts end, the cost of delivering the CEP will decrease and eventually fall to zero.

Figure 3: Cost to Deliver CEP to Decrease Over Time

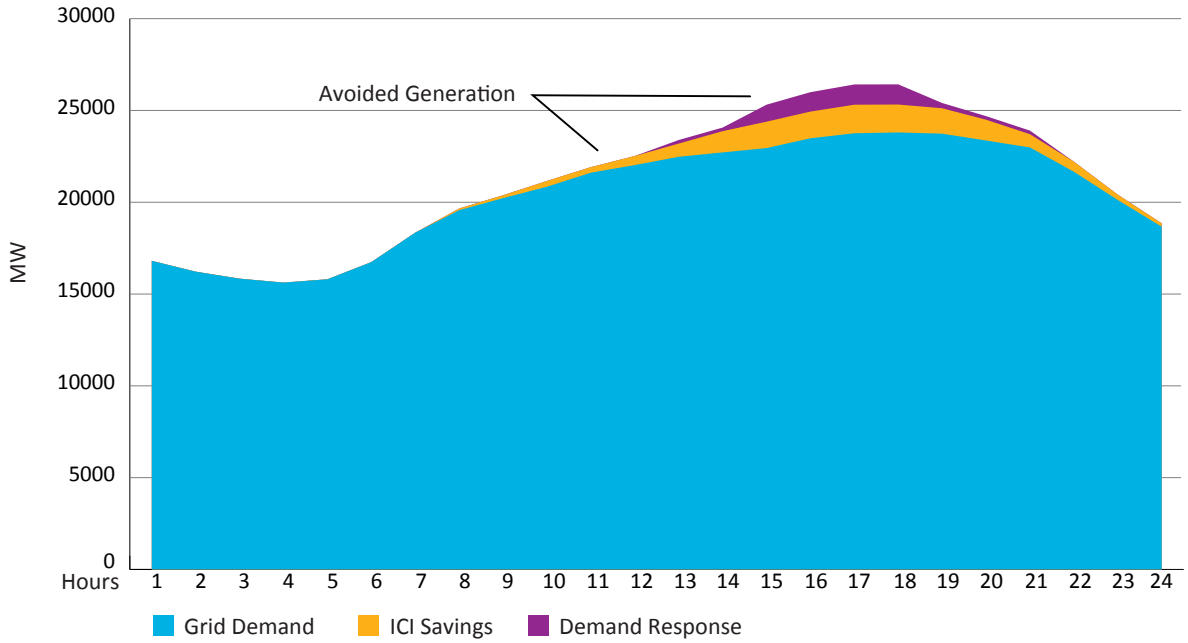


Industrial Conservation Initiative

The Industrial Conservation Initiative (ICI) is a demand response program in which participants – including large manufacturers, mines and forest product operations – can significantly reduce their electricity costs if they reduce their electricity demand during peak periods.

By reducing peak demand, the program helps Ontario avoid investments in new generation and transmission infrastructure, which keeps costs down for all ratepayers. It also enhances the overall efficiency of the power system by better aligning electricity generation with actual demand.

Figure 4: Reducing Peak Electricity Demand Through ICI and Demand Response



Demand response programs like the ICI and Peak Perks Program (see Chapter One) reduce the need to build peaking generation which would only be required during the hottest and coldest days of the year. This figure demonstrates the electricity savings resulting from ICI and other demand response programs on June 19, 2024.

Powering Ontario's Economy and Peoples' Lives

Ontario's economy and the day-to-day lives of its residents depend on an affordable, secure and reliable energy system that delivers power on demand.

Over the next 25 years, demand for electricity is forecast to increase by 75 per cent, the equivalent of adding four and a half cities the size of Toronto to the grid. There is also continued demand for other fuels like gasoline and natural gas that play a critical role in powering our vehicles, heating our homes and attracting new jobs in manufacturing, including the automotive industry and agriculture.

This demand is driven by several factors.

1. **Economic Growth:** Despite global economic uncertainty, Ontario's economy continues to grow. The province has attracted historic investments in its industrial sector including EV and battery manufacturers, as well as other strategic sectors critical to Ontario's competitiveness.
2. **Population Growth:** In just 25 years, Ontario's population is projected to increase by 4.2 million people, the equivalent of almost four cities the size of Ottawa. By 2051, almost 21 million people will be living in Ontario, up from over 16 million now.
3. **Electrification:** Households are adopting EVs and switching to electrified forms of heating. Industries – from auto manufacturing to steel production – are increasingly turning to Ontario's clean electricity grid to power their operations. This customer-driven shift is reshaping how energy is used in Ontario.

These unprecedented changes necessitate a fully integrated plan to protect and enhance Ontario's energy supply, while ensuring it is safe, reliable, and affordable.

Electricity Demand

Since 2018, Ontario has reindustrialized its economy, putting an affordable, secure, reliable and clean energy system to productive use by powering new investments, industries and job creation. This shift has benefited all ratepayers and taxpayers by helping to strengthen the province's economic base.

Now demand continues to grow. The IESO forecast in 2022 that Ontario would see a need for significant new electricity capacity beginning in 2025. This marks a return to energy planning driven by real economic need and ensures Ontario is building for a more competitive and self-reliant future.

Thanks to the government's forward-looking action to increase energy efficiency and secure more capacity through a competitive energy procurement to re-contract existing assets and build new generation and storage, Ontario has enough electricity to meet demand this decade.

Looking ahead, the IESO's 2025 Annual Planning Outlook (APO) forecasts that by 2029 and 2030, there will be emerging energy and capacity needs. By 2034, these needs are expected to grow to 2,100 MW for capacity and around 7 terawatt-hours (TWh) for energy.

Understanding Electricity Demand: Capacity vs. Energy

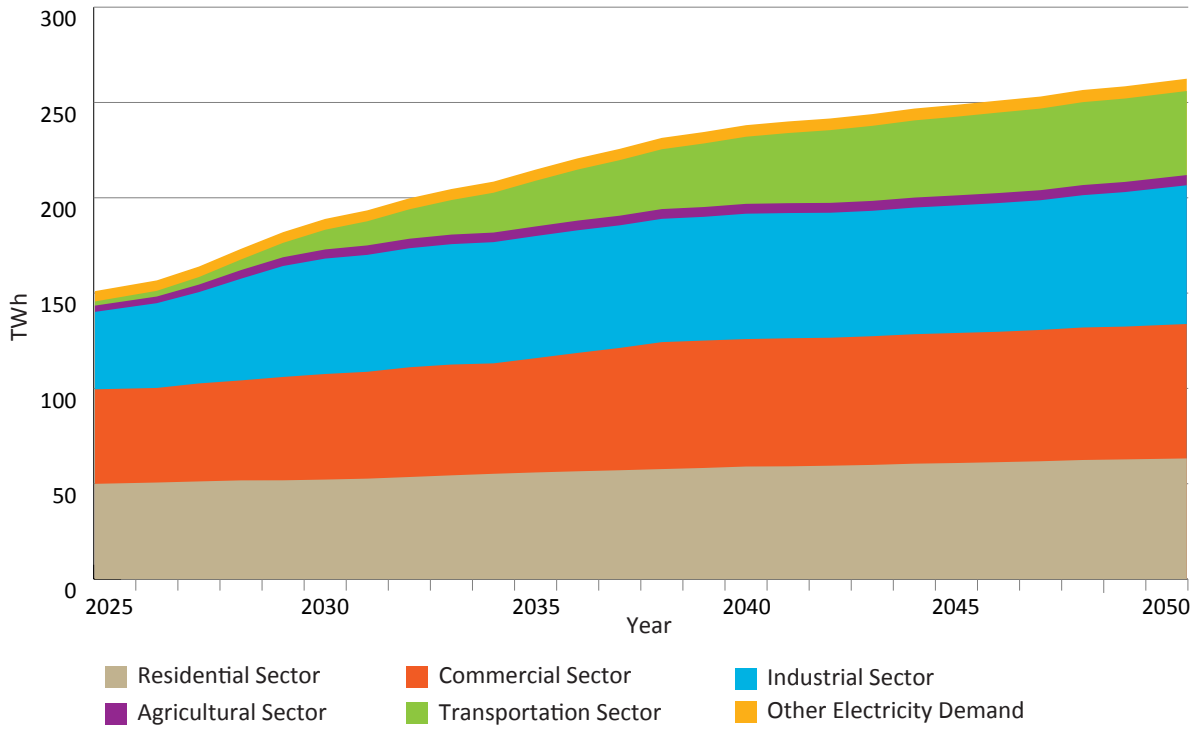
'Capacity' is a measure of the maximum amount of electricity the province's system can supply at any given time. Ontario's capacity is constantly changing as new supply comes online, older generators are taken out of service and new innovative technologies are introduced. Resources like nuclear, natural gas and hydroelectric that can be depended upon are said to have a 'high-capacity factor', while intermittent resources like wind and solar have a 'low-capacity factor,' unless paired with energy storage.

While capacity represents the maximum amount of electricity that could be supplied to the system, 'energy' represents the total amount of electricity that is generated or used over a period of time.

As demand grows Ontario must secure both enough capacity to meet peak demand and enough energy to power homes, businesses and industry day-to-day.

According to the IESO transportation electrification is anticipated to be the single largest contributor to rising electricity demand (Figure 5). As EV adoption increases, electricity demand from EVs alone is forecast to reach 20 TWh by 2035, accounting for 31 per cent of new demand. Beyond personal vehicles, transit agencies and freight operators are also choosing to deploy electric buses and trucks, increasing the need for high-capacity charging infrastructure and grid reinforcement in key urban and transportation corridors.

Figure 5: Projected Electricity Demand by Sector



Electricity demand growth is driven by increasing demand across almost all sectors of the economy including transportation, commercial, industrial and residential.

Demand from the data centre industry, which supports data-intensive applications including artificial intelligence (AI) and cloud computing, is also growing. Data centres are expected to represent 13 per cent of new electricity demand in Ontario by 2035.

Unlocking Opportunities in the Digital Economy

Ontario is embracing the growth of the data centre sector as a strategic opportunity to drive investment, innovation, and job creation, particularly in northern and rural communities where new investments could anchor new high-tech ecosystems.

As global demand for AI, cloud computing, and data processing accelerates, Ontario will prioritize data centres that serve the province's economic interests, including those that create high-quality jobs, support domestic data hosting, and strengthen Ontario's position in the digital economy.

To ensure responsible growth that aligns with public priorities, the government has introduced legislation that, if passed, would allow Ontario to manage electricity connection requests and prioritize data centres that deliver real local, strategic and economic benefits - not just power consumption. This approach ensures the sector enhances Ontario's competitiveness, energy security, and long-term prosperity.

Industrial demand is also surging as Ontario continues to attract new automotive, EV and advanced manufacturing investments, as well as new mines. By 2035, electricity use from the industrial sector is expected to increase by 23 TWh — a 58 per cent increase, the equivalent of 2.7 million homes. Many of these industrial operations are electrifying processes that were previously powered by fossil fuels, supporting province-wide emissions reductions.

Meeting this growing demand is essential to powering new homes and businesses, supporting industrial growth, and building a more competitive, self-reliant, and resilient economy. Ontario's ability to deliver affordable, reliable, and secure electricity will be a key factor in attracting jobs, enabling electrification, and maintaining confidence in the province's energy system.

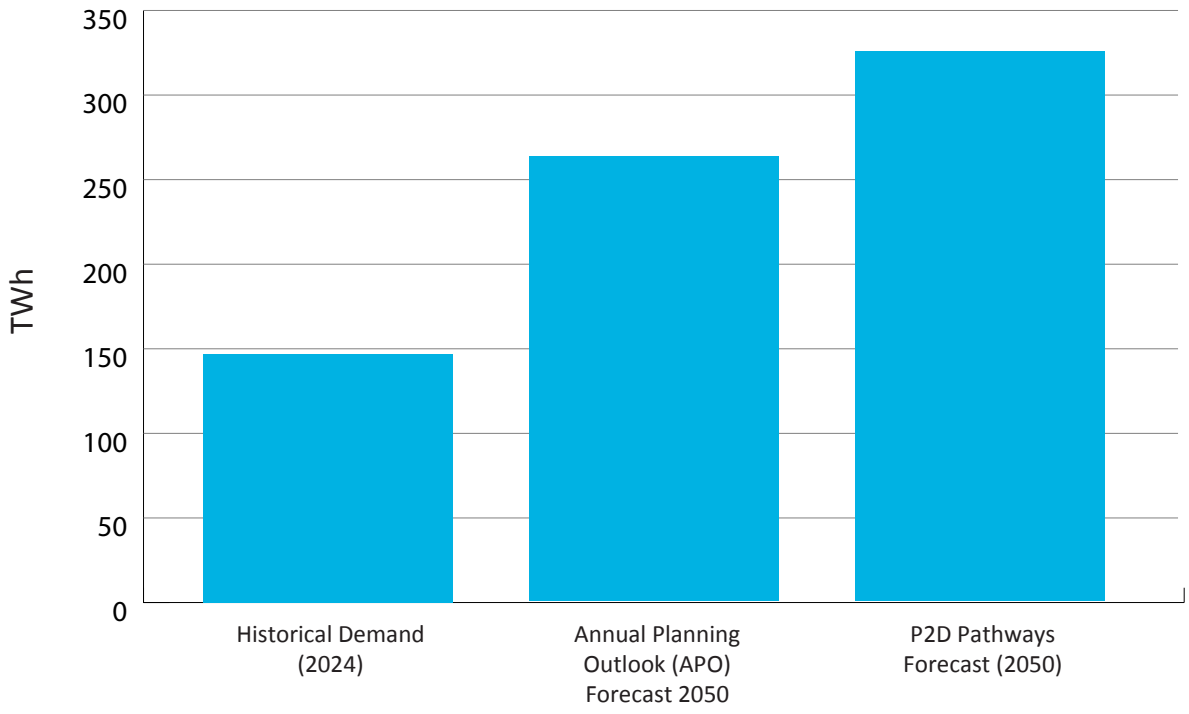
Understanding Forecasts: Planning for a Range of Futures

The IESO's 2025 APO forecasts a 75 per cent increase in electricity demand by 2050. This is based on current policies, known system trends, and moderate uptake of electrification technologies.

In contrast, the IESO's *Pathways to Decarbonization* report models what electricity demand could look like in a fully decarbonized economy where electrification of transportation, heating, and industry accelerates significantly. Under this scenario, electricity demand more than doubles by 2050.

This Plan is focused on ensuring Ontario can meet the forecasted demand under the APO — while also preparing for the possibility of even higher demand if families and businesses decide to pursue more rapid electrification if it best suits their needs.

Figure 6: Ontario Electricity System Demand



Growth in the Mining Sector

Ontario's mining sector is experiencing significant growth, driven by the increasing global demand for minerals and metals. The province is home to 35 active mining operations, including nine critical mineral mines. In 2024, Ontario's mining sector generated $13 billion worth of minerals – accounting for 24 per cent of the country's total mineral production value. Mining in Ontario also supports approximately 31,000 jobs directly and 46,000 jobs associated with mineral processing and mining supply and services.

Critical minerals are essential for various industries, including information and communications technology, clean technology, energy, transportation, aerospace, defense, and health. The province has immense exploration and mineral development potential for critical minerals.

The growth in the mining sector and the development of critical minerals are leading to increased electricity demand in Ontario. Mining operations are energy-intensive, requiring substantial amounts of electricity for extraction, processing, and refining activities. As the sector expands, the demand for electricity is expected to rise significantly.

Figure 7: Transmission Connections in Northern Ontario

LEGEND

- Served by Electrical Grid
- Served by Hydro One Remotes (Off- Grid)
- Served by Band Operated Electrical Systems (Off-Grid)
- Accelerated and Planned Projects
- Ontario's Operational Transmission Grid
- IESO's Northwest IRRP Addendum Study Area
- Unlocking Northern Hydroelectric Opportunities
- IESO's Northern Ontario Connection Study
- Muskrat Dam Lake to be connected to the electrical grid at a later date
- Ring of Fire

While thousands of kilometers of new transmission lines are being built across northern Ontario, new development will be required to further connect remote First Nation communities and unlock critical minerals, including the Ring of Fire.

Demand for Fuels

Access to fuels such as natural gas, gasoline, diesel and others will continue to play an essential role in the decades ahead. These fuels power industries, support agriculture, heat homes and businesses, and keep goods and people moving across the province.

Today, natural gas provides heating for well over three million Ontario households and acts as a vital backup during cold winter peaks and periods when renewable generation is low. It also remains critical for high-temperature industrial processes that are difficult to electrify, such as cement and parts of steel production.

To meet rising demand in key regions, the Province is continuing to support the rational expansion of the natural gas network. For example, in 2024, Enbridge Gas began construction on the $358 million Panhandle Regional Expansion Project to expand the natural gas network in southwestern Ontario. This investment will support approximately 7,000 jobs, enable an estimated $4.5 billion in new economic activity and provide reliable and affordable fuel to power agriculture, industry, homes, businesses, and electricity generation facilities in the region.

Demand for liquid fuels – including gasoline and diesel – is expected to evolve as more EVs enter the market. Still, fuels will remain indispensable for many heavy-duty transportation applications, aviation, and rural or remote areas not yet suited for electrification.

Ontario's fuel needs are also being shaped by innovation. Low-carbon fuels such as RNG, low-carbon hydrogen, and sustainable aviation fuel (SAF) are emerging. As these alternatives become more cost-effective and scalable, they are expected to make up a growing share of the province's fuel mix.

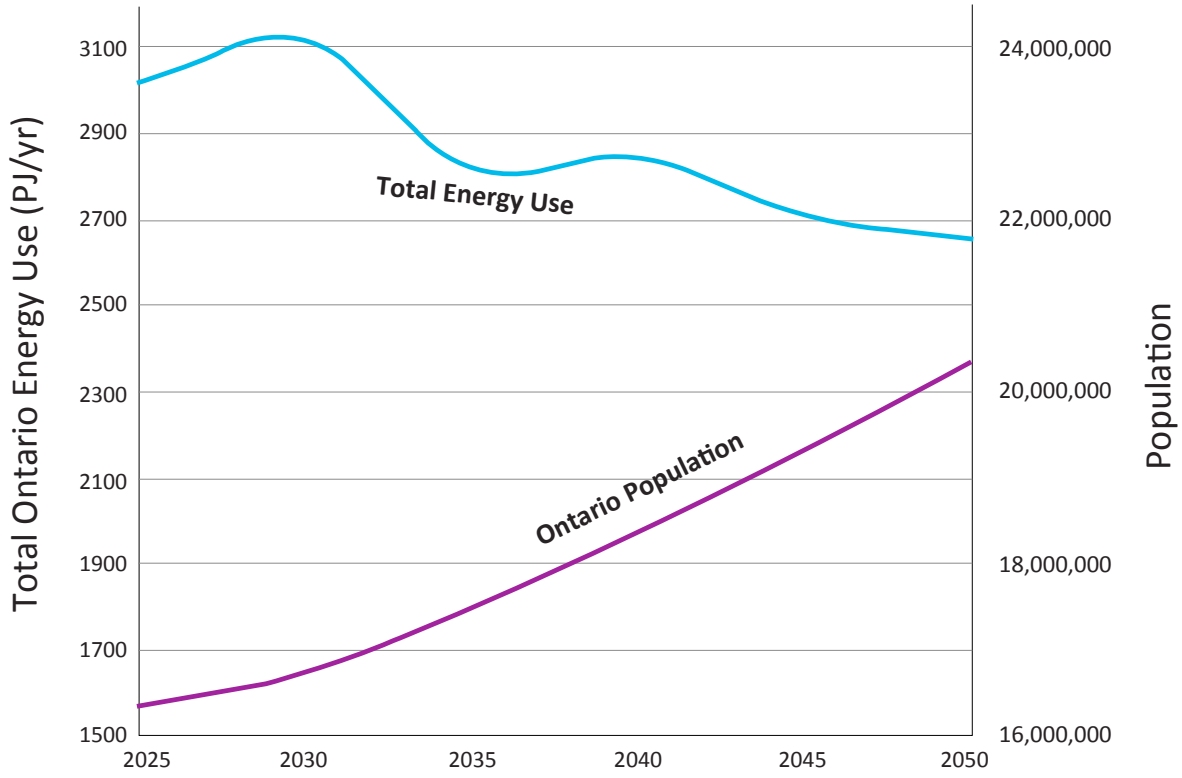
As energy use patterns shift, Ontario's integrated energy planning must continue to ensure access to reliable and affordable fuels – alongside electricity – to support jobs, energy security, and emissions reductions in every part of the province.

An Integrated Perspective on Economy-Wide Energy Demand

As the Province plans, it is no longer sufficient to look at demand for electricity and fuels in isolation. Ontario's evolving energy demand is influenced by interrelated energy use patterns across different energy sources and sectors of the economy, making an integrated, economy wide perspective of energy use helpful to inform coordinated energy planning.

Figure 8 shows one potential, integrated forecast of how total economy-wide energy use changes over time. Despite an increasing population and significant growth in electricity demand, total energy use could decline by 12 per cent over the long term, as a result of efficiencies due to electrification of certain technologies and sectors, as well as the province's energy efficiency programs.

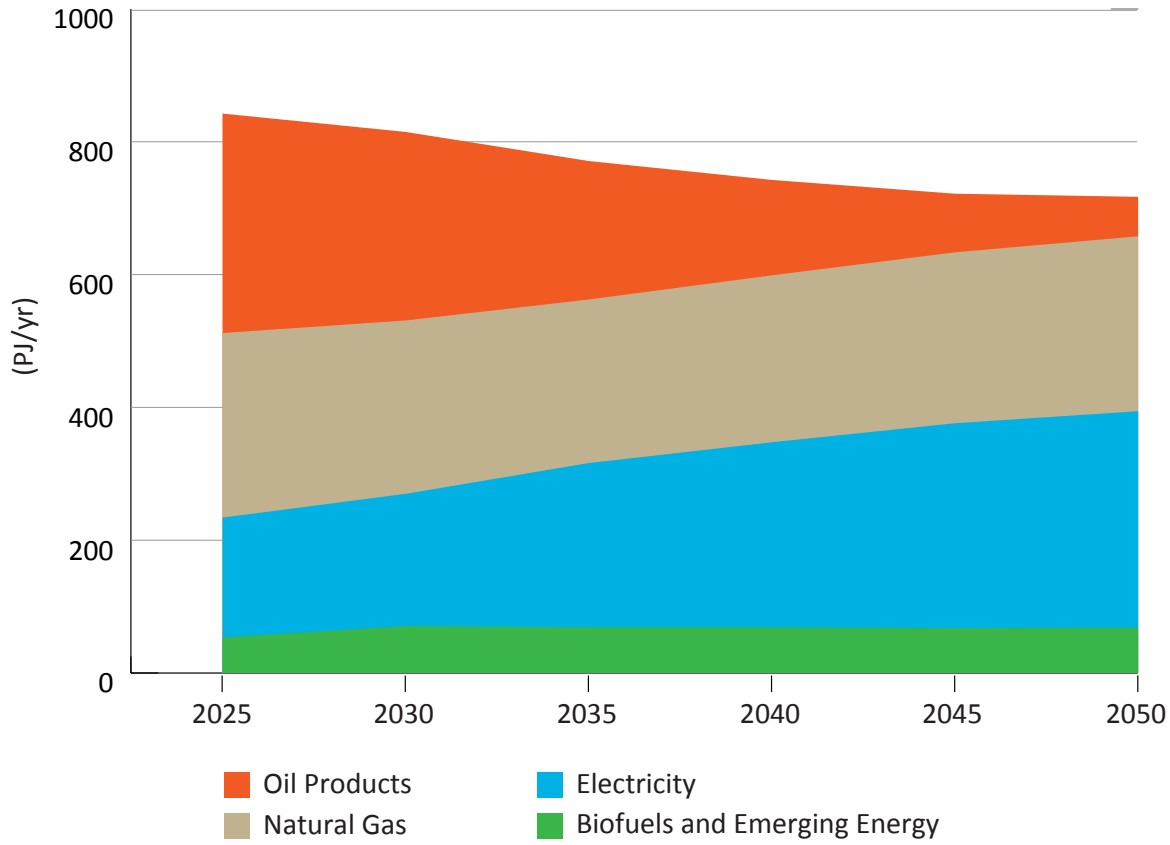
Figure 8: Forecast of Economy-Wide Energy Use and Population Growth



Over the next 25 years, total energy use could decrease due to electrification and energy efficiency programs, all while powering a growing economy and a population that is set to increase to almost 21 million.

Figure 9 highlights how energy use could look for Ontario households. This outlook – especially with respect to electricity use relative to natural gas and gasoline use - will be significantly impacted based on individuals' decisions on whether to electrify personal transport or home heating.

Figure 9: Forecast of Household Energy Use

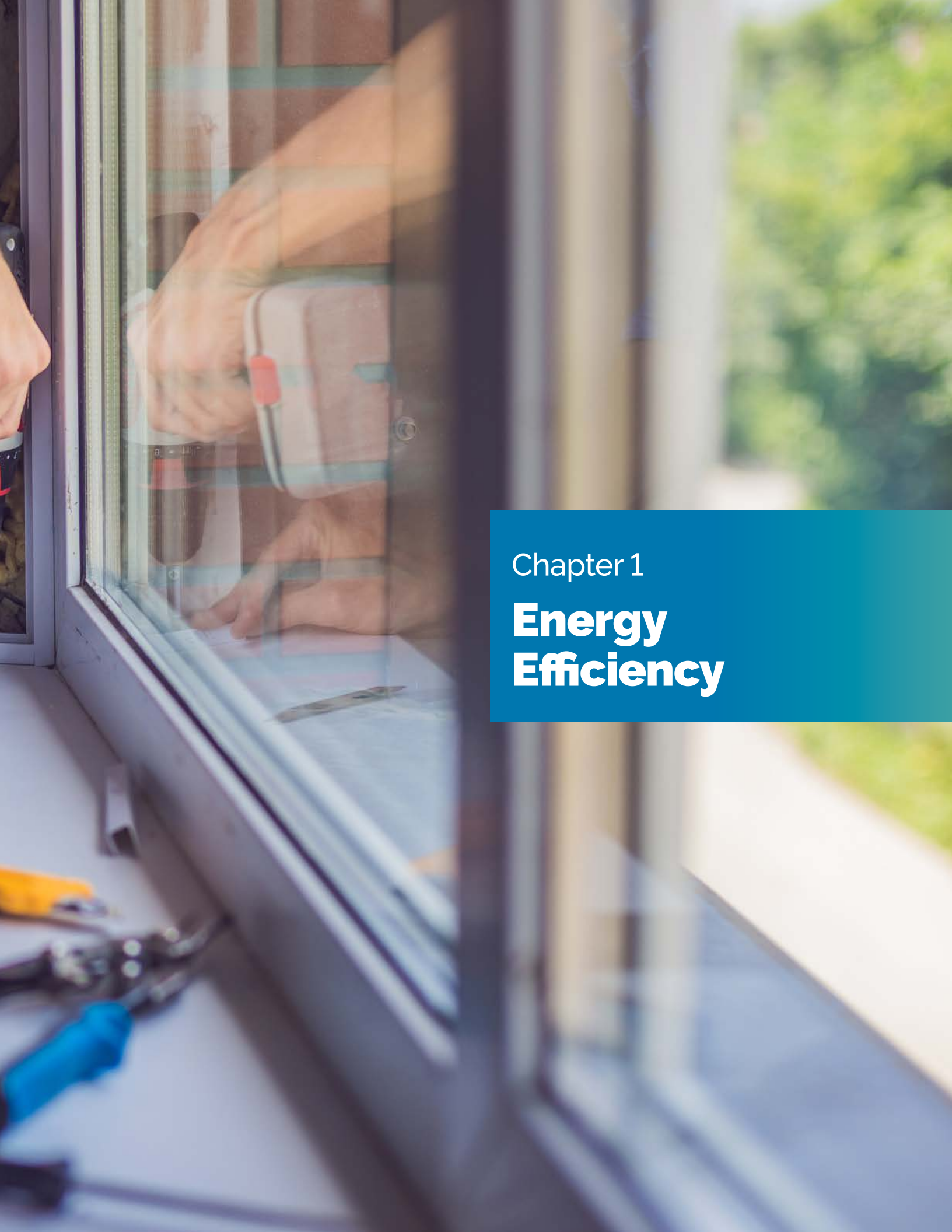


This figure illustrates how individuals' decisions to electrify personal transport or home heating could impact household use of electricity, natural gas and gasoline. Biofuels and emerging energy include biomass, hydrogen and renewable natural gas. Oil products include refined petroleum, fuel oils and natural gas liquids.

It should be noted that these forecasts only present one plausible potential energy future based on information available at the time of this Plan's development, including the IESO's 2025 APO. They reflect a point in time assessment, made with best-available data, and there is significant uncertainty in how energy use will be shaped by customer choice, market conditions, and the pace and scale of energy efficiency improvements across the province.

Furthermore, the figures do not reflect the potential impacts that could be realized through technology innovation and development of alternative energy sources such as low-carbon hydrogen. Though not reflected in this data, over the next 25 years, hydrogen could play a more significant role in Ontario's energy sector. Studies reviewed by Natural Resources Canada (NRCan) forecast hydrogen making up 12 to 18 per cent of energy use in the country by 2050 under supportive policy measures or key input cost reductions. Additionally, a whole-economy, integrated modelling study (see Chapter 7) projects that in 2050, hydrogen demand could make up three per cent of Ontario's total final energy demand, a significant part of Ontario's energy mix.

There is a need for ongoing integrated forecasting as Ontario continues to further integrate its energy planning processes across all fuels and sectors of the economy, as described further in Chapter 7.



Chapter 1

Energy Efficiency

Chapter 1

Energy Efficiency

Reducing energy use is one of the most cost-effective and immediate ways to meet Ontario's growing energy needs. The cheapest form of energy is the energy we do not use in the first place.

That is why energy efficiency is at the centre of Ontario's plan to build a more affordable, reliable, secure and clean energy system – one that supports a competitive, self-reliant and resilient economy.

As demand for energy rises – driven by population growth, electrification, and new economic development – helping families, businesses and institutions use electricity and natural gas more efficiently will play a vital role in maintaining reliability and affordability.

Ontario is leading Canada in making a historic 12-year investment in electricity energy efficiency and ongoing support for natural gas energy efficiency programs. Ontario is setting the national standard - driving down costs, reducing emissions, and boosting energy performance across every sector of the economy.

Electricity Energy Efficiency

To help families and businesses save money and manage their energy use during a period of rising demand, Ontario is making the largest investment in energy efficiency programs in Canadian history with $10.9 billion over 12 years. These programs are designed to reduce both energy consumption and peak demand without negatively impacting economic growth and job creation. In doing so, they will help to avoid or defer the need for new electricity generation, transmission and distribution infrastructure, lowering system costs and easing long-term pressures on ratepayers.

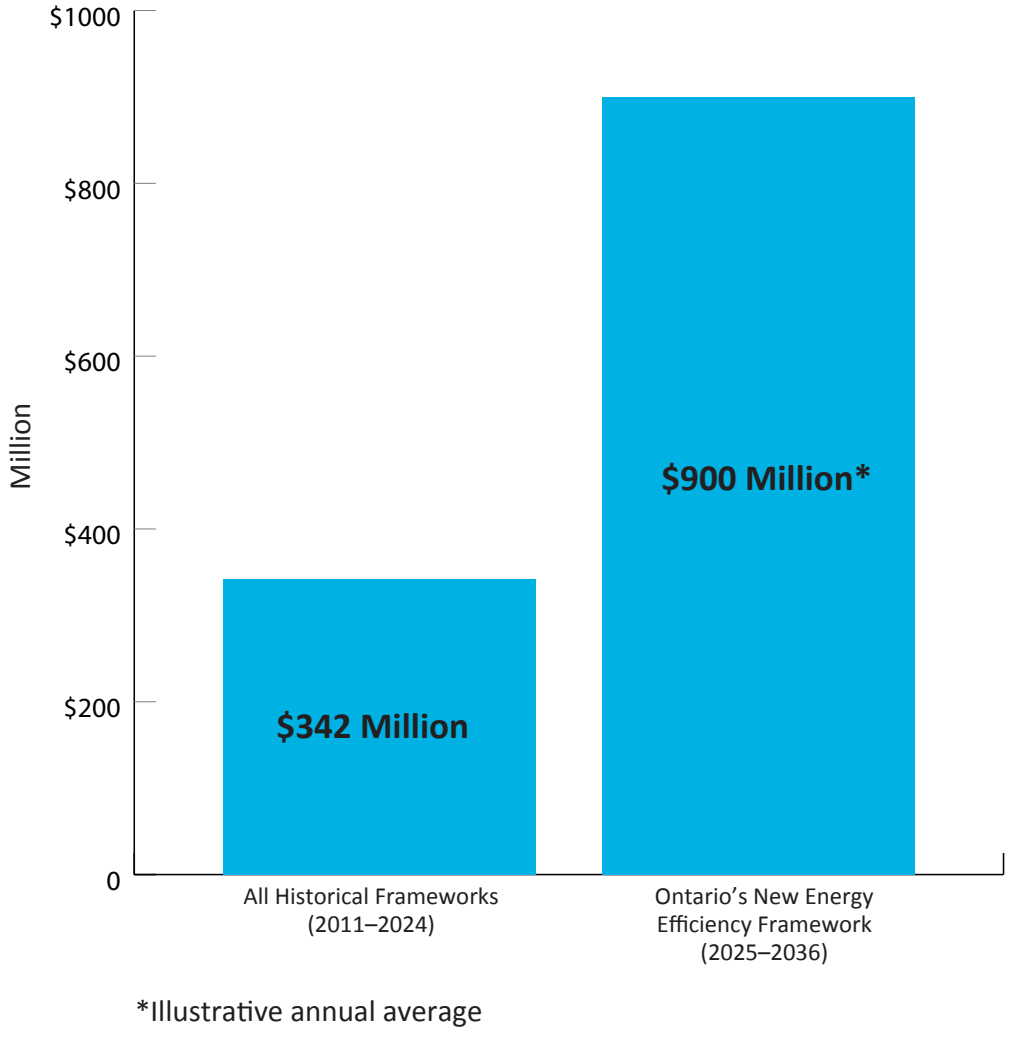
For the years 2025 to 2027, the IESO's published plan for these programs estimates that the portfolio of programs is projected to deliver energy at $0.031/kWh and demand at $287/kW, making it a competitive resource against most other options (e.g. wind, gas), with no need for siting of infrastructure or other approvals.

By 2036, this expansion of energy efficiency programs is projected to reduce the province's peak demand by 3,000 MW and electricity consumption by 18 TWh – the equivalent of taking three million homes off the grid – and save families and businesses $12.2 billion in nominal system costs. For residential customers this represents an average savings of $437 between 2025 and 2048.

This next generation of electricity efficiency programming also reflects a more integrated approach to energy planning – one that breaks down silos and embraces innovation to deliver better outcomes for ratepayers. New legislative changes, introduced through the *Affordable Energy Act, 2024*, now allow the IESO to deliver electricity efficiency programs that support a wider range of energy-saving technologies and home upgrades. This includes solutions that were not traditionally eligible under previous frameworks, such as electric heat pumps, which offer high-efficiency heating and cooling.

As a result, these programs form a cornerstone of Ontario's strategy to keep energy costs down while meeting the growing demand for electricity.

Figure 10: Largest Energy Efficiency Investment in Ontario's History



Ontario will invest nearly three times historical annual investment in electricity efficiency programs over the next twelve years, helping families and businesses save money.

New Programs

Home Renovation Savings Program
Ontario's new Home Renovation Savings Program offers rebates of up to 30 per cent for home energy efficiency renovations and improvements – including eligible windows, doors, insulation, air sealing, smart thermostats and heat pumps as well as rooftop solar panels and battery storage systems. These upgrades help families lower their energy bills, improve comfort and in some cases, generate and store electricity for personal use.

In early May 2025, the IESO expanded the Home Renovation Savings offer to provide new heat pump incentives to homes heated by oil, propane or wood. The Government is committed to further expanding the Home Renovation Savings offerings, for example heat pump rebates for all homes that meet program eligibility criteria, regardless of home heating type or utility. Later in 2025, the program will expand to include rebates for energy efficient appliances such as refrigerators and freezers.

To make it easier for homeowners to maximize their rebates, the program is being delivered through a "one-window" approach – providing access to electricity rebates, as well as additional rebates available through the province's natural gas energy efficiency programs. This integrated model helps households understand their full range of options, reduce paperwork, and pursue upgrades that offer the greatest combined energy and cost savings.

A single-family home that improves insulation, installs efficient windows and a smart thermostat, and replaces electric resistance heating with a cold-climate air-source heat pump (ccASHP) through the program could reduce annual electricity consumption by up to 10,000 kWh – resulting in monthly savings of $60 to $80 on electricity bills.

Peak Perks for Small Businesses

Building on the success of Ontario's Peak Perks program for residential customers, the Province has introduced a new stream aimed at small businesses, including convenience stores and restaurants. Small businesses receive a $75 incentive at enrollment, plus $20 annually for each enrolled thermostat afterwards in exchange for reducing their air conditioning usage during periods of high summer electricity demand.

This approach helps lower energy costs for businesses while contributing to a more stable and efficient electricity grid.

Expanding and Continuing Successful Energy Efficiency Programs

In addition to launching new initiatives like the Home Renovation Savings Program and expanding the Peak Perks Program to small businesses, Ontario has expanded and continued 12 proven programs that deliver results for households, business, municipalities and institutions, and Indigenous communities. Visit SaveOnEnergy.ca to learn more about these programs.

Peak Perks (residential) offers financial incentives for reducing air conditioning use during peak demand through existing smart thermostats. The original residential Peak Perks Program has already enrolled over 234,000 households, helping them save money and save energy.

Energy Affordability Program (residential) provides free energy-saving upgrades like appliances, insulation, and heat pumps for income-eligible households.

Expanded Access to Free Home Energy Upgrades

Ontario has expanded the Energy Affordability Program so more families can qualify for free energy saving upgrades. The income threshold for free comprehensive measures has increased from $36,578 to $47,090 for single-person households, and from $73,157 to $94,179 for four-person households – a more than 20 per cent increase over the previous limits.

The program offers energy-saving measures that can help eligible households lower their electricity costs by up to $750 per year, at no cost to the customer.

First Nations Community Building Retrofit Program (community) supports retrofits to band-owned buildings on reserve to reduce electricity use. The IESO also works directly with communities to support larger or more complex projects.

Remote First Nations Energy Efficiency Program (residential & business) delivers free energy audits and upgrades to homes and businesses in remote First Nation communities preparing to connect to the provincial electricity grid.

Local Initiatives Program (residential & business) provides targeted energy-saving programs in areas facing transmission constraints to improve local reliability and defer costly infrastructure upgrades.

Retrofit Program (business) helps commercial, institutional, agricultural, and multi-unit residential customers upgrade equipment such as lighting, HVAC systems, and manufacturing tools with more efficient models.

Industrial Energy Efficiency Program (business) offers large industrial customers up to $5 million in incentives to deliver major electricity savings through capital-intensive projects.

Small Business Program (business) provides no-cost upgrades to help businesses with 50 employees or fewer lower their electricity bills, including incentives for lighting, HVAC, and refrigeration.

Energy Performance Program (business) offers pay-for-performance incentives to businesses that reduce electricity use by at least 5 per cent through capital upgrades or operational changes.

Strategic Energy Management Program (business & municipalities) provides coaching, training, and financial incentives to support in-house energy managers in identifying and implementing savings opportunities.

Existing Building Commissioning Program (business) supports companies in hiring specialists to recommission building systems for optimal energy performance.

Instant Discounts Program (business & institutions) offers instant, point-of-sale discounts on eligible lighting products purchased from participating distributors and dealers.

Energy Efficiency at Work

Elgin Barrow Arena in Richmond Hill is scoring energy savings while improving the experience for players and fans. Through the Save on Energy Retrofit the arena received a $3,150 incentive to replace its rooftop HVAC system with a more energy-efficient model with modern controls.

The result: 13,000 kWh in electricity savings annually, better temperature regulation for both the building and the ice surface, and a more comfortable environment for skaters, spectators and staff.

Saving Energy, Serving Residents

Simcoe County Housing Corporation is cutting costs and improving comfort by investing in high-efficiency natural gas systems. With support from the Province's natural gas energy efficiency program, the organization upgraded equipment including a domestic hot water boiler, resulting in up to 40 per cent energy savings, lower emissions, and improved comfort for the seniors, families, and individuals they serve.

These upgrades are also helping the County meet its long-term energy reduction targets.

Natural Gas Energy Efficiency

Since 1995, Ontario's primary natural gas utility, Enbridge Gas, has delivered energy efficiency programs to its customers under the oversight by the Ontario Energy Board (OEB). These programs are available for all customer segments, including residential, commercial, institutional, and industrial customers.

Ontario's natural gas energy efficiency programs are delivered under multi-year frameworks that are approved by the OEB. Under the current three-year plan which began in 2023, Enbridge Gas is delivering energy-saving programs with an average annual budget of $175 million – more than 30 per cent higher than the OEB-approved level for 2022.

In 2023 alone, Ontarians' participation in natural gas energy efficiency programs resulted in annual savings of 121 million cubic metres of gas – equivalent to the amount of natural gas used by 53,000 homes in a year – while helping to avoid 230,000 tonnes of GHG emissions each year.

Residential Programs
Natural gas energy efficiency programs for households are delivered in coordination with electricity programs through the Home Renovation Savings Program, offering combined incentives to reduce energy bills and improve home comfort. Rebates are available for upgrades such as insulation, air sealing, windows and doors, and heat pump water heaters.

Business Programs
Small businesses, commercial businesses, industrial facilities and institutional consumers can access incentives to improve their heating systems, food service operations, manufacturing processes, and agricultural greenhouse energy use. Support is available through either fixed incentives for each item of equipment installed, or a custom incentive for more complex projects based on their measured savings.

Low-Income and Affordable Housing Programs
Low-income households may receive free energy efficiency upgrades, including professionally installed insulation and draft proofing, which can deliver savings of up to 30 per cent on energy use. Customers who qualify for the IESO's Energy Affordability Program are automatically eligible for Enbridge Gas' low-income program, and vice versa.

In addition, the Affordable Housing Multi-Residential program offers rebates and direct install for high-efficiency natural gas upgrades in both social housing or privately owned buildings that serve low-income tenants.

Efficiency Standards and Access to Energy Data

Giving consumers greater control over their energy use is central to Ontario's approach to affordability. These initiatives reflect the province's commitment to *customer choice* — helping families, businesses, and institutions lower costs by choosing the energy solutions that work best for them. From high-efficiency appliances to usage data, Ontario is providing the tools people need to make informed decisions, reduce consumption, and manage bills.

Energy Efficiency Standards

Ontario maintains some of the highest energy efficiency standards in North America, covering more than 90 products across residential, commercial, and industrial sectors – including appliances powered by electricity, natural gas, propane and oil. These standards, alongside energy efficiency programs, play a critical role in reducing energy demand in the province.

To ensure consumers continue to benefit from affordable, high-efficiency products, Ontario is working with other provinces and the federal government to align standards nationally, reduce red tape for manufacturers, and expand product choice for Ontarians. The Province is also committed to updating and harmonizing its efficiency standards with leading North American jurisdictions to ensure continued progress.

Access to Energy Data

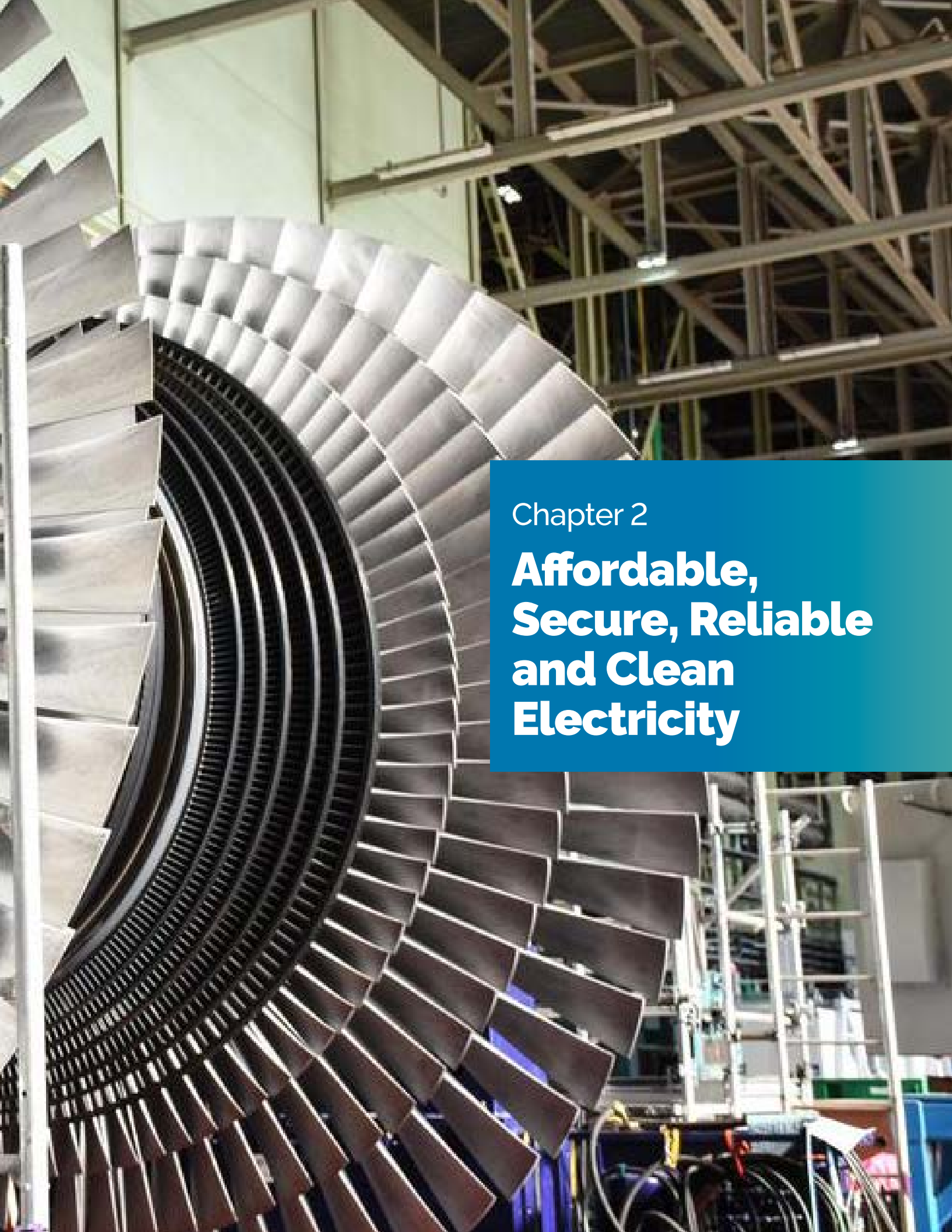
Better access to energy data empowers consumers, businesses and public institutions to manage their energy use and reduce costs. Ontario supports this work through a suite of programs and tools.

Green Button, now adopted by electricity and natural gas utilities throughout Ontario, gives residential and commercial customers secure and private access to their energy usage data – enabling smarter energy decisions and easier participation in energy-saving programs.

Ontario's Energy Reporting and Benchmarking (ERB) programs help owners and operators of large buildings, such as commercial offices and multi-unit residential buildings, and of broader public sector buildings, such as schools and hospitals, to track and improve their energy consumption over time. By providing consistent, standardized data, the program supports smarter investment in building efficiency and contributes to Ontario's broader efforts to reduce energy demand and operating costs across the built environment.

Ontario also enables access to aggregated, non-personal electricity data for researchers, municipalities and government agencies, while also publishing public datasets to support broader policy development and innovation.

These efforts reflect Ontario's commitment to modernizing energy data access, supporting informed decision-making, and unlocking new opportunities for efficiency across the energy system.



Chapter 2

Affordable, Secure, Reliable and Clean Electricity

Chapter 2

Affordable, Secure, Reliable and Clean Electricity

Energy efficiency will help reduce the need for new electricity generation – but it won't be enough on its own. Even with ambitious conservation efforts, Ontario is projected to require up to 75 per cent more electricity by 2050 to support a rising population, a growing economy, and widespread electrification.

Meeting this demand is essential, not just to power new homes and businesses – but for building a more affordable, secure, reliable and clean electricity system that keeps Ontario competitive and energy self-reliant in a rapidly changing world.

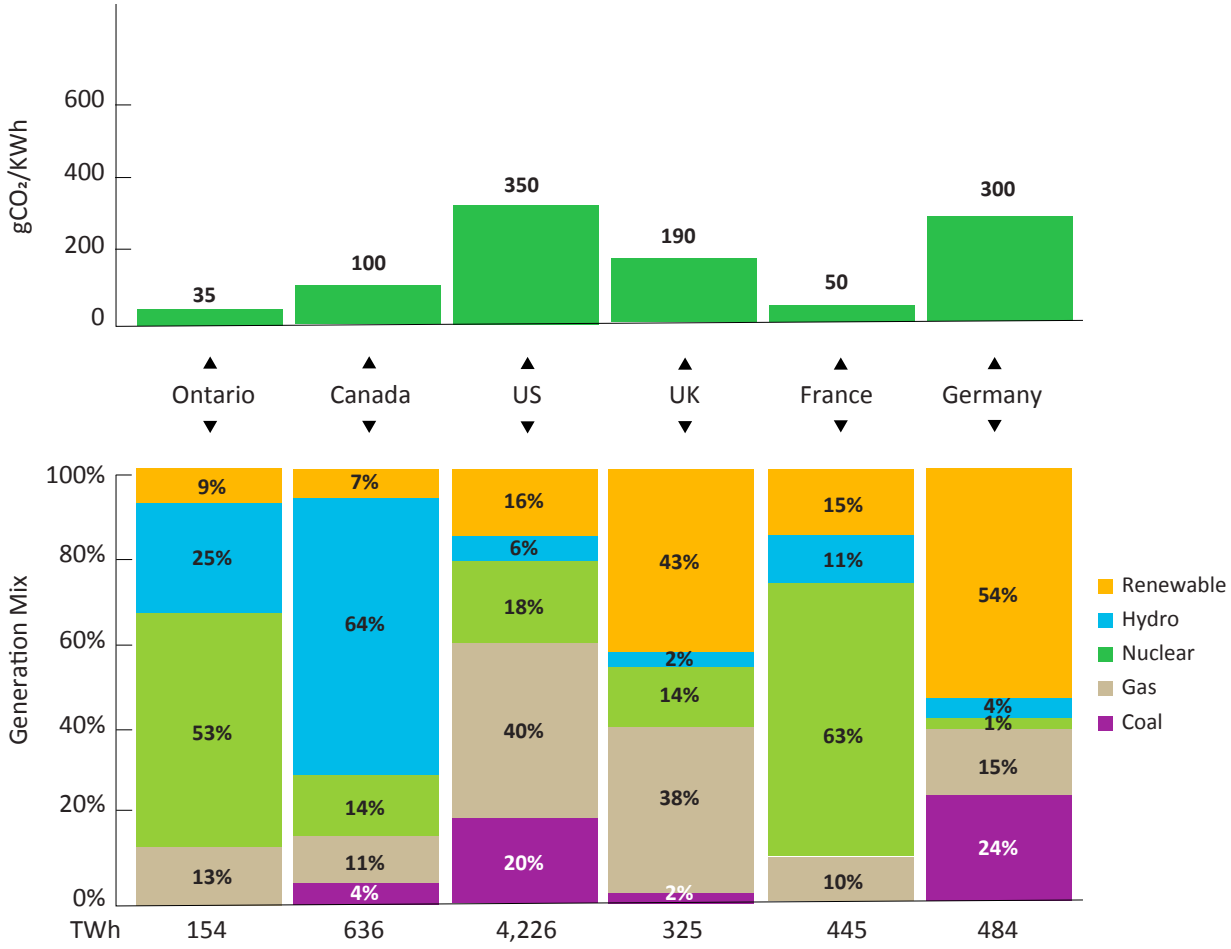
That's why Ontario is acting now with a decisive plan to both re-secure its existing supply and build new generation capacity – in ways that keep energy affordable for families and businesses.

This chapter outlines the current state of Ontario's electricity generation mix and details the plan the Province is implementing to ensure it can meet growing demand.

These actions include refurbishing and expanding Ontario's nuclear fleet, renewing aging hydroelectric stations, launching competitive procurements for new generation and storage, and advancing the pre-development of major projects like pumped storage, which will ensure we have a secure, reliable and clean system in the years ahead while reducing long-term system costs.

Ontario's Electricity Mix

Figure 11: Ontario has one of the cleanest electricity grids in the world



With nuclear and hydroelectric generation supplying more than 70 per cent of the province's electricity, Ontario has one of the cleanest electricity grids in the world – more than two times cleaner than the average in the United States.

Ontario's electricity system is supplied by a mix of generation sources, with nuclear and hydroelectric power providing the majority of the province's electricity needs. In 2024, nuclear energy accounted for just over 50 per cent of total generation, while hydro contributed 24 per cent.

Natural gas continues to play a critical role in meeting peak demand and supporting system reliability, particularly during periods when renewable output is low or demand is high. While it only provides about 16 per cent of the province's power, its use is expected to remain above typical levels through this decade as a significant portion of Ontario's nuclear fleet undergoes scheduled refurbishments. These refurbishments are essential to extending the life of Ontario's nuclear units and securing decades of reliable, zero-emissions electricity. Once complete, the province will benefit from renewed baseload capacity while reducing natural gas usage on the grid.

Wind and solar contribute approximately nine per cent and two per cent of overall generation, respectively - however their role is expected to grow over time. Starting in 2025, nearly 3,000 MW of energy storage will be added to the grid enabling intermittent renewables to play a more reliable and integrated role. That growth is being driven by economics: Ontario is advancing competitive energy procurement that prioritize affordability, system reliability and value for ratepayers.

Ontario is well positioned with a diverse electricity grid – one of the cleanest in the world – that can support the province's growth while helping to maintain affordability for families and businesses.

Nuclear Power

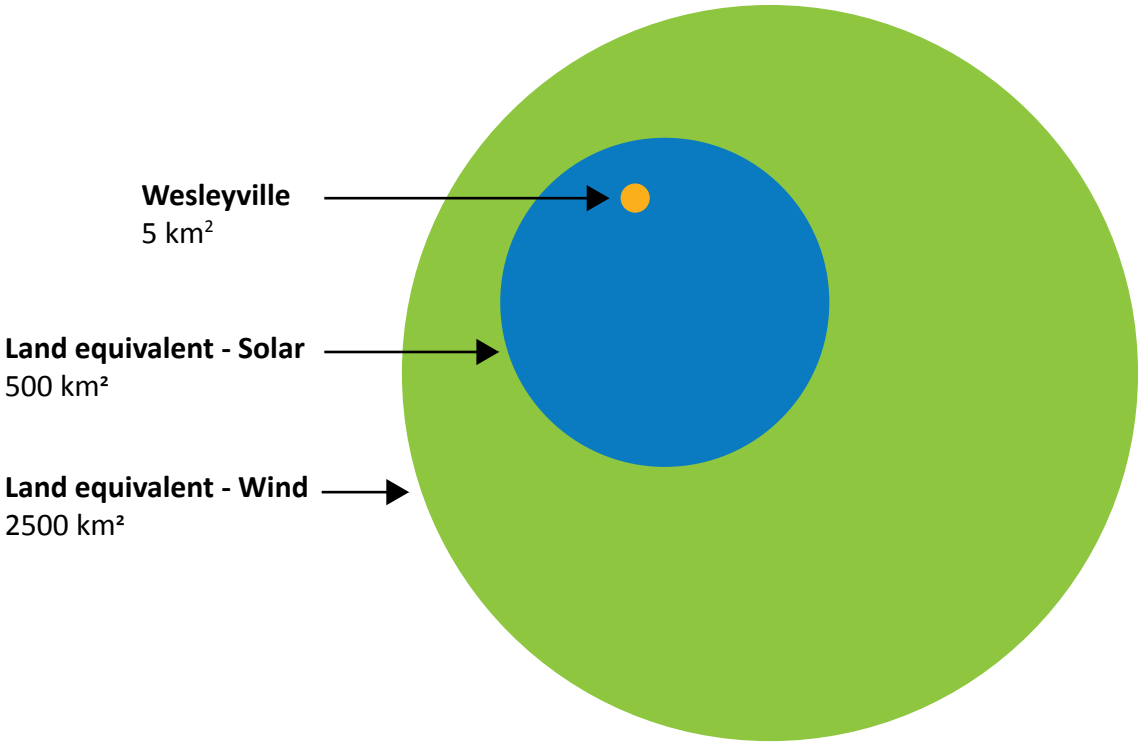
Nuclear power currently provides more than 50 percent of Ontario's electricity supply. It played a crucial role in Ontario's efforts to eliminate coal power generation and will remain vital as energy demand increases.

Under *Energy for Generations*, clean, affordable and reliable nuclear power will continue to serve as the backbone of the province's electricity system providing the 24/7 baseload power the province's economy requires.

Today, Ontario's three nuclear sites – Darlington, Bruce and Pickering – have a combined installed capacity of over 12,000 MW. These facilities currently deliver reliable electricity at a price lower than any other resource with the exception of Ontario's hydroelectric fleet. This cost reflects a proven, emissions-free technology that limits land use impacts.

According to the IESO, the province could need up to 17,800 MW of new nuclear generation to meet rising demand in a high electrification scenario. That is the equivalent of adding about five Darlington Nuclear Generating Stations to the grid.

Figure 12: Nuclear Energy Significantly Reduces Electricity Land Use Requirements



To generate the same amount of energy as a potential 10,000 MW nuclear station at Wesleyville, the province would need to set aside approximately 100 times more land for solar and 500 times more land for wind, highlighting the energy density and land efficiency of nuclear power.

Canada's Nuclear Fuel Advantage

Canada is home to one of the world's only fully integrated nuclear fuel supply chains, built on the partnership between Saskatchewan's uranium mining sector, and Ontario's processing conversion and manufacturing expertise.

Ontario is home to five licensed uranium processing and fuel fabrication facilities, employing over 1,300 skilled workers. This includes the world's largest uranium refiner, located in Blind River, where uranium oxide concentrate or "yellowcake" – primarily from Saskatchewan – is refined into high-purity uranium trioxide powder.

From there, the uranium is sent to Port Hope, where it is converted into two products:

- Uranium hexafluoride, used internationally for enriched uranium fuel in light water reactors.
- Uranium dioxide, used to produce fuel for CANDU reactors.

For the CANDU fleet, uranium dioxide powder is processed at fuel fabrication facilities located in Port Hope, Toronto, and Peterborough, where it is pressed and fired into fuel pellets, loaded into fuel rods, and assembled in CANDU fuel bundles – supporting reactors in Ontario, across Canada and around the world.

Nuclear Refurbishments

Ontario's existing nuclear generating stations at Darlington, Bruce and Pickering have provided safe, affordable and clean power for the province for more than 50 years. After this amount of service time, CANDU units require refurbishment to continue operating safely and efficiently for decades to come.

Together, Ontario's nuclear refurbishments represent one of the largest clean energy infrastructure programs in Canada's history. These projects are creating thousands of jobs for skilled tradespeople and professionals and are driving investment into Ontario-based manufacturers and suppliers. The refurbishments are anchoring a domestic nuclear supply chain that supports long-term energy security, economic resilience, and innovation – while ensuring that Ontario continues to benefit from affordable, non-emitting baseload power for decades to come.

Darlington
The Darlington refurbishment will secure 3,500 MW of clean, reliable, low-cost power for an additional 30 years. When complete, the project will extend the life of the station to 2055, helping to meet the province's long-term energy demand.

This OPG-delivered project remains on-time and on-budget, with Unit 1 returning to service nearly five months ahead of schedule in November 2024. The final unit (Unit 4) is expected to be complete in 2026.

The project is supporting over 14,000 jobs across Ontario throughout its life, including direct, indirect, and induced employment.

Bruce Power
The Bruce Power refurbishment will secure at least 6,550 MW of clean, reliable and low-cost power for decades to come. Refurbishment of Units 3 through 8 is underway and expected to be completed by 2033, extending the life of the station into the 2060s.

Units 1 and 2 at Bruce Power were fully refurbished and returned to service more than a decade ago. These

refurbishments were advanced at the time to address immediate supply needs associated with Ontario's coal phase-out. Since returning to service, both units have demonstrated safe, reliable performance. However, because they were refurbished earlier than Units 3–8, they are expected to reach their end of service life sooner.

The government recognizes the potential of Bruce Power Units 1 and 2 as a future source of clean, reliable electricity. Their continued operation could be secured through a second refurbishment, which remains an available option that can be explored under the existing contract between Bruce Power and the IESO. Any decision would be guided by a recommendation from the IESO based on an assessment of system needs, project timing, and value for ratepayers.

In addition to refurbishment, Bruce Power is pursuing opportunities to optimize the output of its existing nuclear units, with a target to reach 7,000 MW of peak output – a 450 MW increase over current capacity – by the 2030s through a combination of asset optimization, innovation and leveraging new technologies.

The Life-Extension Program at Bruce Power is supporting an estimated 22,000 direct and indirect jobs annually across Ontario.

Pickering

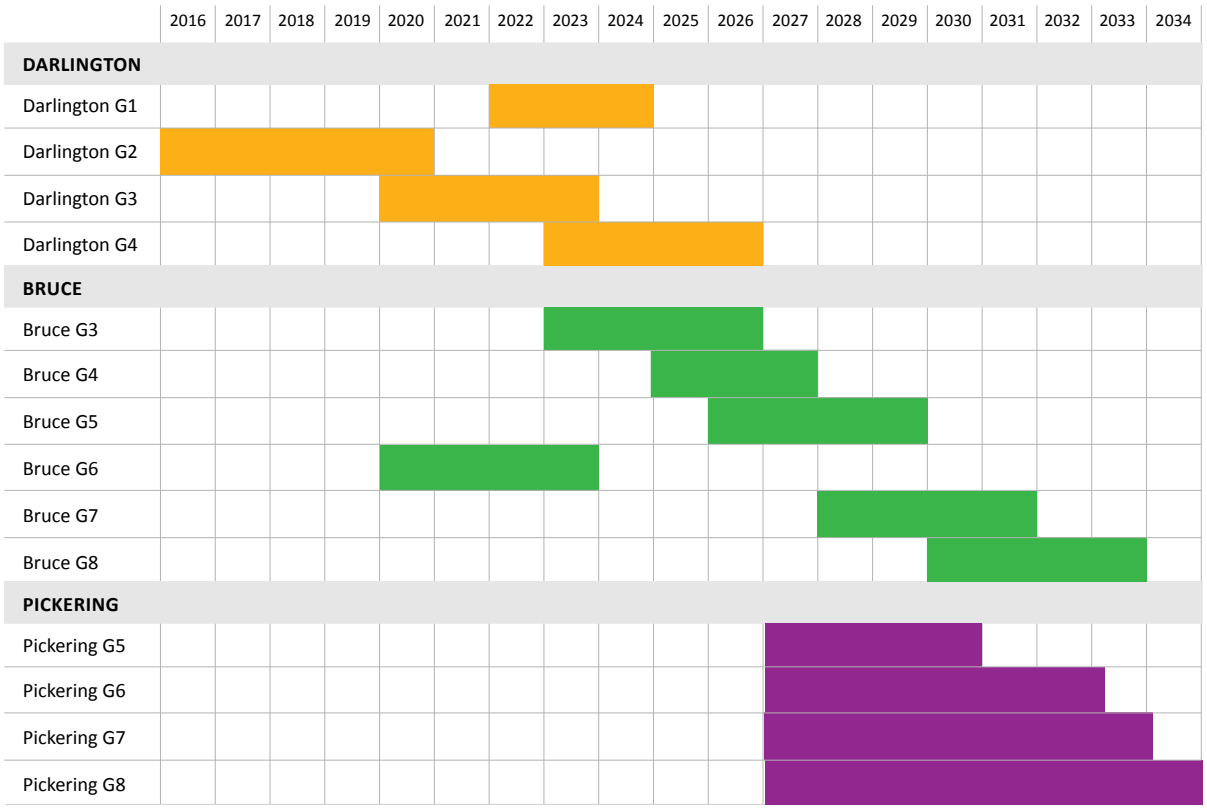
The Ontario government is supporting Ontario Power Generation's (OPG's) plan to proceed with the next steps toward refurbishing Pickering Nuclear Generating Station's "B" units (units 5-8).

OPG is currently in the Project Definition Phase, which will last through the end of 2026. This phase includes detailed engineering and design work, procurement of long-lead components, and development of a final cost and schedule estimate. The government is supporting OPG's $4.1 billion budget for this phase, bringing the total funding allocated to this project to-date to $6.2 billion.

Pending final approvals and confirmations of scope and budget, refurbishment of Pickering, which is one of the country's best run nuclear generating stations and a critical source of clean power for two million homes, is anticipated to be complete by the mid 2030s.

The full refurbishment is expected to support 11,000 jobs annually during peak construction years.

Figure 13: Planned Nuclear Refurbishment Outage Schedule



The Darlington Refurbishment Project Started in 2016 and is scheduled to end in 2026. The Bruce Refurbishment started in 2020 and is scheduled to end in 2033. Pending final approvals, the Pickering Refurbishment Project is scheduled to start in 2027 and end in the mid-2030s.

Small Modular Reactors

Premier Ford joins Ontario's skilled workers to break ground for Canada and the G7's first Small Modular Reactor.

Ontario is building on its refurbishment experience as it supports the development and deployment of the first grid-scale small modular reactor (SMR) in Canada and the G7 at Darlington, to help meet rising energy demand. The project is being developed through a partnership with GE Hitachi Nuclear Energy (GEH), AtkinsRéalis, Aecon, and Kiewit with the first unit entering commercial service before the end of 2030.

The government is also working with OPG to advance planning and licensing for three additional SMRs for a total of four at the Darlington nuclear site. The additional SMRs, subject to approvals, would come online between 2033-2035. This timing allows OPG to apply learnings from the construction of the first unit to deliver cost savings on subsequent units.

On May 8, 2025, the Ontario government approved OPG's plan to begin construction on the first of four SMRs at the Darlington nuclear site. The government is supporting OPG's $20.9 billion budget for the Darlington New Nuclear Project, which includes site preparation, design and engineering work, and the construction of all four SMRs.

During project development OPG will continue to build respectful, collaborative relationships with the communities of the Williams Treaties First Nations, while pursuing potential opportunities for their equity partnership and commercial participation in the project. This would be a first-of-its-kind partnership in Canada for nuclear energy generation, reflecting the government and OPG's commitment to ensure local First Nations benefit from new projects in their territories.

The construction, operation and maintenance of the four units will add $38.5 billion to Canada's GDP over the next 65 years. 80 per cent of project spending goes to Ontario companies. Construction and operations will sustain, on average, an estimated 3,700 highly skilled, good-paying jobs for the next 65 years.

Ontario's Small Modular Reactor Supply Chain

Powering our clean energy future

Barrie
4 Directions

Bradford
Voyageur Services Ltd.

Bowmanville
Boyle Excavating Ltd.
Willscot

Brampton
Aquatech Dewatering Company Inc.
ATS Industrial Automation

Brantford
Apex Chain & Cable
Lintec Print Solutions
Petrudev Inc.

Burlington
Bentley Canada Inc.
EXP
Hatch Ltd.
XS Soil Solutions Inc.

Cambridge
BWX Technologies Inc.

Cobourg
Sean Hinchberger Inc.

Concord
Cropac
Clearway Construction
Smith & Long
Stinson Owl-Lite

Dunnville
A6N

Greely
Gillam

Guelph
Norseman

Hamilton
BOS Innovations

Jordan Station
Peninsula Construction

Kitchener
Walter Fedy
WI Canada

London
Planet Stitch

Maple
Northern Transformers

Markham
Cansel Survey Equipment
Chemetics
Ecometrix Inc.
GE Vernova Hitachi Nuclear Energy
Global Industrial Canada
Piro Consulting

Mississauga
4 REFUEL
AtkinsRéalis
CSI-Forterra
Tetra Tech Canada Inc.

New Tecumseth
Salit Steel

North Bay
Norvent

Peterborough
Cambium Indigenous Professional Services (Cips) Inc.

Pickering
Chemetics
Wag Qa Services Canada Inc.
Tetra Tech Inc.

Newmarket
Alternative Solutions Inc.
Comtech Group Inc.

Niagara Falls
Stone Tucker Instruments

North York
Algal Engineering Ltd.

Oakville
Kiewit Canada Group

Orangeville
Aquatec

Oshawa
Williams Communication Services

Ottawa
Anish Branding

Richmond Hill
ES FOX Ltd.
Mansteel Rebar

Sault Ste. Marie
Algoma Steel

Simcoe
Armstrong Mechanical Solutions
Hunt's Transportation
Sarens

Stratford
Arrow Custom Machining Ltd.
Canada Building Materials
Dean Marine
Rabbit Pick Up and Delivery Inc.

Thessalon
Manitoulin Transport

Thunder Bay
Superior Strategies Inc.
Warrior Engineering Ltd.

Toronto
A3F
Aecon Group Inc.
Beacon Environmental
CN Rail
Earl Oneil Electric Supply Ltd.
Human Resources
Hydro One
Hydro One Networks Inc.
Isaac Operations Ltd.
Jensen Hughes Consulting Canada Ltd.
Kinectrics
Nuclear Promise X Inc.
Rite Way Freight
Sarens Canada
Worley Canada Services Ltd.
WSP Canada Inc.

Trenton
Okwaho Aluma

Vineland
Peninsula Fencing

Waterloo
PDI

Whitby
Indigenous Marketing Solutions
WSP Canada Inc.

Ontario's Small Modular Reactor Supply Chain

More than 80 Ontario-based companies have already signed agreements with OPG to support the construction of Canada's – and the G7's – first grid-scale SMR. From component manufacturing to engineering, construction, and project management, these firms are helping to deliver this first-of a-kind project while developing skills, expertise, and technologies that can be exported around the world.

Ontario's early leadership is positioning its nuclear supply chain to benefit from a growing domestic and global market for new nuclear technologies. The province is already seeing interest from other Canadian jurisdictions – including Alberta, Saskatchewan, and New Brunswick – as well as international partners such as the United Kingdom, Poland, Estonia, the United States, Finland, and Belgium.

By acting early, Ontario's companies will be well-placed to serve both future domestic deployments and international SMR opportunities, creating long-term jobs and economic growth while strengthening energy security at home and abroad.

New Large-Scale Nuclear Energy

As Ontario looks beyond the current wave of refurbishments and ground-breaking SMR development, the government is taking a long-term view to ensure the province has options for additional large-scale nuclear generation to meet future electricity demand. New nuclear facilities can take more than a decade to plan, license, and build. That's why Ontario is beginning work now, including with Indigenous and local communities, so new generation can be brought online when and where it's needed.

Through site assessments, early community and rights-holder engagement, and pre-development activities at multiple locations, the Province is preparing the groundwork today for the large-scale projects that may be needed in the 2030s and beyond.

Bruce Power

Through *Powering Ontario's Growth*, the government launched pre-development work to site the first large-scale nuclear build in Ontario since 1993 at its existing Bruce nuclear site.

The Bruce Nuclear Generating Station is already the largest operating nuclear generating station in the world, supplying about 30 per cent of Ontario's electricity today.

If approved, the proposed expansion – referred to as Bruce C – could add up to 4,800 MW of reliable, zero-emissions generation at the site, enough to power 4.8 million homes.

Pre-development work is now underway to help evaluate the suitability of the site. In August 2024, Bruce Power submitted an "Initial Project Description" to the Impact Assessment Agency of Canada, launching the federal approval process for the project.

OPG's Wesleyville Site is zoned for electricity generation, is close to existing transmission infrastructure and is located in a region experiencing significant growth.

Ontario Power Generation

OPG is advancing early-stage planning for new large scale nuclear generation at their existing site in Port Hope (Wesleyville).

This 1,300-acre site, originally developed for electricity generation, is already zoned for such use and is strategically located near existing transmission infrastructure, rail lines, and major highways. It also has access to Lake Ontario for cooling water, making it well-suited for new nuclear development.

OPG is engaging with the Municipality of Port Hope and the Williams Treaties First Nations to explore the potential for new nuclear at the site. Early assessments suggest the site could host up to 10,000 MW of new nuclear generation, enough to power approximately 10 million homes.

A project of this scale would deliver far more than clean, reliable electricity. According to the Conference Board of Canada, nuclear development at Wesleyville could contribute up to $235 billion to Ontario's GDP over a 95-year project life – including design, construction, operations, and maintenance. It would also support 10,500 jobs across the province, including 1,700 good-paying jobs in Port Hope, boosting local employment levels by up to 20 per cent.

In addition to Wesleyville, OPG is working with municipalities and Indigenous Nations and communities at its Nanticoke site in Haldimand County and Lambton site in St. Clair Township to determine community support for new energy generation, including nuclear. These sites are also zoned for electricity generation and are located near existing infrastructure in regions experiencing significant growth.

In all cases, these early conversations with communities will include how they would be supported and the potential benefits of the project. Among the benefits are:

- Opportunities for equity participation for Indigenous communities in the generation projects.
- Up to a total of $50 million for municipal host communities across the three sites to support community infrastructure investments and attract co-located industry.
- Additional municipal property taxes related to new generating stations and co-located companies.
- Associated jobs and economic development for municipalities and Indigenous communities from new generation, co-located industries and supply chain spending.

Planning Ahead for New Nuclear and Hydroelectric

To ensure Ontario can bring new, large-scale clean generation online when it is needed, the government is directing the IESO to incorporate prospective nuclear and hydroelectric sites into its long-term electricity system planning.

This work will help identify the transmission infrastructure required to connect major new projects such as those under consideration at Bruce Power and OPG's Wesleyville site – to Ontario's grid. It will also ensure that new large hydro developments, including in northern Ontario, can be integrated efficiently and cost-effectively.

Selecting Ontario's Next Large-Scale Nuclear Technology

As Ontario plans for the next generation of nuclear energy, the government is ensuring OPG and Bruce Power take a deliberate, coordinated approach to evaluating future large-scale nuclear technologies at their sites. This approach recognizes the long lead times, complexity, and lasting impacts of new nuclear projects and would draw on the expertise of the IESO to support informed, long-term decision-making on the role of nuclear energy in Ontario's future electricity system.

To support this work, the government is establishing a New Nuclear Technology Panel. The panel would include senior leadership from OPG, Bruce Power, the IESO, and the government.

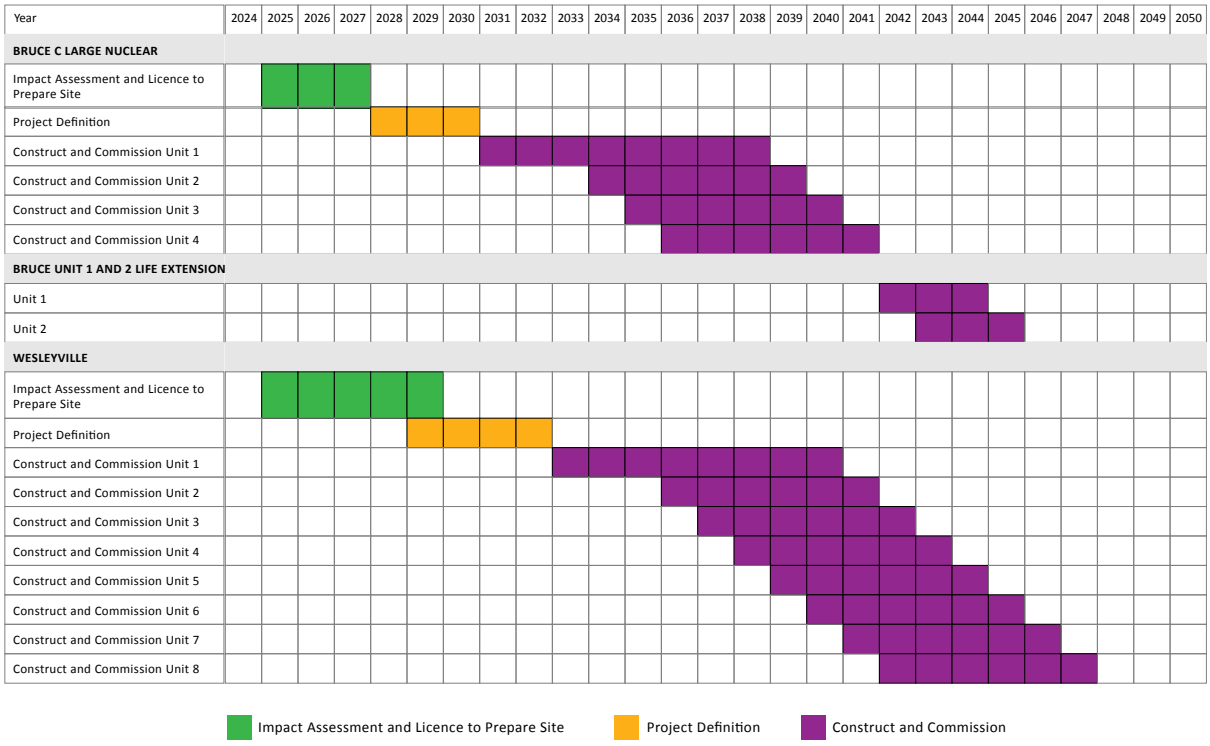
The panel will ensure that the coordinated selection process by OPG and Bruce Power considers a wide range of policy objectives – including safety, cost-effectiveness, energy security, and the potential to maximize economic and job benefits across Ontario. The panel will also ensure a coordinated approach to timing for a technology selection decision.

Planning for New Nuclear Energy

OPG, Bruce Power and the IESO have confirmed that the deployment of up to 17,800 MW of new nuclear in the province by 2050 is feasible, to power economic growth and electrification of Ontario's economy.

Achieving the capacity target in this scenario would require building at minimum the equivalent of eight large nuclear units or 8,000 MW (in addition to the four units already planned at Bruce C) and potential life extension of Bruce Units 1 and 2. In order to deliver on that level of build out Ontario's nuclear operators and the IESO concluded that the Province would be required to utilize OPG-owned generation sites such as Wesleyville and emphasized that early engagement and assessment work, such as the public and Indigenous engagement that launched in Port Hope earlier this year, is essential to being able to deliver additional new large scale nuclear builds.

Figure 14: Illustrative Large-Scale Nuclear Deployment Schedule



To meet a high demand scenario construction of new large-scale nuclear units would need to begin in the early 2030s.

The government also recognizes that nuclear projects are complex and capital-intensive and is exploring the potential for innovative equity partnership opportunities and ownership models that can unlock private sources of capital for the successful development of nuclear generation projects. As part of that effort, Ontario will lead a national conversation – beginning this year – with Ontario and Canadian pension funds and institutional investors to explore opportunities for investment.

By attracting investment from pension funds, institutional investors, and other Canadian partners, the government's goal is to keep more Canadian energy dollars working here at home – building Canadian energy projects with Canadian workers, powering our economy, and building long-term prosperity for families and businesses across the country.

The government is directing the IESO to work with OPG and Bruce Power on next steps outlined in their feasibility study to ensure prospective sites for new nuclear generation are considered in electricity system and transmission planning studies.

Hydroelectricity

Hydroelectric power currently provides about 24 per cent of Ontario's electricity, and under *Energy for Generations* will continue to be an important source of clean and reliable energy for the province.

Ontario's government has made it a priority to expand and refurbish the province's existing hydroelectric fleet. This approach recognizes that while large hydro projects require significant upfront investment and long lead times, they become multi-generational assets – providing decades of non-emitting electricity, system flexibility, and economic benefits, particularly for northern and Indigenous communities.

OPG's 2022 *Made-in-Ontario Northern Hydroelectric Opportunities Report*, developed with input from the Ontario Waterpower Association, identified 3,000 - 4,000 MW of untapped hydroelectric potential in northern Ontario. These opportunities can support economic reconciliation, help unlock the province's critical minerals, enhance reliability and reinforce Ontario's position as an energy superpower.

New Hydroelectric Generation in Northern Ontario

The Ontario government is supporting early-stage development for potential new hydroelectric stations in Northern Ontario, co-led by Taykwa Tagamou Nation and Moose Cree First Nation with support from OPG. The work, including environmental baseline studies, geotechnical work, and engineering, will explore the potential feasibility for two new sites in the Moose River Basin: Nine Mile Rapids and Grand Rapids. Construction of these potential new sites would be advanced through community-led decision making.

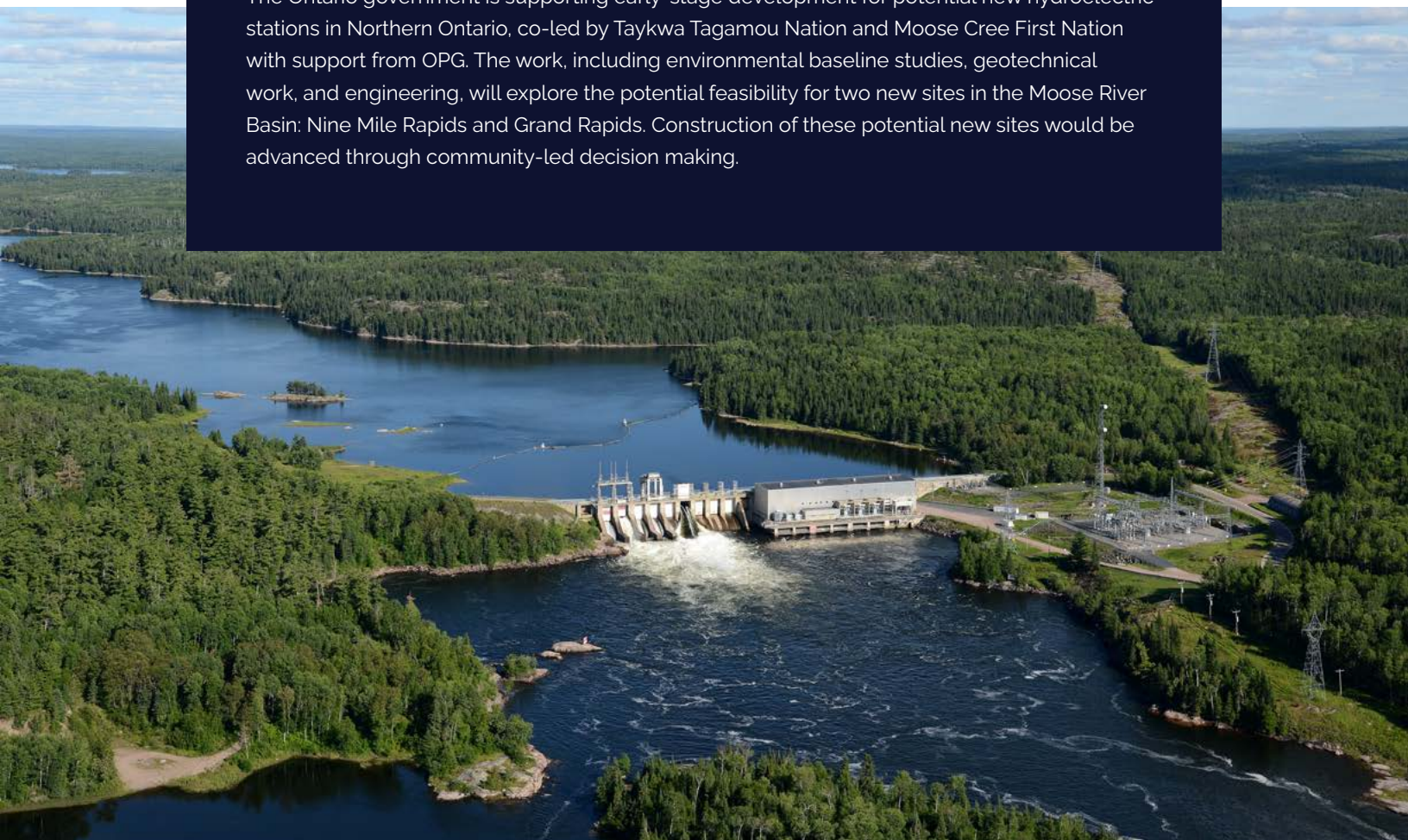
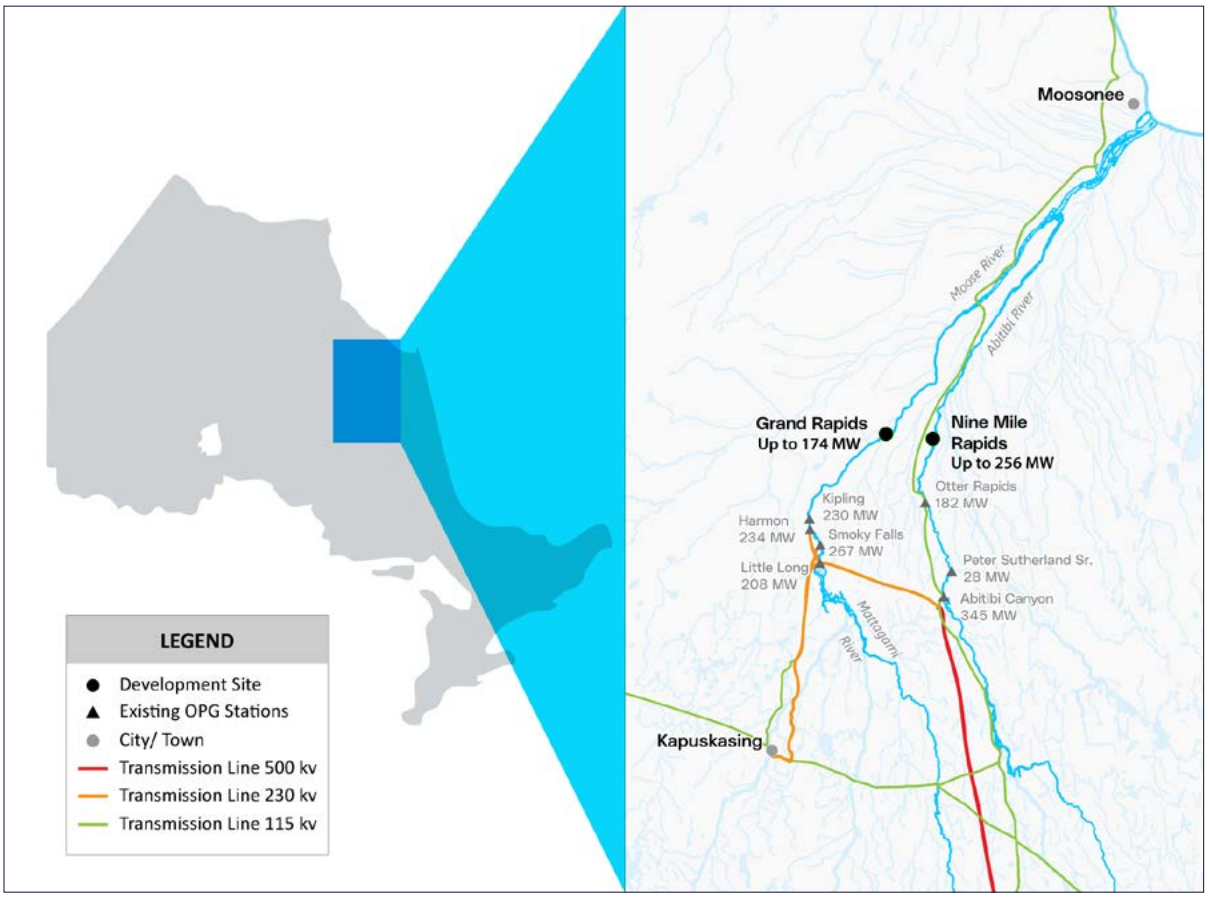


Figure 15: New Hydroelectric Facilities in Northern Ontario



The potential Grand Rapids and Nine Mile Rapids Generating Stations are located upstream from existing hydroelectric assets on the Missinaibi-Mattagami River and Abitibi River respectively.

Small Hydro Program

Around 80 small hydroelectric facilities operate across the province, providing over 200 MW of clean reliable electricity. To ensure these stations continue to operate, the IESO launched the Small Hydro Program in December 2023, following a Minister's directive.

The program offers a stable revenue stream and flexible re-contracting opportunity for facilities of up to 10 MW of capacity, while reducing costs for ratepayers. Facilities can enter the Small Hydro Program on a rolling basis, with all new contracts running through to April 30, 2043.

Northern Hydro Program
With a recontracting pathway now in place for smaller hydroelectric facilities through the Small Hydro Program, the government is turning its focus to Ontario's larger, contracted hydro assets. The government is directing the IESO to launch the Northern Hydro Program.

This initiative will provide a clear path to re-contract 26 hydroelectric facilities larger than 10 MW, most of which are in northern Ontario and represent over 1,000 MW of existing capacity critical to the reliability of Ontario's clean electricity system.

OPG Hydroelectric Refurbishment
OPG owns and operates 66 hydroelectric generating stations, many of which have been operating for more than 50 years.

To extend their operating lives and maintain system reliability, OPG is investing $4.7 billion in refurbishment and expansion projects across Northern Ontario, Niagara Region, and Eastern Ontario. These projects will secure more than 5,000 MW of existing capacity and are expected to support over 2,000 good paying jobs.

Pumped Storage

Pumped storage facilities act like large batteries – storing electricity by pumping water from a lower to a higher reservoir when demand is low and releasing it to generate power when demand is high.

OPG has been operating the province's only pumped hydroelectric storage facility since 1957. This facility, a six-unit 175-MW pump-generator, is part of the Sir Adam Beck Complex located in the Niagara Region.

To make the grid more resilient, the Ontario government is advancing pre-development work for the proposed Ontario Pumped Storage Project, developed in partnership by TC Energy (TCE) and the Saugeen Ojibway Nation (Saugeen First Nation and Chippewas of Nawash Unceded First Nation). The project, which would be the largest of its kind in Canada, would provide up to 1,000 MW of clean, affordable, and reliable electricity storage.

The Ontario Pumped Storage Project would complement other actions government is taking to meet rising demand, including pre-development work for new large-scale nuclear stations at Bruce Power's site and OPG's Wesleyville site in Port Hope. Building new large scale nuclear, including Bruce C, would provide the large amounts of clean, zero-emissions power necessary to fill the storage facility.

Competitive Procurements for New Electricity Resources

To meet Ontario's growing electricity needs while keeping costs down, the government is advancing a series of competitive procurements for new electricity generation and storage. These procurements are designed to attract a diverse mix of technologies through open, transparent processes that secure reliable and affordable power for Ontarians.

Through the Expedited Long-Term (ELT) and Long-Term 1 (LT1) procurements, the Province has already secured more than 3,300 MW of new capacity, including battery storage, natural gas, and on-farm biogas resources.

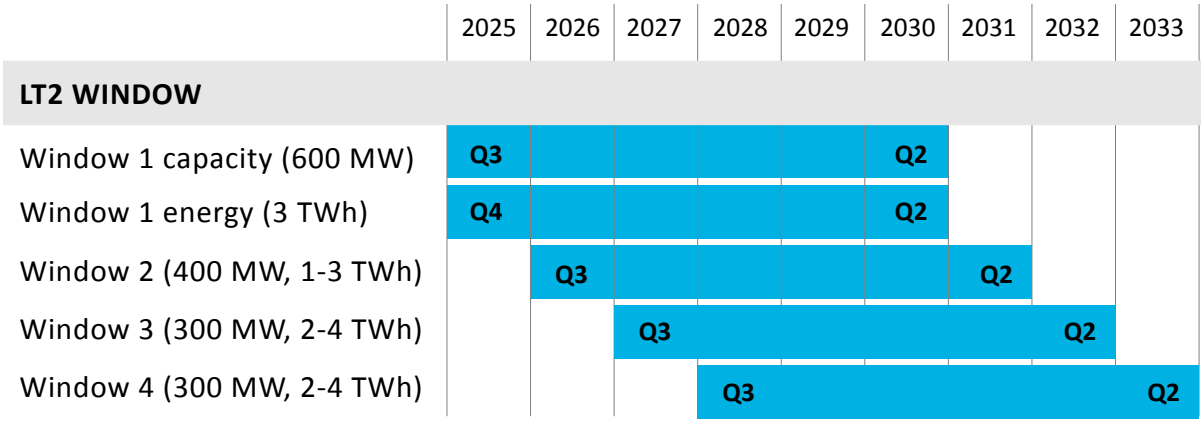
Largest Battery Storage Procurement in Canadian History

Through the ELT 1 and LT1 procurements, Ontario has secured almost 3,000 MW of battery storage capacity – the largest single battery storage procurement in Canadian history.

These new storage projects will shift electricity from times of low demand to peak hours, improving reliability and reducing the need for more expensive generation.

Looking ahead, the Long-Term 2 (LT2) procurement will launch in 2025 and represent the largest electricity procurement in Ontario's history. LT2 will be technology-neutral, open to resources including energy storage, wind, solar, biomass, biogas, natural gas and energy from waste (EfW). LT2 is seeking up to 14 TWh per year of new energy – equivalent to about 6,000 MW of capacity – as well as an additional 1,600 MW of new capacity resources. Projects will be phased in through four annual intake windows, with in-service dates expected by 2034.

Figure 16: LT2 Procurement Intake Windows



By providing clear, multi-year procurement schedules, Ontario is giving industry the certainty and time needed to develop cost-effective projects that are ready when Ontario needs them.

In addition to LT2, the Province has asked the IESO to report back on options for a separate procurement stream for strategic long-lead projects with the intention of launching the procurement in the immediate future. This would include resources such as certain new hydroelectric generation and long-duration energy storage – projects that may offer long-term system value but require more time to develop and bring into service. This stream would help ensure Ontario can continue to plan and diversify its supply mix with assets that support long-term reliability and system flexibility.

Protecting Ontario's Energy Infrastructure

To protect Ontario's energy system, the government is considering actions to limit the involvement of foreign jurisdictions –such as the People's Republic of China – in future electricity procurements. The government introduced legislative changes that would give the Province the authority to restrict participation by certain countries in procurements by government and regulated entities like the IESO, OPG, and Enbridge. Ontario is also considering measures that would limit the country of origin of equipment and investors in Ontario's energy system.

This aims to protect our energy systems from risks including malware, manipulation, tampering, surveillance, potential ratepayer harm, and other threats posed by foreign state-owned or based companies seeking to compromise essential services. These changes would apply to new procurements, not processes that are already underway or completed – and would be done in a way that balances affordability with energy security.

Willing Host Communities

Unlike previous governments that forced energy projects on communities, the province is ensuring that municipalities are active partners in the siting of new electricity resources. Project proponents participating in competitive procurements are required to obtain a supportive municipal council resolution forming local support for any new project located in a municipality.

This approach will ensure electricity projects provide meaningful local benefits which may include employment opportunities, reliable energy to support local industry, and potential community benefit agreements. Proponents are encouraged to engage early with municipalities and Indigenous communities to share project details and build local partnerships from the outset.

Protecting Ontario Farmland

The government implemented new requirements for electricity projects under the LT2 procurements to address impacts to agriculture.

These requirements will:

- Award points to projects that avoid Prime Agricultural Areas, as defined in the Provincial Planning Statement, 2024 and designated in municipal or planning board Official Plans;
- Prohibit new projects in specialty crop areas, such as the Holland Marsh and Niagara Tender Fruit and Grape Area;
- Prohibit new ground-mounted solar projects in prime agricultural areas; and
- Require municipal support and an Agricultural Impact Assessment (AIA) be completed for eligible projects proposed in prime agricultural areas, including an evaluation of alternative locations (e.g., consideration of siting options outside prime agricultural areas and on land with lower priority soils).

Projects on rural, commercial, or industrial lands outside these areas will not require an AIA.

These measures help balance the province's need for new electricity generation with the need to protect Ontario's most productive farmland.

To protect prime agricultural areas, projects sited in the north and outside prime agricultural areas will be encouraged. This includes on Crown land, which comprises 87 per cent of Ontario's land mass.

Other Procurement Mechanisms
In addition to long-term competitive procurements, Ontario is using other tools to secure electricity resources cost-effectively.

Through Medium-Term (MT) procurements, the IESO is re-securing contracts for existing electricity assets that are reaching the end of their contracts. These procurements help avoid service gaps while new resources are developed.

Ontario also continues to run its annual Capacity Auction, which allows resources such as demand response, imports, and existing generation to compete to provide short-term capacity at the lowest cost. This flexible and cost-effective mechanism supports grid reliability by ensuring there is enough capacity available to meet seasonal peaks.

Bioenergy

Ontario's biomass electricity facilities play a unique role in the province's energy mix by supporting grid reliability, reducing waste, and providing critical economic benefits to northern and rural communities.

These facilities primarily use wood waste from forest operations and mills – material that would otherwise be landfilled – to generate dispatchable, renewable electricity. This not only supports local energy needs but also helps maintain sustainable forest operations and strengthens the resilience of Ontario's forestry sector. As part of Ontario's broader approach to support this key sector in response to tariffs and trade restrictions, the Province has finalized five-year contracts with all five of Ontario's biomass generating stations:

- Hornepayne Power – Hornepayne
- Atikokan Generating Station – Atikokan
- Thunder Bay Condensing Turbine Facility – Thunder Bay
- Chapleau Generating Station – Chapleau
- Calstock Generating Station – Hearst

These agreements provide certainty for forest-based generators and support local jobs, energy security, and sustainable forest management practices.

Keeping Energy Costs Down

As Ontario builds new electricity generation and modernizes the grid to meet growing demand, the government is also taking deliberate steps to keep energy costs down for families and businesses.

This includes leveraging Ontario's clean electricity advantage, attracting private capital to the system, and reinvesting revenues to reduce ratepayer costs. From new funding tools like the Future Clean Electricity Fund (FCEF), to innovative programs like clean energy credits, and market reforms, Ontario is pursuing a comprehensive approach to affordability as the system grows.

Clean Energy Credits

Ontario is leveraging its world-class clean electricity grid through a voluntary Clean Energy Credit (CEC) registry, launched in March 2023. The registry allows businesses to purchase and retire CECs to demonstrate their use of non-emitting electricity from Ontario based generation.

Each credit represents one MWh of electricity that has been generated by clean sources such as nuclear, hydroelectricity, biomass, wind and solar.

Proceeds from the sale of OPG and IESO's CECs will be directed to the FCEF to help reduce system costs for electricity ratepayers and support the construction of new energy generation.

Clean Energy Powering Magna's Ontario Facilities

OPG will supply CECs sourced from the Sir Adam Beck Generating Complex – in Niagara Falls – to leading global automotive supplier Magna International.

The majority of the proceeds from the sale of CECs will be directed to the government's FCEF. The FCEF supports investments in new clean electricity projects to meet the increasing demand for electricity driven by Ontario's economic growth.

Magna is purchasing CECs from OPG to help meet its sustainability goals in Canada by 2028 – two years ahead of schedule.

Future Clean Electricity Fund

The FCEF is a new tool to help keep costs down for Ontario ratepayers while supporting investment in clean electricity projects, such as nuclear or hydroelectricity. The FCEF will use proceeds from two main sources: the Emission Performance Standards paid by electricity generators and net proceeds from the transfer of clean energy credits owned by the IESO and OPG.

The FCEF is designed to reduce the cost of building and operating new clean electricity infrastructure, by ensuring that for every $1 of electricity costs due to the federal requirement for a price on carbon, $1 would be avoided in new electricity infrastructure costs.

The government will work with the IESO to apply FCEF proceeds to reduce the Global Adjustment (GA) costs of non-emitting resources in the current and future IESO procurements. In parallel, the government will implement mechanisms to apply FCEF proceeds to rate-regulated transmission and generation projects, such as nuclear and hydroelectric assets.

Approximately $160 million is expected to be available through the FCEF in its first two years to help offset costs related to new infrastructure build out.

Market Renewal Program

On May 1, 2025, the IESO launched Ontario's renewed electricity market following extensive consultation and system preparation. The Market Renewal Program (MRP) is designed to improve the efficiency of Ontario's electricity markets by introducing clearer price signals, aligning costs with system needs, and enabling more competitive participation.

By modernizing how electricity is scheduled and priced, the MRP will help integrate a broader mix of technologies and support future system flexibility. These reforms are expected to unlock an estimated $700 million in cost savings for ratepayers over the next decade by reducing inefficiencies and encouraging investment in the right resources at the right locations.

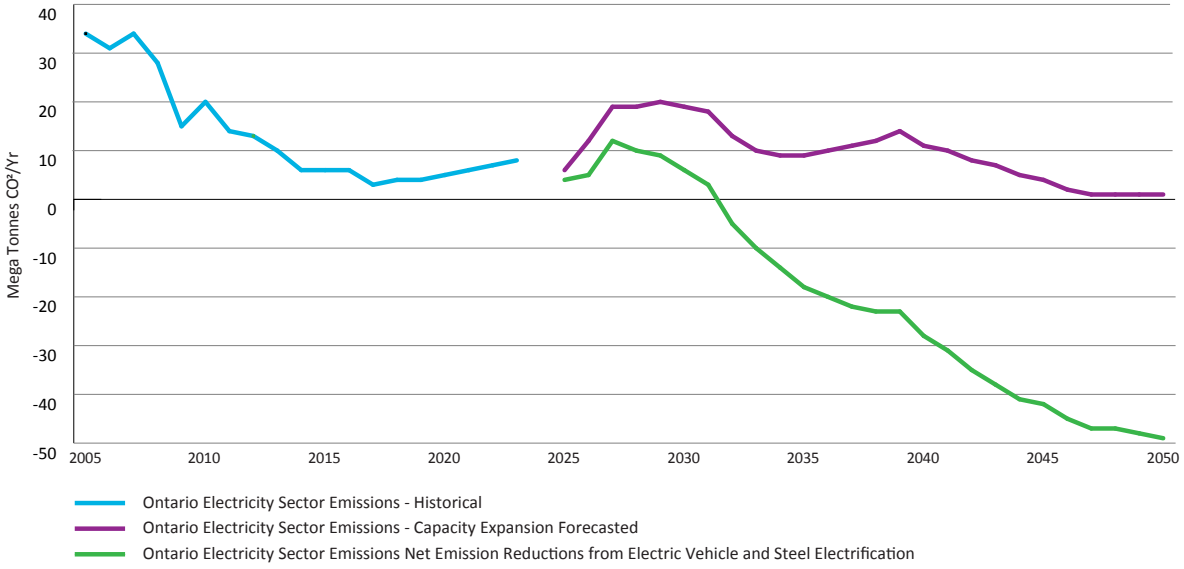
The Province will continue to assess electricity market performance and explore further tools to help keep electricity reliable and affordable for Ontario consumers.

Ontario's Clean Grid Reduces Province-Wide Emissions

Ontario already has one of the cleanest electricity grids in the world, with about 84 per cent of generation coming from non-emitting sources. The plan outlined in this chapter builds on that foundation by expanding nuclear, hydroelectric, renewables, storage all while maintaining a role for resources like natural gas that maintain reliability and keep costs down.

As demand rises and nuclear units undergo planned refurbishments through the 2020s and 2030s, Ontario will temporarily rely more on natural gas to maintain reliability. This will result in a short-term increase in electricity system emissions. However, as new non-emitting supply, particularly new and refurbished nuclear generation comes online, emissions from electricity generation are expected to decline significantly.

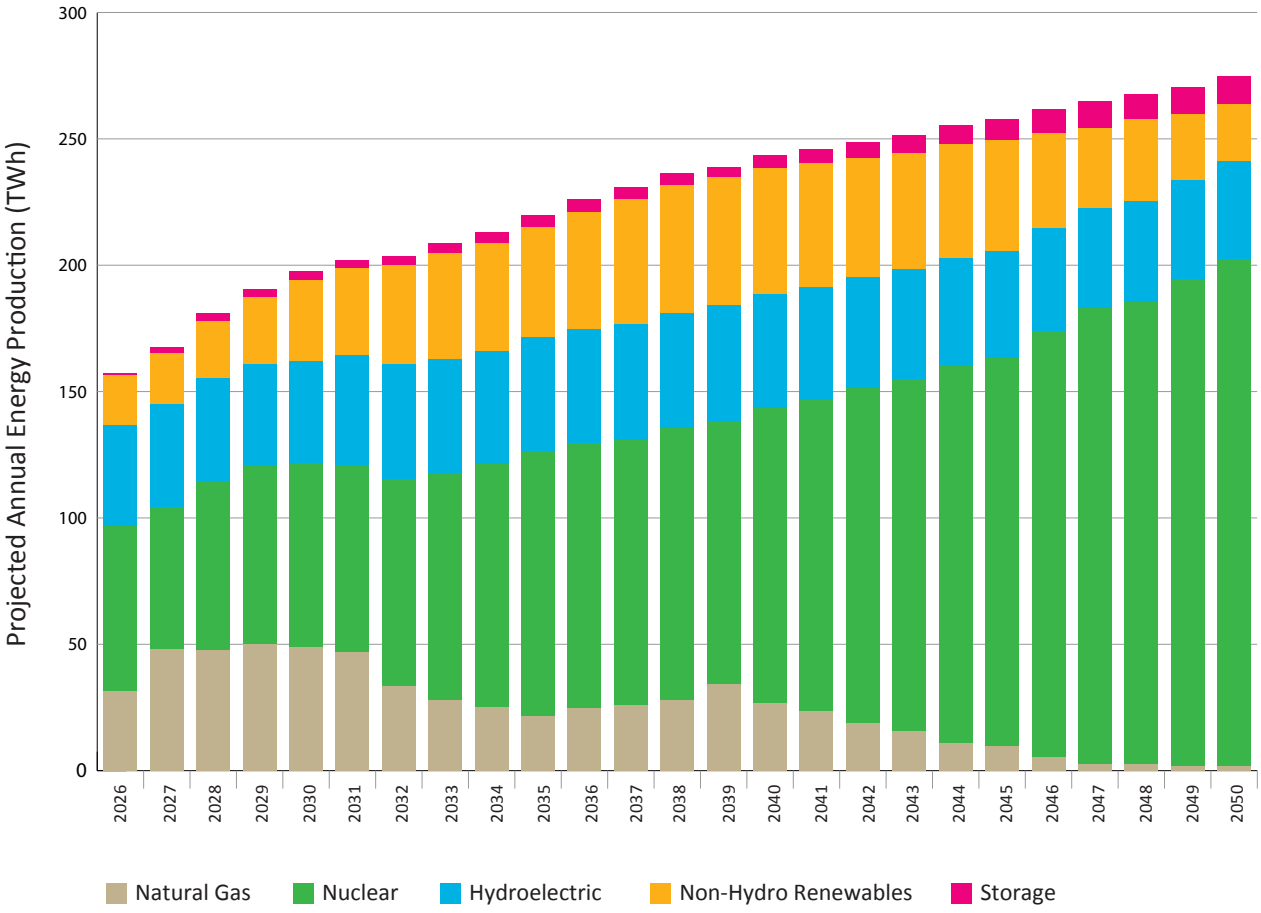
Figure 17: Ontario's Electricity Sector Emissions



As more homes, vehicles and industry take advantage of this clean electricity supply, instead of other fuels, emissions from the broader economy are expected to fall, even if electricity system emissions temporarily rise.

This will be powered by an evolving electricity supply mix, that could see installed capacity rise from 37,200 MW today, to more than 65,000 MW by 2050, including significant increases in nuclear, hydro and other non-emitting sources such as renewables.

Figure 18: Projected Future Electricity Supply Mix

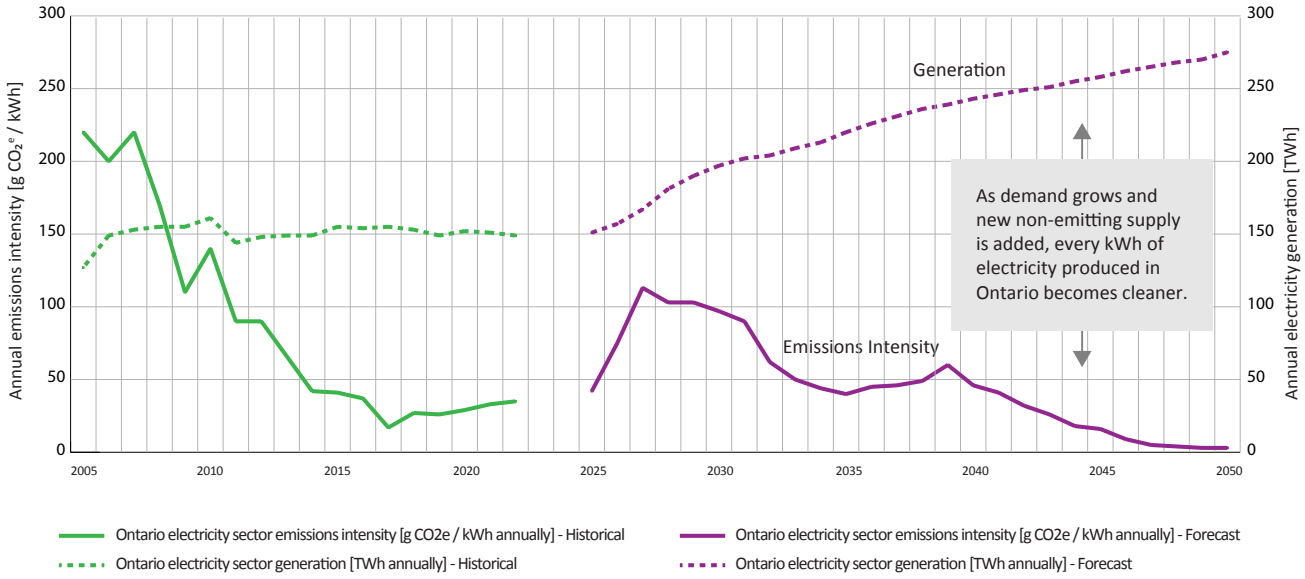


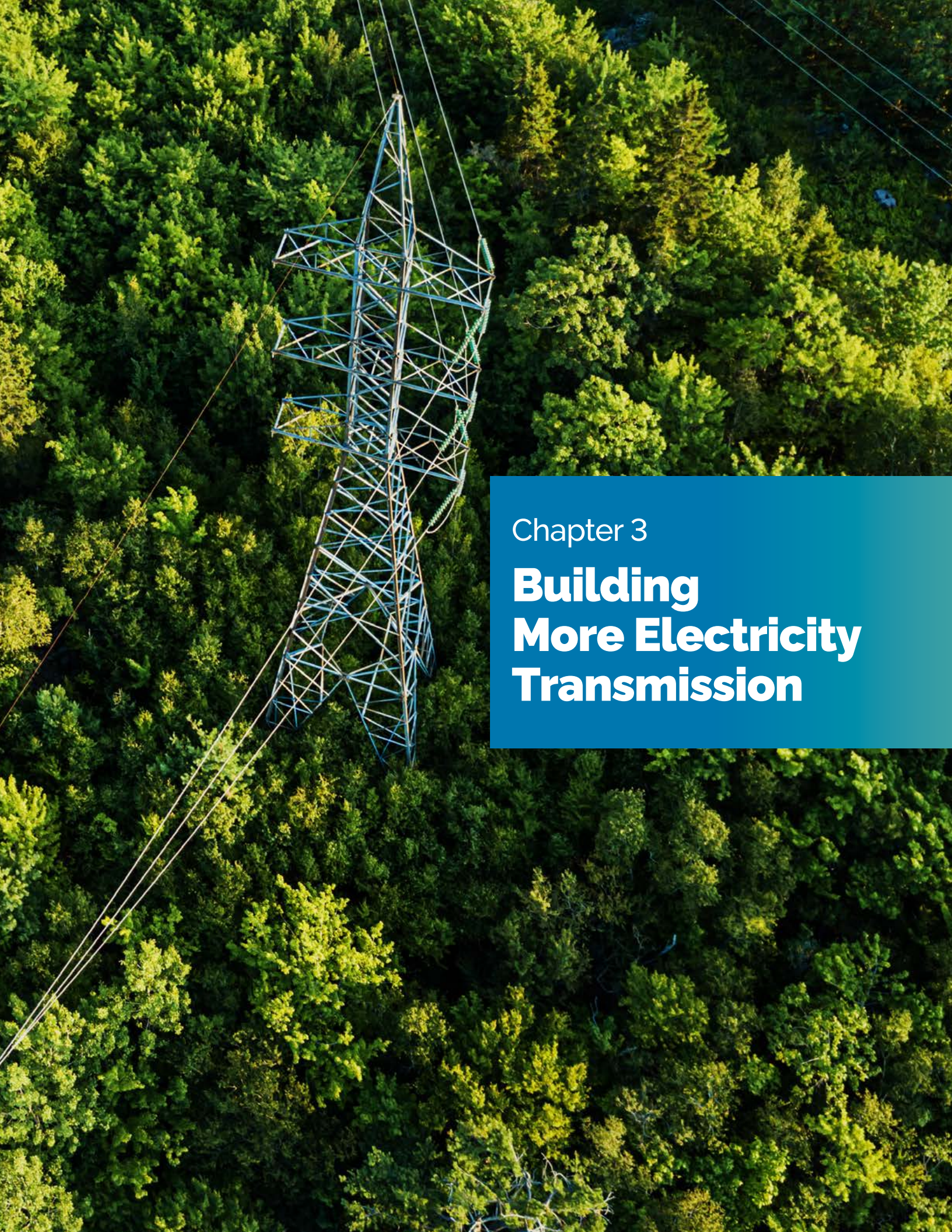
This chart shows an IESO projection from the 2025 APO of how the sources of electricity produced in Ontario could evolve over the planning period to meet demand in a cost-effective manner.

In a forward-looking scenario modelled by the IESO (see Figure 18), nuclear and hydro are expected to continue providing the majority of Ontario's electricity due to their consistent, reliable and cost-effective output. Wind and solar will play an important role, particularly in the medium term, supported by energy storage and other technologies. Natural gas generation is required throughout the planning period as a strategic resource to help meet peak demand and ensure system reliability, but its use is expected to reduce over time as alternatives become available. While the exact mix of resources will depend on future competitive procurements, actual electricity demand levels, and the evolution of the market, the move towards non-emitting resources to meet our electricity needs is clear.

By 2050, the IESO projects that electricity sector emissions will fall to nearly zero – just 0.7 megatonnes – even as overall electricity consumption grows. This means less emissions for every unit of energy produced. This outcome reinforces how Ontario's can maintain and build its clean energy advantage while staying focused on affordability, reliability, and preparing for a range of future energy pathways.

Figure 19: Electricity Sector Carbon Emissions Intensity





Chapter 3

Building More Electricity Transmission

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Building More Electricity Transmission

To meet increasing demand Ontario must do more than just generating power – we also need to get that power where it needs to go. The province is home to over 30,000km of high voltage electricity transmission lines that act as highways for the electricity system, carrying power from generating stations to the communities, industries and homes that rely on it.

Transmission infrastructure ensures that electricity flows efficiently and reliably across Ontario – avoiding bottlenecks, keeping costs down, and making room for new generation to come online. As demand grows across the province, driven by population growth, electrification and new industrial projects, Ontario must act now to support the building and upgrading of the lines that will power our future and unleash our economy.

That means more than just construction. It will require early planning to identify and protect future transmission corridors in fast-growing regions, and to support critical projects can move forward without delay while continuing to consult with Indigenous communities. This chapter outlines Ontario's comprehensive approach to supporting the expansion and modernization of the transmission system – linking new supply to new demand and unlocking economic opportunity in every corner of the province.

Building New Transmission

Building a Stronger North-South Electricity Backbone

Ontario's electricity system must be able to move power efficiently between regions – especially from areas where electricity is generated, like the north, to fast-growing demand centres in the south. Today, this north-south flow is constrained by transmission bottlenecks that limit system flexibility and risk driving up costs.

To address these challenges, the government is advancing the Barrie to Sudbury Transmission Line, a new single circuit 500 kV line between Essa Transformer Station (Barrie) and Hanmer Transformer Station (Sudbury), including any associated station facilities, targeted to be in-service in 2032.

This new line, if approved, will significantly enhance transfer capability between northern and southern Ontario – unlocking new generation opportunities, supporting reliability, and preparing the system for future growth. Because of the critical system value to this strengthened corridor, the IESO has also recommended initiating early development work on a second 500 kV line to ensure Ontario can respond to future needs.

The IESO has determined that these projects are not suitable for a competitive procurement process given their urgent need. As a result, the government intends to consult on a proposal to direct the OEB to designate Hydro One to develop the first line, and to declare this line a priority to ensure it is built on time, while also designating Hydro One as the transmitter on the second line to ensure they can undertake early development work.

Indigenous leadership, partnership, and early engagement and consultation, as appropriate, is essential for the successful development of new transmission infrastructure being proposed in Ontario, including the Barrie to Sudbury Transmission Line. Designating Hydro One will bring their Equity Partnership model to the project, which is expected to create economic opportunities for Indigenous communities, along with employment and contracting opportunities (see Chapter Eight).

To further strengthen this corridor, the IESO has recommended The Orangeville to Barrie Reconductoring Project, which involves Hydro One reconductoring their existing 230 kV transmission lines between Orangeville Transformer Station (Orangeville) and Essa Transformer Station (Barrie), expected to be in-service in 2027. Reconductoring involves replacing current power lines with advanced conductors that can carry more electricity – allowing the province to make better use of existing infrastructure.

The government intends to consult on a proposal to declare this project a priority. Since this infrastructure is owned by Hydro One, this project is not suitable for competitive procurement and the government does not need to designate them to kickstart the work.

The government continues to work closely with the IESO to monitor system needs along this critical corridor and determine when further actions may be necessary to advance the second Sudbury to Barrie line.

Unlocking Future Electricity Generation in the North

The Barrie to Sudbury Transmission Line and the Barrie to Orangeville Reconductoring Project are foundational upgrades that will strengthen north-south transmission capacity. These investments are critical enablers for future electricity generation projects - such as the proposed Nine Mile Rapids and Grand Rapid stations, for which co-planning is currently being led by Taykwa Tagamou Nation and Moose Cree First Nation (see Chapter 2).

By acting now, Ontario is ensuring the grid is ready to connect new supply where and when it's needed.

Powering Growth in the GTA

The Greater Toronto Area (GTA) is a key driver of Ontario's economy. Ensuring reliable, affordable electricity in this region is essential for the province's long-term prosperity. While past growth has been supported by existing transmission lines, energy efficiency programs and strategically located generation assets, including the Portlands Energy Centre (a natural gas generation station), new transmission will be needed to meet rising demand.

To prepare for future growth, the IESO has identified two high-priority projects that must move forward on an urgent basis:

- **Manby to Riverside Junction Reconductoring:** This project involves Hydro One upgrading existing 115 kV circuits from Manby Transformer Station to Riverside Junction in the Etobicoke area, expected to be in-service in 2026, to support growing electricity needs in the Western GTA.
- **Bowmanville to GTA Transmission Line:** A new double-circuit 500 kV line from Bowmanville Switching Station (Bowmanville) to an existing 500 kV station in the GTA, expected to be in-service in the early 2030s, is required to connect OPG's SMR units 2, 3 and 4 at Darlington to the grid and send additional electricity to the GTA and downtown core. The IESO has indicated that the project is not suitable for a competitive procurement process. As such, the government intends to launch consultations on a proposal to direct the OEB to designate Hydro One to build this line, and to prioritize this project. the IESO will identify the terminal point in the GTA sometime in mid-late 2025.

To support growth and electrification in the City of Toronto, the IESO is also developing a new Integrated Regional Resource Plan (IRRP) that will include recommendations for additional transmission capacity into the downtown core. This work builds on government direction issued through Powering Ontario's Growth, which recognized that Toronto will require a third major transmission line to downtown Toronto to meet future demand, and *Ontario's Affordable Energy Future*, which highlighted the need to enhance system resiliency.

The government is directing the IESO to report back in August 2025 with a recommendation for a preferred transmission option. Once IESO makes a recommendation the government intends to act quickly to kickstart development, so it can be delivered in the early-to-mid 2030s. Options under study are focused on minimizing land use, enhancing supply diversity and system resilience. This could be accomplished using underwater cables or existing rights-of-way.

Supporting Economic Growth in Southwest Ontario

Southwest Ontario is experiencing some of the fastest industrial and population growth in the province – driven by the first EV and battery manufacturing facilities in Canada, expanded greenhouse operations, and major residential development. Supporting this growth with a reliable electricity system is critical to keeping jobs and investment in the region, while avoiding costly delays to new connections.

In 2022, the government took early action to streamline five priority transmission projects to support growth across southwest Ontario. These projects include:

- **Chatham to Lakeshore Line:** A new 230 kV transmission line from Chatham Switching Station (Chatham) to Lakeshore Transformer Station (Lakeshore) completed in January 2025 - one year ahead of schedule.
- **St. Clair Line:** A new 230 kV transmission line between Lambton Transformer Station (Lambton) and Chatham Switching Station (Chatham), expected to be in service in 2028.
- **Longwood to Lakeshore Phase 1:** A new 500 kV transmission line from Longwood Transformer Station (Strathroy-Caradoc) to Lakeshore Transformer Station (Lakeshore), expected to be in service in 2030.
- **Longwood to Lakeshore Phase 2:** A possible second 500 kV transmission line from Longwood Transformer Station (Strathroy-Caradoc) to Lakeshore Transformer Station (Lakeshore), identified for early development.
- **Windsor to Lakeshore Line:** A new 230 kV transmission line from Lauzon Transformer Station (Windsor) to Lakeshore Transformer Station (Lakeshore), expected to be in-service by 2032.

The IESO recently completed regional planning in the Windsor area and has identified that the Windsor to Lakeshore Line must move from early development into delivery – as both load growth and new generation opportunities have emerged in the region. As a result, the government intends to consult on a proposal to prioritize this project for construction.

At the same time, the Province continues to support the early development work being undertaken on Longwood to Lakeshore Phase 2, recognizing that demand in the region is expected to continue rising rapidly. The government will work with IESO to monitor load growth to determine when further action is necessary to ensure this project is built in a timely manner.

Planning for Growth in Eastern Ontario

Eastern Ontario is also seeing continued demand growth driven by population increases, new residential development, and expanded electrification. To ensure this growth is not constrained by transmission capacity, the government has taken early action to support the expansion of the region's electricity infrastructure.

In 2024, the government streamlined the development of the Durham-Kawartha Power Line, a new transmission line between Dobbin Transformer Station (Peterborough) and Clarington Transformer Station (Pickering/Oshawa), expected to be in-service in 2029. This line will help meet increasing electricity needs in the Peterborough to Quinte West area and address upstream transmission constraints that could otherwise limit future load growth in the Ottawa area.

The IESO is also currently conducting a study of bulk transmission system for eastern Ontario to assess needs in the in the Ottawa, Kingston, Belleville and Peterborough regions. Early indications suggest that a combination of electrification and economic development is driving significant near-term demand. The government will monitor this work closely to identify whether any further action is needed to support rapid but responsible development of transmission in this area.

Unlocking Northern Opportunities

Northern Ontario holds immense potential for new clean electricity generation, economic development, job-creation, Indigenous partnerships and equity ownership to advance action on reconciliation. That potential can only be realized if transmission infrastructure is in place to move electricity where it is needed.

Since 2023, guided by the recommendation from the IESO and consultation with Indigenous communities, the government has taken significant steps to support the expansion of transmission infrastructure across northern Ontario. These projects will increase transfer capacity across the North, open the door to new generation, and support the region's growing industrial base, including the electrification of steel making at Algoma Steel in Sault Ste. Marie.

Key projects already underway include:

- **Wawa to Porcupine Transmission Line:** A new 230 kV line that is being built to 500 kV standards, between Wawa Transformer Station (south of Wawa) and Porcupine Transformer Station (Timmins), expected to be in-service by 2030.
- **North Shore Link Project:** A new 230 kV line between Mississagi Transformer Station (Sault Ste. Marie) and Third Line Transformer Station (west of Sudbury), expected to be in-service by 2029.
- **Northeast Power Line:** A new 500 kV transmission line between Mississagi Transformer Station (west of Sudbury) and Hanmer Transformer Station (greater Sudbury area), expected to be in-service by 2029.

Together, these projects will add up to 900 MW of new electricity transfer capacity – a major step forward in unlocking new generation, supporting industrial growth, and increasing regional reliability.

These investments represent just one part of Ontario's broader strategy to expand transmission across the North. The sections that follow outline how the government is advancing additional priority projects in key regions like Greenstone and Red Lake, each with its own unique economic and community benefits

The Greenstone Area

Access to reliable electricity in the Greenstone region is essential to support local communities, including First Nations, and enable greater economic self-determination across northern Ontario. It will also lay the groundwork for expanded mining activity, new energy development and future transmission connections further north.

In January 2025, Ontario signed the Shared Prosperity Agreement with Aroland First Nation. As part of that agreement, the Province is advancing permitting and development of the Greenstone Transmission Line – a new 230 kV transmission line between Longlac Transformer Station (Geraldton) to Nipigon Generation Station and connecting into the East-West Tie near Nipigon Bay, and associated station facilities, expected to be in-service in 2032.

Once built, the Greenstone Transmission Line would:

- Provide immediate reliability benefits to the regions;
- Support existing mines as they electrify operations;
- Enable new mineral development projects; and
- Serve as a foundational link for further transmission expansion, including potential grid connections to remote, diesel-reliant First Nations and new hydroelectric stations.

Enabling Future Connections to Remote Areas

The Greenstone Transmission Line is a critical first step toward enabling future transmission expansion into Ontario's Far North, including potential grid connection to diesel-dependent remote First Nations and the Ring of Fire region. The IESO is currently studying these long-term opportunities through its Northern Ontario Connection Study (NOCS). Advancing the Greenstone project now ensures the infrastructure foundation is in place to support future economic development, reduce diesel use reliance, and unlock Ontario's critical mineral wealth – in partnership with First Nation communities.

The government intends to launch consultation on a proposal to prioritize this project and direct the OEB to designate Hydro One, in partnership with the First Nations collective, to develop this line in partnership.

Advancing Transmission in the Red Lake Area

The Red Lake area in northwestern Ontario is a strategically important region for Ontario's critical minerals strategy, with several mining projects on the verge of development. These operations often bring large electricity demands on short timelines, requiring a transmission system that is flexible, reliable, and ready to scale.

To support this growth, Ontario has already reinforced the region's transmission system through projects like the Waasigan and Wataynikaneyap transmission lines.

While current infrastructure is sufficient for today's needs, the IESO has flagged the potential for significantly higher electricity demand if mining activity accelerates. To prepare, the IESO is developing an addendum to the 2023 Northwest IRRP, focused on emerging growth in the Red Lake area. This study, expected by late summer 2025, will identify the best transmission solution to support new development and ensure reliable electricity supply in the region.

Preserving Strategic Transmission Corridors

As Ontario grows, so does demand for land, especially in urban and rapidly developing regions. To avoid future delays and preserve options for transmission expansion in these regions, the government is taking early action to identify and protect land that may be needed for future transmission infrastructure. Preserving these strategic corridors now ensures Ontario can build the lines it needs, when it needs them, to support electrification, housing development, and economic growth.

In partnership with the IESO, the Province is advancing a series of transmission corridor studies, which will include Indigenous consultation, focused on high-growth areas where suitable land is limited, and the current electricity infrastructure is approaching its full capacity. This approach will maximize the use of existing corridors and co-locate transmission with other linear infrastructure, where possible, thereby ensuring that we can meet transmission needs while minimizing impacts to land:

- **Parkway Belt West Corridor Study:** Government will initiate a corridor study along existing GTA and surrounding area corridors, including the current Parkway Belt West Plan lands. While the specific transmission solutions will be determined throughout the course of the study, this corridor would likely host new high voltage (230 kV and/or 500 kV) transmission lines and new high voltage transformer stations to ensure electricity can be moved into and throughout the GTA, including new supply from nuclear generation. The corridor may also host lower voltage infrastructure to connect new residential, manufacturing, and commercial loads.
- **Barrie to Markham Corridor Study:** Government will initiate a corridor study between Barrie and Markham to identify and preserve land for a future 230 kV transmission line. This would ensure land is available to build the southern-most phase of the north-south transmission connection and ensure that power can be delivered from the North into some of the highest growth areas of the GTA.
- **Northwest GTA Corridor Study (Update):** Government will revise the narrowed area of interest, adjacent to the future Highway 413. This would enable future lines, including the potential to accommodate 230 kV and 500kV infrastructure to support load growth in York, Peel and Halton Regions, while enabling supply from new generation resources to get to where it is needed in high growth areas of the GTA.

These corridor studies are a key part of Ontario's early system planning approach. As electricity demand evolves and system needs are refined, preserved corridors will evolve and ensure projects can move forward quickly and cost-effectively – delivering reliable power to growing communities and industries.

In addition to the above, Ontario will continue to work across government to develop administrative, policy and legislative tools for protecting proposed electricity and transportation corridors across the GTA in a proactive manner.

Figure 20: Ontario Electricity Transmission Lines

1. Greenstone Transmission Line: address reliability and supply needs in the Nipigon region, and enable possible future grid expansion further north to reduce diesel dependency and enable Ring of Fire mineral development.

2. Windsor to Lakeshore Line: supporting economic development in Windsor-Essex region.

3. Barrie to Orangeville Reconductoring Project: strengthening the north-south flow of electricity into southwestern Ontario.

4. Barrie to Sudbury Transmission Line: strengthen north-south flow of electricity, to unlock clean electricity generation potential in the north and enhance system reliability.

5. Bowmanville to GTA Transmission Line: enable connection of three new SMRs.

6. Manby to Riverside Junction Reconductoring: enable growth in downtown Toronto.

7. Parkway Belt West Corridor Study: preserve land for future transmission to strengthen east west flow of electricity into and through the GTA.

8. Northwest GTA Corridor Study (Update): revising the area being preserved for future transmission expansion to ensure growth needs can be met in the western GTA.

9. Barrie to Markham Corridor Study: preserve land for expansion of north-south transmission supply further into the GTA.

Advanced Planning and Procurement for Transmission Stations

As outlined throughout this chapter, Ontario has certainty that significant new transmission infrastructure will be required across the province in the years ahead. That certainty gives the government the confidence to act now – procuring long-lead equipment and preparing key sites in advance to avoid delays and keep costs down for ratepayers.

As part of this effort, the government is enabling Hydro One to undertake advanced procurement of up to five 750 MVA 500/230 kV autotransformers. These large-scale transformers are critical to expanding bulk capacity and will be deployed to strategic station sites in the GTA, southwest, and northern Ontario to support economic development and connect new electricity supply.

In parallel, the IESO is working with existing transmitters to assess space and expansion potential at existing transmission station sites. This planning will help identify where future infrastructure can be located, reduce development timelines, and ensure new resources can be connected efficiently as system needs evolve.

By supporting early planning and procuring, Ontario is taking steps needed so the transmission system is ready to meet future demand – before it becomes a barrier to growth.

Streamlining Transmission Development

Ontario's ability to attract investment and deliver affordable, secure, reliable and clean electricity depends on the province's ability to build transmission infrastructure. To streamline development, the government has taken action, including:

- **Exempting Private-Funded Projects from Leave to Construct (2022)**: To reduce regulatory burden on customer-driven projects, the government exempted transmission lines wholly funded by commercial, industrial, or generator customers from requiring Leave to Construct approval from the OEB. These projects are still subject to rigorous technical review through the IESO's connection assessment process.
- **Advancing the Class Environmental Assessment Process (2024):** The government moved all transmission projects into Ontario's Class Environmental Assessment (Class EA) process. This change is expected to reduce development timelines by up to one to two years for large projects, while maintaining Ontario's world-leading environmental oversight, opportunities for Indigenous consultation, and public engagement requirements.

In all cases, opportunities for Indigenous engagement and consultation remain in place through existing environmental assessment and permitting requirements. The government will continue to explore opportunities to further streamline development and transmission connection processes while maintaining the integrity of permitting processes to ensure projects are built responsibly and with meaningful public engagement and Indigenous consultation.

Transmitter Selection Framework

With more transmission needed across Ontario, the government is committed to supporting new infrastructure that is delivered as efficiently, affordably, and transparently as possible. While the government will need to maintain the ability to designate some projects directly to existing transmitters – such as Hydro One – due to their urgency or complexity, there is also a clear opportunity to introduce healthy competition where timelines allow. Competitive procurement can help deliver transmission more cost-effectively, encourage innovation, and drive opportunities for Indigenous participation.

To support this work, the IESO is developing a competitive Transmitter Selection Framework (TSF), and as a first step will launch a Transmitter Registry by Q3 2025. This registry will be a critical first step – ensuring a pool of pre-qualified, capable transmitters is in place so that competitions can proceed efficiently as projects are identified for competitive selection. The IESO and OEB are also working to identify opportunities to reduce duplicative processes for projects that are competitively procured.

The broader competitive framework will aim to:

- Set clear eligibility criteria for which projects will be subject to procurements, such as network assets with sufficient lead time, or based on cost and voltage thresholds; and
- Embed pathways for Indigenous leadership and equity participation in future transmission projects.

As design continues, the IESO will continue to engage with Indigenous communities, stakeholders and industry partners.

Once the framework is finalized, the government intends to, subject to approvals, issue a directive to formally launch competitive procurement, supported by any necessary legislative or regulatory changes. That directive would allow the IESO to identify which transmission projects, coming out of the significant number of bulk transmission system planning activities that are currently underway, will go through competitive procurement.

Chapter 4

Ontario's Future Electricity Grid

Chapter 4

Ontario's Future Electricity Grid

While the government is building thousands of kilometers of new transmission lines to deliver clean electricity across the province, the job is not done. Power must reach our towns and cities.

Ontario's distribution system – the last step in getting electricity to Ontario homes, businesses, and EVs – also needs to grow and evolve to meet the needs of a growing and electrifying province. Building a modern grid is a key enabler of a future energy system that is affordable, secure, reliable, and clean.

Local Distribution Companies – Leading Ontario's Electricity Transformation

Ontario's 59 local distribution companies (LDCs) are the face of the electricity system for most Ontarians. They are responsible for maintaining the infrastructure that delivers power to homes and businesses, connecting new customers, and responding to outages and emergencies. As electricity demand grows, driven by new housing, industrial expansion, and the electrification of vehicles and heating. LDCs are being asked to do more than ever before.

To meet these growing demands, LDCs will need to strengthen their infrastructure, adopt new technologies, and deliver services more efficiently and affordably. This includes making significant capital investments in substations, transformers, and digital grid management tools.

Local Utilities Working Together to Keep Costs Down

Across Ontario, LDCs are already working together to manage costs and improve services for their customers. By pooling resources, sharing services, and collaborating on common challenges, these utilities are finding practical ways to deliver better value.

- GridSmartCity, a collaborative of 18 LDCs serving nearly one million customers, has achieved savings through joint purchasing of equipment, shared IT services, and operational support.
- Cornerstone Hydro Electric Concepts (CHEC), a group of 17 LDCs serving over 200,000 customers, has delivered savings through shared services in human resources, regulatory compliance, and operations.
- Municipal Electric Association Reciprocal Insurance Exchange (MEARIE), provides the energy sector with insurance solutions.

While these efforts represent a modest share of overall system costs, they show what's possible when utilities work together. The government continues to encourage even greater collaboration and shared services across the sector to meet new challenges – like cybersecurity threats and the need for faster grid expansion – while keeping energy safe, reliable, and affordable for Ontarians.

To help position LDCs for long-term success, the government is tackling the core challenges they face, including identifying the type of investments that should be made to modernize the grid, integrate new technologies like distributed energy resources, and build a more resilient and responsive electricity system.

Powering EV Adoption – A New Demand on Local Grids

By 2030, projections indicate there will be more than one million EVs on the province's roads. As more drivers charge their vehicles at home, businesses electrify their fleets, and new public charging stations are deployed distribution systems must be upgraded to handle higher and more variable electricity loads.

To support this customer driven uptake of EVs, the Ontario is:

- Investing over $180 million through the EV ChargeON program to fund more than 1,300 public charging ports across the province, including in small and Indigenous communities;
- Installing EV charging stations at all ONroute stations along the province's busiest highways, the 400 and 401.
- Standardizing and streamlining EV charger connection procedures across all LDCs to reduce delays and ensure a consistent process for charging providers;
- Confirming through legislation that EV charging station owners and operators are not subject to regulation by the OEB, providing clarity needed for the private sector to invest in charging infrastructure.

These actions help integrate electricity demand from transportation, building a more affordable and connected charging network for everyone in Ontario, while supporting customer choice and economic growth.

Defining Electricity Distribution Grid Modernization

Ontario's electricity distribution systems must evolve to keep pace with rapid growth, changing customer expectations, and increasing demand. Modernizing the distribution grid is essential to deliver power more efficiently and reliably, enable new forms of customer participation, and ensure Ontario is prepared to meet future system needs.

Energy for Generations lays out a clear definition of grid modernization to better enable LDCs to plan investments to modernize its distribution grid to deliver services to better meet the evolving needs of Ontarians.

Grid Modernization Definition

The paced, prudent, and cost-effective use of technologies and solutions that improve the efficiency, resilience, reliability, and capacity of electricity distribution systems. The purposes of said investments are twofold: to lower long-term costs for ratepayers and to better manage the availability of electricity to meet growing demand.

The outcome should be a modern grid that:

- Responds more quickly to outages and disruptions, minimizing service interruptions;
- Improves operational efficiency, helping to defer or avoid costly infrastructure upgrades;
- Increases capacity and flexibility, enabling the grid to meet higher demand without overbuilding;
- Supports two-way power flows and real-time system monitoring, allowing utilities to better manage distributed energy resources (DER);
- Strengthens cybersecurity and resilience against physical and digital threats; and
- Empowers customers to make informed energy choices and participate in programs that benefit the broader system.

Grid modernization is not limited to new hardware. It should also include the better use of existing technologies, whether by applying them in new ways, scaling up their use, or integrating them more effectively into utility operations. It also includes approaches that do not require new infrastructure

investments, such as energy efficiency, demand management, and non-wires solutions that reduce the need for traditional capital projects.

This clear definition of grid modernization provides a foundation for aligning planning, investment, and regulation across the sector. It enables LDCs to better apply key tools – such as the OEB's Benefit-Cost Analysis (BCA), NWS Guidelines, Framework and Vulnerability Assessment and System Hardening (VASH) initiative, to guide cost-effective and resilient system upgrades.

The government, OEB, and IESO will continue to drive progress through coordinated and ongoing initiatives.

Strengthen Reliability and Resilience

As the Province delivers a modern grid, it must respond more quickly to storms and major events and strengthen the resilience of local electricity infrastructure.

In 2024, the government released a Vulnerability Assessment to help LDCs understand region-specific risks and adaptation strategies. The OEB is also developing tools and guidance through its VASH initiative to ensure resilience planning is embedded in every utility's Distribution System Plan. LDCs will be expected to conduct regular assessments of weather-related risks, plan targeted investments in system hardening, and evaluate the cost-benefit of resilience upgrades.

When severe storms and other major weather events do occur, Ontario is ensuring customers are better informed. The OEB amended the Distribution System Code (DSC), effective May 5, 2025, to establish clear minimum communication standards for electricity distributors leading up to such events. Under the new rules, distributors must::

- Provide an estimated time of restoration (ETR) to customers as soon as possible – and no later than four hours after damage assessment is complete.
- Update the ETR any time there is a change, including delays beyond what was previously communicated.
- Proactively alert customers of impending severe weather events that could cause widespread outages.
- Maintain at least one reliable communication channel, such as a website, social media, email, text message, phone line, or radio broadcast, to be available throughout the duration of an event.

These updates reflect what Ontarians have said matters most: getting accurate, timely updates that help them plan, stay safe, and reduce disruption when the power goes out.

Cybersecurity

As Ontario's electricity system becomes more digital and interconnected, cyber threats also pose a growing risk to grid reliability and customer data.

The OEB is working to build a more modern grid by strengthening the cyber security posture of the energy sector, requiring participation in real-time cyber reporting platforms and setting clear expectations for licensed distributors and transmitters. Utilities are expected to embed cyber preparedness into business planning, while the Province supports collaboration across energy entities to share threat intelligence and align best practices.

Strengthening Cyber Defences Through the Lighthouse Program

Ontario's Lighthouse Program, launched by the IESO in 2019, helps protect the province's electricity system by providing near real-time insights into cyber threats.

This program is the first of its kind in North America. Lighthouse provides participating entities with energy-sector specific cyber security materials, including threat reports and best practices, the opportunity to report cyber incidents and, through partnership with the Canadian Centre for Cyber Security, coordinated analysis of cyber threats.

In October 2024, the OEB made participation mandatory for all licensed distributors and transmitters, strengthening cyber readiness across Ontario's entire electricity grid - from local distribution to bulk system operations.

Through Lighthouse, Ontario is helping utilities stay ahead of cyber risks – keeping the electricity system secure and reliable.

Enabling Growth Through Faster, Streamlined Connections

A modern electricity grid must not only be reliable and efficient – it must also be responsive to growth. As Ontario continues to build homes, expand industrial capacity, and attract investment, customers need timely and affordable connections to the electricity system. The existing connection frameworks have not kept pace with the changes in the sector. Cost structures, limited planning coordination, and slow approval processes have created barriers for housing developments and job-creating projects.

That is why Ontario is taking action to modernize how customers connect to the distribution and transmission grid. Enabled by the *Affordable Energy Act, 2024*, the government is developing new regulations to reduce the upfront capital costs associated with connecting to distribution and transmission infrastructure, including for residential developments and industrial customers. These changes will help unlock new developments by reducing investment risk for 'first mover' customers, while ensuring fairness is maintained for ratepayers. Draft regulations for transmission-connected customers will be posted for public comment in Summer 2025 and could be implemented later in 2025.

The province also continues to evaluate possible options for distribution-connected customers that will build off of the changes OEB has made. The OEB has implemented critical updates to the Distribution System Code to better align the connection process with long-term growth and planning objectives. These include:

- Extending the customer revenue horizon for residential developments from 25 to 40 years, easing pressure on home builders and future home buyers.
- Extending the customer connection horizon for housing development projects can be extended from five up to 15 years to support phased growth in new communities.
- Introducing a Capacity Allocation Model (CAM) to distribute the cost of grid upgrades across multiple users, rather than overburdening the first customer to connect.

These measures reflect a broader shift in how Ontario manages electricity system growth: from reactive infrastructure planning to proactive, coordinated investment. Similar changes are currently being

contemplated by the OEB through their ongoing Transmission Connections Review Working Group, which may result in changes to the Transmission System Code.

The government is also establishing a Housing Electricity Growth Forum to bring together municipalities, utilities, developers, and the OEB. This forum will help to identify local bottlenecks, improve coordination across LDC service areas, and explore further reforms to support housing delivery without compromising system integrity or affordability.

The province remains committed to the 'Beneficiary Pays' principle that currently underpins the connection cost responsibility framework. However, the application of this principle should not unduly burden first movers and discourage prudent, proactive investment in electricity infrastructure to meet broader provincial policy goals such as the construction of new homes, businesses and other priorities. LDCs, transmitters and their shareholders should also be kept whole, and the potential for wasted costs or under-build must be minimized to protect Ontario ratepayers.

Ontario is also working to support the use of non-wires alternatives (NWAs) – such as energy efficiency, demand management, and local generation – to help meet local electricity needs without immediately expanding traditional infrastructure. When deployed strategically, NWAs can ease pressure on constrained parts of the grid, accelerate customer connections, and reduce the overall cost of growth-related upgrades. As part of its grid modernization strategy, the government is encouraging LDCs to evaluate NWAs where they offer a cost-effective solution to enable new development and improve service delivery.

Together, these initiatives are helping to modernize the last-mile connection process – making it faster and more aligned with Ontario's long-term growth and electrification goals. They ensure that customers can connect to the electricity they need, when and where they need it, while supporting a grid that is ready for the future.

Supporting Quicker Connections with New Distribution Capacity Maps

As part of Ontario's efforts to modernize the electricity system, the province is improving how customers access information about available capacity on local distribution grids – helping to reduce project delays and support faster, more efficient connections.

Under a new province-wide capacity mapping initiative introduced by the OEB, all LDCs are required to provide public maps showing where there is available system capacity to support new customer connections, such as EV chargers, as well as commercial or large industrial loads.

- Phase 1, now complete, requires all local distribution companies to post basic capacity maps on their websites using existing tools and data.
- Phase 2, under development in 2025, will aim to deliver more detailed, consistent, and centralized capacity information to help customers and developers make more informed decisions; functionality to show a system's capacity to host DERs will also be added.

This initiative is a key part of Ontario's work to modernize the grid, improve transparency, and better enable the timely connections needed to meet Ontario's growing energy demands.

Unlocking the Value of Distributed Energy Resources

As Ontario's electricity system grows, so will the role of energy users. Today, families, communities and businesses aren't just looking to use electricity – they're also looking to produce it, store it and manage it in real time.

This shift is being driven by distributed energy resources (DER) – technologies like rooftop solar panels, batteries, smart thermostats and electric vehicles that generate or manage power close to where it's used. These tools give Ontarians more control over their energy use, helping to lower bills, boost reliability, and make homes and businesses part of a more modern and efficient electricity system.

This transformation is already underway, with over 6,000 MW of DER capacity installed across the province – including, a large portion behind the meter.

Behind the Meter vs Front of the Meter

Behind the meter: Energy systems like rooftop solar panels or home batteries that provide on-site service to a specific home or business. They can help reduce electricity bills and provide backup power.

Front of the meter: Larger energy systems, such as solar farms, that connect directly to the distribution grid. These resources typically have contracts with IESO to send electricity to the grid and support community energy needs.

In today's system, the full value of these resources remains largely untapped. Customers have limited options to be compensated for the benefits their DER provide to the grid, and many projects face barriers to participation. There is significant opportunity to guide DER investment to where it is most cost-effective and beneficial to local and system-wide needs – helping to relieve constraints, defer costly infrastructure, and improve overall efficiency.

Ontario's energy system must evolve to:

- Use DER as reliable, low-cost providers of grid services;
- Monetize DER fairly, ensuring customers receive compensation that reflects the value their resources contribute to the grid; and
- Mobilize DER providers and investors, making Ontario a leading jurisdiction for innovative energy solutions.

Realizing this future will require a clear framework to unlock the value of DER, lower barriers to participation, and support smarter planning and investment across all levels of the system.

Recent Success – Enabling DER Integration

Ontario has already taken important steps to integrate DER more effectively and level the playing field for non-wires solutions. Recent initiatives include:

- **The Peak Perks program** is a demand response program wherein homeowners enroll their smart thermostats and reduce their cooling load for three hours on very hot days to offset system peaks. Launched in June 2023, Peak Perks has quickly become one of the largest virtual power plants in North America.
- **Behind-the-Meter Solar and Storage Incentives:** The 2025–2036 Energy Efficiency Framework includes new programs that offer incentives for customers to install behind-the-meter solar PV and battery storage systems, helping reduce energy bills and offset peak demand.
- **DER Connections Review:** The OEB's DER Connections Review consultation, launched in 2019, focuses on addressing any barriers to the connection of DERs, and has resulted in standardization and streamlining of the DER Connection process across Ontario.
- **Benefit-Cost Analysis Framework and NWS Guidelines:** In 2024, the OEB released a new Benefit Cost Analysis (BCA) Framework and Non-Wires Solutions (NWS) Guidelines, which require electricity distributors to evaluate DER and other NWS options in their planning and rate applications. Electricity distributors must now include a documented NWS assessment for capital projects over $2 million. By 2026, all rate applications should be fully aligned with the BCA Framework.
- **Performance-Based Rate Regulation Consultation:** The OEB is also consulting on new approaches to performance-based regulation that would better align utility earnings with customer-focused outcomes – like cost-effectiveness, reliability, and service innovation.
- **IESO Capacity Auction Participation:** DER are already participating in Ontario's annual Capacity Auction, where they compete to provide short-term resource adequacy services alongside transmission-connected demand response, generation, imports and storage.
- **Medium and Long-Term procurements:** The IESO's LT1 procurement as well as the recently completed medium term procurement enabled new-build and existing DER to compete and secure IESO contracts.

These initiatives are helping to remove barriers, create market opportunities, and support the cost-effective deployment of DER across Ontario.

Ontario's DER Strategy

To unlock the full value of DER, Ontario is launching a focused plan to better integrate these assets into the electricity system.

This strategy is built on three pillars:

1. **Strengthening Grid Resilience and Efficiency**
   Ontario will guide DER deployment to enhance reliability and lower system costs – relieving local constraints, deferring infrastructure upgrades, and building resilience at the community level to help avoid outages.
2. **Empowering Consumers**
   Ontario will make it easier for customers to adopt and benefit from DER – giving families, businesses, and institutions more tools to manage their energy use, reduce costs, and contribute to a smarter, more flexible grid.
3. **Attracting Investment and Unlocking Innovation**
   Ontario will enable market pathways for DER providers – encouraging private investment in cost-effective solutions that deliver value to customers and the broader electricity system.

Strengthening Grid Resilience and Efficiency

A modern electricity system must be flexible, responsive, and resilient. Grid modernization involves the paced, prudent and cost-effective deployment of technologies that enhance system efficiency, support two-way power flows, and enable more active monitoring and control at the distribution level. DER are a key part of this transformation.

Ontario is taking bold steps to ensure DER are effectively integrated into system planning and decision-making at every level. This includes:

- Enhancing data sharing between the OEB, IESO, electricity distributors, and DER providers to better inform investment decisions, improve system reliability, and reduce uncertainty and costs for developers and customers. Access to accurate, timely data will help identify where DER can deliver the greatest value to the grid.
- Ensuring DER are actively considered in local, regional, and bulk system planning. The government will work with the OEB, IESO and electricity distributors to improve DER integration into system planning frameworks – targeting deployment in areas of grid constraint, informing investment decisions, and enabling smarter, more cost-effective grid modernization efforts.
- Defining a roadmap for the potential development and implementation of Distribution System Operator capabilities, commensurate with need, value, and the flexibility to adapt to evolving circumstances. Building on the OEB's consultation initiated earlier this year, this will support market-based and other means for ensuring reliable and cost-effective distribution services and enhance opportunities for DER.
- Enhancing guidance to electricity distributors on incentive mechanisms for the use of DER as non-wires solutions (NWS). OEB will explore, and where appropriate, provide enhanced ways to encourage electricity distributor use of DER to meet electricity system needs.

Together, these actions will help ensure DER contribute to a more resilient, reliable electricity system while reducing the need for costly infrastructure upgrades and supporting long-term affordability for ratepayers.

Empowering Consumers

Ontario's energy system is evolving and customers want to play a more active role in it. Families, businesses and institutions are looking for opportunities to manage their energy use, reduce bills, and increase self-reliance. DER offers these benefits, but today, the options for customers to participate remain limited.

Ontario is taking action to expand opportunities for customer-sited DER and ensure customers are fairly compensated for the value DER provides. This includes:

- Further unlocking the value of DER aggregations in the IESO-administered markets by launching the DER Stream of the Enabling Resources Program. DER aggregations can provide opportunities for smaller DER to provide and be compensated for grid services.
- Enabling broader eligibility for DER in IESO procurements and programs, through the expansion of near-term opportunities for demand response, capacity, ancillary services and storage; including DER aggregation in future competitive procurements; and utilizing existing DER.
- Reviewing the net metering framework to better reflect the system value of customer-sited DER and to expand eligibility. The government will engage with Indigenous communities, and consulting sector partners to explore how net metering can support community affordability, unlock local DER uptake, and serve regional needs more effectively.

Opening New Market Opportunities for Local DER

To create new investment pathways for DER providers, the provincial government has directed the IESO to develop a Local Generation Program. This program will competitively secure small scale electricity generation resources, such as biogas, wind, solar, and natural gas generators (including CHPs) – both new-build and re-contracted – that are connected to the distribution system.

Set to launch in 2026, the program will unlock new opportunities for DER providers to participate in the electricity system and help ensure customers benefit from more affordable, locally supplied power.

Attracting Investment and Unlocking Innovation

To fully unlock the value of DER, Ontario must be a competitive and attractive jurisdiction for DER providers. That means reducing red tape, improving market certainty, and ensuring investments are aligned with system needs and customer value.

Ontario is advancing a series of initiatives to enable DER investment at scale:

- Reviewing how DER are valued to ensure compensation and regulatory frameworks reflect the services they provide to the grid. This work – led by the government and the OEB, in coordination with the IESO – will inform the future review of the net metering framework and will support more equitable consideration of DER and incent deployment where they offer the greatest benefit.
- Further streamlining DER connection processes by 2025 to reduce administrative burden and costs for developers, local utilities, and customers. OEB's ongoing work to improve connection timelines and costs will help maintain the competitiveness of Ontario's DER market.
- Exploring new cost-recovery models for DER investments by the OEB to allow electricity distributors to recover costs across a broader area when the benefits of DER extend beyond a single project or community. This approach can unlock wider value while being mindful of customer affordability.

In addition to these reforms, the government will work with the IESO to undertake a strategic review of the IESO's Grid Innovation Fund (GIF). For over a decade, GIF has supported pilot projects that explore the innovation and potential integration of emerging energy technologies – including DER – into Ontario's electricity system. Based on this review, the government would enhance the governance of the GIF and work with the IESO to determine future innovation focused funding, which could include:

- Supporting the removal of barriers to commercialization and market integration of DER to further the demonstration of value they can provide to the grid; and
- Community adoption of DER projects, including those in Indigenous and remote communities, that improve reliability, resilience, and local energy independence.

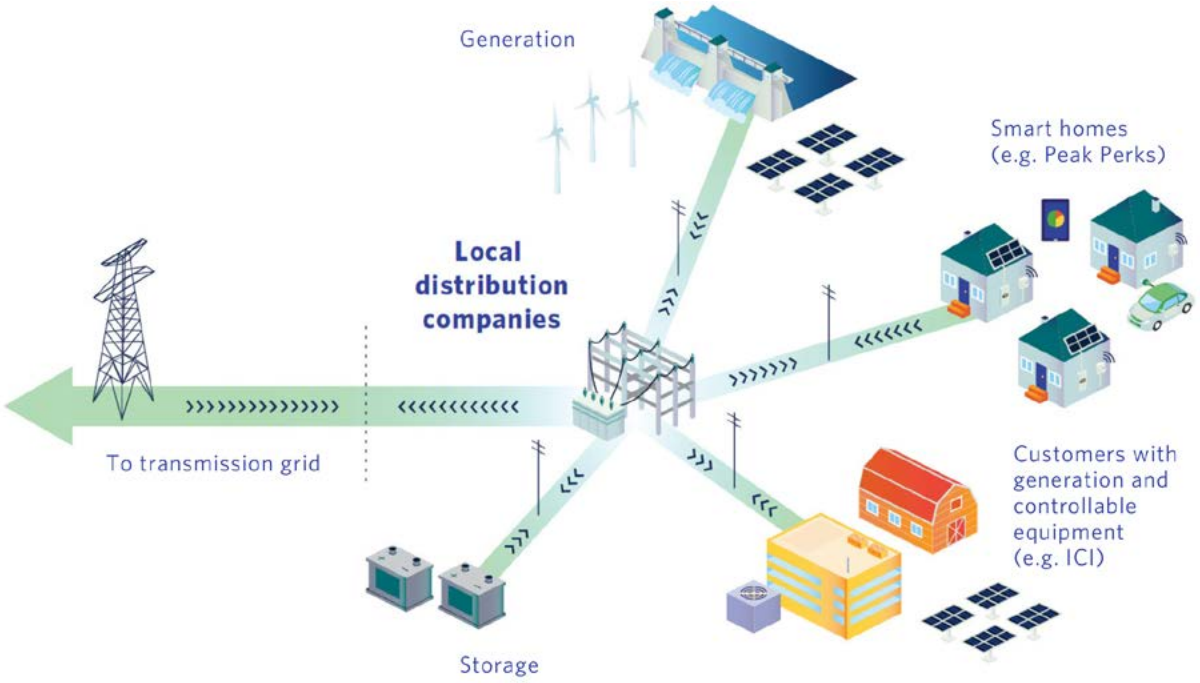
These actions will help ensure DER providers have clear pathways to invest, innovate, and grow in Ontario – while delivering value to customers and strengthening the overall system.

Driving Made-in-Ontario Innovation in EV and Grid Technology

Through the Ontario Vehicle Innovation Network (OVIN), the Government is providing Ontario small- and medium-sized enterprises (SMEs) up to $1M to develop advanced charging and Vehicle to Grid (V2G) technologies.

Under the Advanced Charging and V2G Stream, Ontario companies partner to develop, and demonstrate new technologies to drive commercialization, and deployment of solutions such as bidirectional charging, dynamic charging, and smart charging; energy demand and grid management systems.

Figure 20: DER on the Distribution System



Ontario is enabling the greater use of DER such as local generation, storage, and smart home technologies. These resources are connected to local distribution systems or behind customer meters and can help reduce costs, improve reliability, and defer traditional infrastructure upgrades.

Enabling the Distribution Sector of the Future

As outlined in *Ontario's Affordable Energy Future*, Ontario's utilities need to continue to be high-performing and cost-efficient in their work to connect new homes and businesses to the province's grid.

The challenges ahead are significant. Ontario's LDCs must respond to:

- **Soaring electricity demand,** including the connection of new homes, industries, and electrified transportation;
- **More frequent and severe weather events,** which threaten grid reliability and require new investments in resilience;
- **Evolving cybersecurity threats,** which demand constant vigilance and advanced digital infrastructure.

To meet these challenges, there is a need for strong governance and accountability of LDCs to ensure they operate efficiently, meet high customer expectations and manage costs responsibly.

This will require an unprecedented level of capital investment, all while municipal and other shareholders face competing financial priorities. According to the Electricity Distributors Association, between $103 and $120 billion in cumulative capital additions will be needed in the distribution system to support moderate to high electrification scenarios, including significant capital investments in substations, transformers, and digital grid management tools.

To meet these challenges, Ontario will work in partnership with distributors and their municipal shareholders to ensure that the sector remains resilient, high-performing and growth-oriented. The province will also continue to support efforts to strengthen governance, improve operational efficiency and encourage voluntary consolidation where it helps LDCs achieve greater scale and financial capacity.

Chapter 5

Important Role of Natural Gas

Chapter 5

Important Role of Natural Gas

There are more than 3.8 million natural gas customers in Ontario, with the fuel accounting for roughly 40 per cent of the province's total energy use.

Customer choice – a hallmark of the province's energy system – has resulted in many industrial, commercial, institutional, agricultural and residential customers choosing natural gas as the fuel that delivers affordable energy that best meets their needs.

The province's natural gas and electricity systems effectively combine to affordably, securely and reliably meet a large part of the province's collective energy needs and peak demand. For example, peak demand for natural gas as a heating fuel can be significantly greater than the electricity system, up to 121 gigawatts (GW) for natural gas compared to 24 GW for electricity.

The government is committed to providing a clear vision of the future role of natural gas in Ontario's energy sector and broader economy. As such, this chapter is Ontario's Natural Gas Policy Statement.

Ontario's Natural Gas Policy

Because natural gas provides a powerful combination of low cost and high energy density that cannot currently be matched by other energy sources, it is a critical component of Ontario's future energy mix.

Natural gas remains a vital component of Ontario's energy mix, supporting economic activity and energy reliability across the province. It meets diverse energy needs across the industrial, residential, commercial, institutional and agricultural sectors of the economy. At the same time, natural gas plays a critical role in Ontario's electricity system. As a flexible and dispatchable resource, natural gas generation accounts for about 28 per cent of the electricity system's transmission-connected capacity and ensures the system needs can meet demand when it's needed the most – especially on hot summer days and cold winter nights when reliability is paramount.

An economically viable natural gas network will attract industrial investment, drive economic growth, maintain customer choice and ensure overall energy system resiliency, reliability and affordability.

The OEB will continue to play a key role as the natural gas system's economic regulator to protect the interests of consumers with respect to prices and the reliability and quality of gas service, while ensuring that utilities have the opportunity to earn a fair return and facilitate the rational expansion of the natural gas transmission and distribution system.

Ontario will continue to seek opportunities to support energy efficiency, clean fuels and carbon capture to lower energy costs for consumers and reduce emissions.

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Natural Gas Policy Statement – Highlights

Natural gas is a critical energy source for Ontario. It provides almost 40 per cent of Ontario's total energy use across the industrial, residential, commercial and agricultural sectors of the economy.

In Ontario's vital industrial and agricultural sectors, there are currently few alternatives to natural gas for certain processes. Natural gas is also critical to supporting electrification as it maintains reliability of Ontario's electricity grid and meets peak electricity demand. A premature phase-out of natural gas-fired electricity generation is not feasible and would hurt electricity consumers and the economy.

The majority of Ontario's homes use natural gas for heat, while homeowners in rural and northern areas who do not have access to natural gas, want the option to have it through expansion of the natural gas network.

There is a need for an economically viable natural gas network – as the province builds a more diverse energy system – to attract industrial investment, to drive economic growth, to maintain customer choice and ensure overall energy system resiliency, reliability and affordability.

The OEB will continue to play its role as the natural gas system's economic regulator, protecting consumers, allowing gas utilities an opportunity to earn a fair return on investment, and enabling the continued rational expansion of the natural gas system.

As part of a gradual transition to a more diverse energy system, Ontario will continue to support the important role of natural gas in Ontario's energy system and economy while pursuing options to lower costs and reduce emissions through energy efficiency, electrification, clean fuels (e.g., renewable natural gas, low-carbon hydrogen) and carbon capture and storage.

The OEB's work to develop a new natural gas connection policy should ensure that a broad range of stakeholders are consulted, to help avoid barriers to building more homes faster, create more alignment between natural gas and electricity policies, and consider impacts on the electricity grid's capability to support customers switching to electric heat options.

Role of Natural Gas in Maintaning Electricity System Affordability and Reliability

Natural gas generation will continue to play a critical role in Ontario's grid, balancing intermittent renewable power generation, such as wind and solar, supported by new energy storage technologies that are deployed at scale and other clean sources.

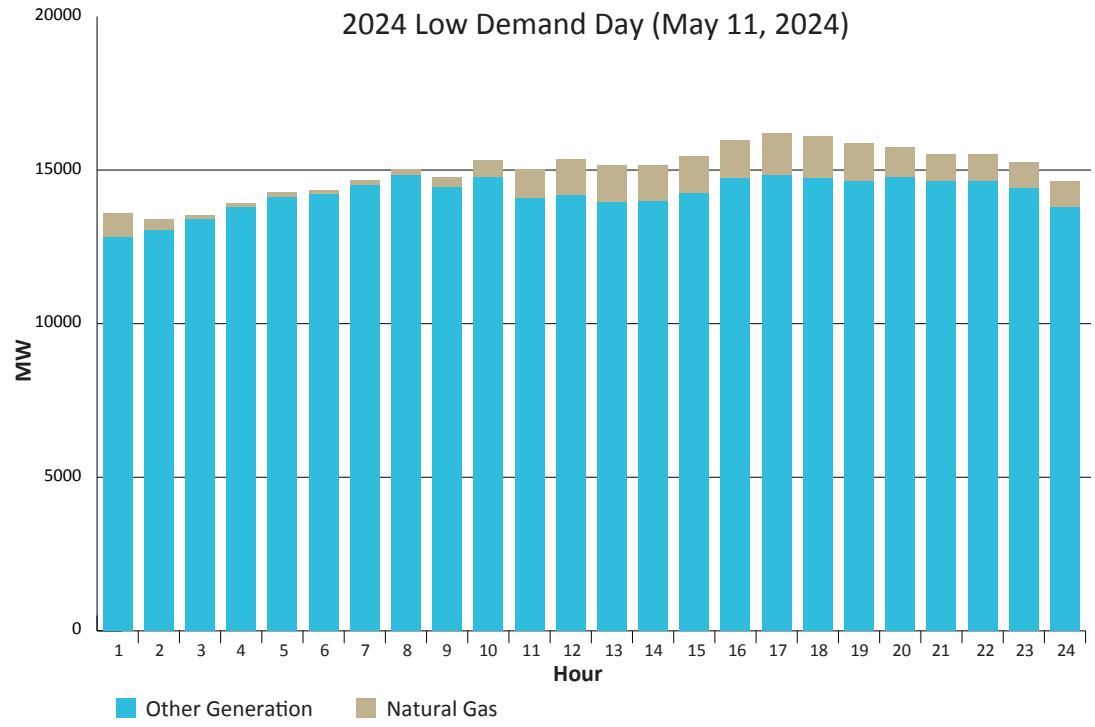
A premature phase-out of natural gas electricity generation would hurt electricity consumers and the economy. It could also put the reliability of the system at risk. In its 2021 Natural Gas Phaseout Study ("*Decarbonization and Ontario's Electricity Sector: Assessing the impacts of phasing out natural gas generation by 2030*"), the IESO found that completely phasing out natural gas generation by an arbitrary date of 2030 is not feasible and could lead to power system blackouts, a 60 per cent increase in residential electricity bills – about $100 per month, on average – and slow the electrification of homes and industry.

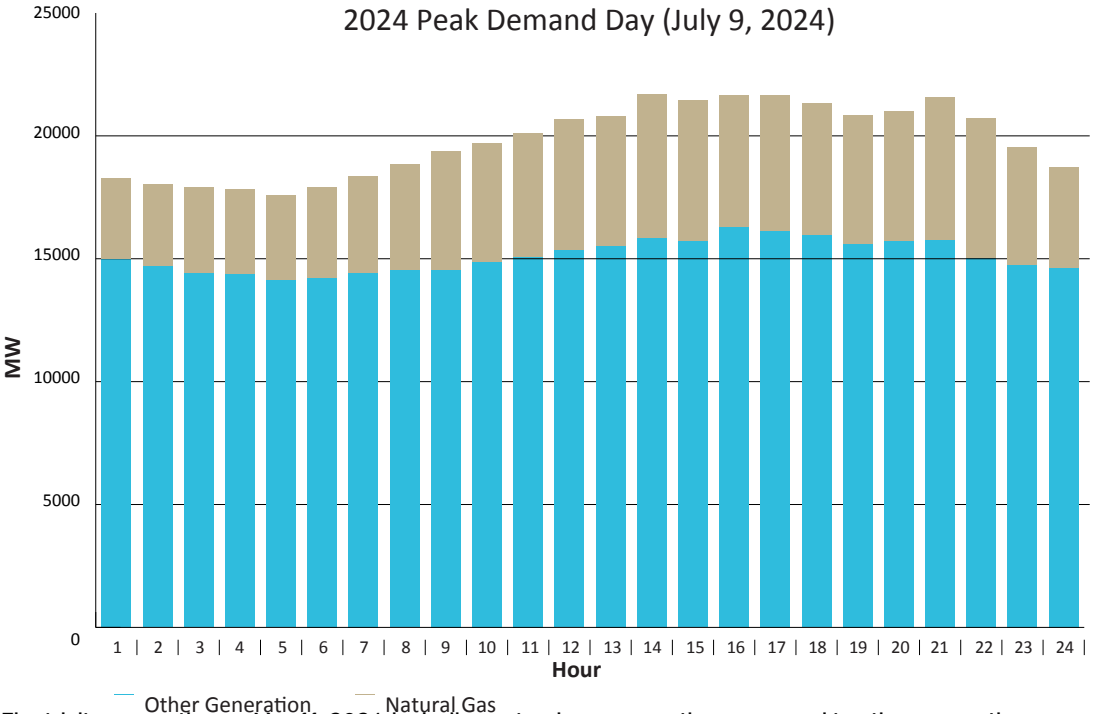
Natural gas is required to provide the IESO with greater flexibility to manage peak electricity demand. It is an insurance policy to maintain system reliability and support electrification across the economy.

It is critical to maintain an economically viable natural gas network to ensure overall energy system resiliency, reliability and affordability as the province moves forward to a clean energy future.

Ontario will continue to support the use of its existing and planned natural gas electricity generation fleet, while maintaining our low-emissions, reliable electricity grid.

Figure 21: Natural Gas Maintains Reliability on Hottest Summer Days





Electricity generation on May 11, 2024, including natural gas generation compared to other generation sources. It was a mild day that required a minimal amount of natural gas generation.

Electricity generation on July 9, 2024, including natural gas generation compared to other generation sources. It was a hot summer day where a higher amount of natural gas generation was required due to increased demand from air conditioning.

OEB Natural Gas Connection Policy Considerations

Through the *Keeping Energy Costs Down Act, 2024* and associated regulations, the provincial government restored a long-standing policy for gas utilities to use a 40-year revenue horizon to calculate the upfront cost of new natural gas connections for residential, small commercial and small farm customers. Doing so prevented thousands of dollars from being added to the cost of new homes.

The legislation also includes authority to require the OEB to hold a new hearing in the future to revisit the revenue horizon. Work to develop that new policy should ensure a broad range of stakeholders are consulted on the appropriate revenue horizon for natural gas distribution infrastructure, and how that horizon should evolve over time as the customer driven demand for natural gas changes. This should be done with regard to the following policy principles:

- Does not introduce barriers to Ontario's plan to build more homes faster;
- Considers more alignment of cost allocation and recovery policies between natural gas and electricity connections, including the revenue horizon and the way capital contributions are charged to customers;
- Considers impacts on electricity system capability to support electric heating options and how this may impact timelines for fuel switching; and
- Considers appropriate customer protections.

Ontario's Natural Gas Supply and Energy Security

Ontario benefits from access to a highly integrated North American natural gas pipeline network. This system supplies natural gas from multiple producing basins, including Western Canada, Pennsylvania, Ohio, and West Virginia. In recent years, approximately two-thirds of Ontario's natural gas supply has been imported from the United States, with the remaining third delivered from Western Canada.

Ontario supports the development of new east-west energy corridor to expand access to Western Canadian natural gas and crude oil and reduce reliance on U.S. imports.

Ontario's approach to new energy corridors is guided by clear principles, including supporting market access for Western Canadian oil and natural gas, maximizing economic benefits for Ontario workers and suppliers, and reducing federal regulatory barriers that delay project approvals. These principles are outlined in Chapter Six of this Plan.

The Role of Natural Gas for Different Customers

Natural gas plays a diverse and essential role across Ontario's economy, serving the unique needs of residential, commercial, institutional, industrial and agricultural customers. Its affordability, reliability and energy density make it well-suited to a wide range of applications – many of which are difficult to replace or replicate with other energy sources at this time. In some cases, natural gas is being paired with other energy technologies or being replaced with other energy sources to improve performance, increase system resilience and reduce emissions.

Residential Customers

In homes across Ontario, natural gas is primarily used for space heating, water heating, and cooking. For many families – especially during Ontario's cold winters – it remains the most reliable and cost-effective source of heat.

Some households are transitioning to fully electric heating or adopting hybrid systems that combine a gas furnace with an electric heat pump. Hybrid systems maintain a connection to natural gas for peak cold-weather performance, while shifting some heating demand to electricity during milder seasons. This approach reduces pressure on the electricity grid and can lower household emissions without compromising comfort.

Natural gas customers also have the option to voluntarily add RNG to their supply. The availability of RNG is expected to grow as new sources are developed, helping reduce emissions while continuing to use existing infrastructure.

Ending the Carbon Tax on Home Heating and Driving

Effective April 1, 2025, the federal government eliminated the consumer carbon tax on natural gas and gasoline for Ontario families – reducing the cost of home heating and driving.

This change followed strong advocacy from the Ontario Government, which opposed the tax from the outset and called for its removal to make life more affordable.

Ending this tax is expected to save Ontario households approximately $365 per year on home heating and between $350 and $430 per year on fuel for their vehicles.

Ontario's plan to meet growing energy demand while reducing emissions does not and will not include a carbon tax.

Commercial and Institutional Customers
Commercial and institutional customers rely on natural gas for space and water heating, cooking, laundry, and backup power. Schools, hospitals, hotels, and restaurants use natural gas for both comfort and critical operations.

In many facilities, natural gas systems are being complemented with energy efficiency measures or integrated with low-carbon alternatives – such as electric water heaters or solar thermal – where technically and economically feasible. Backup generation using natural gas continues to provide essential energy security during electricity outages, especially for health and emergency services.

The adaptability of natural gas infrastructure also makes it a reliable platform for future integration of clean fuels like RNG and hydrogen, as their availability and cost competitiveness increase over time.

Industrial and Agricultural Customers
Natural gas is indispensable to Ontario's industrial and agricultural sectors – serving as both a fuel and a feedstock for high-value economic activity. It powers high-temperature processes in industries such as steel, cement, and glass, and is used as a key input in the production of petrochemicals, plastics, and fertilizers.

Many manufacturers use combined heat and power (CHP) systems to boost efficiency by generating electricity on-site and reusing waste heat. These systems rely heavily on natural gas for performance and reliability. In the refining sector, natural gas is used to produce hydrogen for lowering sulphur in fuels. Ontario is proposing legislation that would enable carbon captured from these processes to be safely and permanently stored, opening the door for the production of lower-carbon hydrogen and supporting emission-reductions for other industrial processes.

In agriculture, natural gas is essential for heating greenhouses and barns, drying grains, and manufacturing fertilizers. These processes are difficult and costly to electrify. Farms and agri-processors are playing a growing role in producing biogas and RNG – turning organic waste into clean fuel for injection back into the gas grid.

Natural Gas Energy Efficiency

Ontario's natural gas energy efficiency programs – regulated by the OEB and administered by Enbridge Gas – are designed to help residential, commercial, and industrial customers lower their natural gas use, reduce emissions, and save on their energy bills. These programs are discussed in greater detail in Chapter One of this Plan.

Ensuring System Affordability, Security and Reliability

Ontario's natural gas sector has a strong track record of providing affordable, secure and reliable gas service. The Technical Standards and Safety Authority (TSSA) is responsible for ensuring provincially regulated pipeline systems operate safely and adhere to safety standards.

The OEB's regulatory framework protects customers who choose natural gas as their preferred energy source, with respect to price, reliability and quality of gas service. The OEB framework also facilitates the maintenance of a financially viable gas industry, which is key to enabling continued access to natural gas and the safety of the system. It is vital that natural gas utilities have the opportunity to earn a fair return on investments in the maintenance, replacement, reinforcement and rational expansion of the natural gas transmission and distribution systems as well as natural gas efficiency programs.

Over the long-term, maintaining an economically viable natural gas network provides flexibility and options to the energy system.

Chapter 6

Leveraging Other Energy Resources

Chapter 6

Leveraging Other Energy Resources

Energy for Generations takes a comprehensive approach to energy planning – bringing together electricity, natural gas, petroleum, hydrogen, and other energy resources under a single vision. This integrated approach ensures all parts of Ontario's energy system are aligned to support the province's core objectives: driving economic growth, supporting energy security, and enabling a flexible and reliable energy future.

Petroleum products, hydrogen, propane, district energy, renewable fuels, and carbon capture and storage continue to be essential to the province's economy. These resources power industries, support trade and transportation, provide energy options in rural and remote areas, and offer new pathways to reduce emissions and create jobs.

These benefits can also be further enabled through the development of nation-building, job-creating infrastructure – including energy corridors and pipelines that enable the safe and efficient movement of fuels across provincial and national borders. These projects not only strengthen domestic supply chains and energy independence but also help unlock economic potential in regions across Ontario and Canada.

This chapter outlines Ontario's current use of these resources, highlights recent government actions, and identifies opportunities to leverage private-sector innovation and investment to meet the province's future needs.

Fuels

Refined Petroleum Production and Distribution

Petroleum products remain a vital part of Ontario's integrated energy system. They account for just under 40 per cent of the province's end-use energy consumption, primarily serving the transportation sector but also supporting home heating and key industrial applications. Ensuring the continued, secure supply of these fuels is essential to Ontario's economic competitiveness and quality of life.

Ontario's petroleum infrastructure is built around four fuel refineries – three located in Sarnia-Lambton and one in Nanticoke – which collectively process up to 393,000 barrels of crude oil per day or about 20 per cent of Canada's total refining capacity. These facilities meet approximately 78 per cent of the province's demand for refined fuels such as gasoline, diesel, and jet fuel. The remaining refined products are supplied by Quebec and the United States.

The crude oil processed at Ontario's refineries is delivered almost entirely by pipeline, with approximately 86 per cent sourced from Western Canada and the remaining 14 per cent from the United States. These imports arrive via a network of interprovincial and international pipelines that form the backbone of Ontario's refining supply chain.

Once refined, petroleum products are delivered to distribution terminals across the province – including in the Greater Toronto Area, southern Ontario, Sault Ste. Marie, and Sudbury – using a network of pipelines, rail lines, trucks, and marine transport. From these terminals, products are distributed to end users via Ontario's extensive network of fuel retailers, supported by approximately 3,265 gasoline retail stations.

Cleaner Transportation Fuels

The government regulates the amount of renewable content in gasoline and diesel fuel used or sold in Ontario. These requirements are creating opportunities for domestic production of renewable fuel alternatives while helping to lower emissions from conventional fuels.

Ontario is increasing the required renewable content – primarily ethanol which is produced mainly through the fermentation of corn in Ontario.

The transition is being phased in gradually:

- 11 per cent in 2025
- 13 per cent in 2028
- 15 per cent in 2030

By 2030, this change is expected to reduce greenhouse gas emissions by approximately one megatonne annually – equivalent to taking 300,000 cars off the road.

Ontario fuel ethanol production capacity is about 1.1 billion litres per year. Ontario ethanol use is 1.5 billion litres per year.

Ontario is also maintaining the requirement that at least four per cent of diesel fuel be bio-based. Renewable content in diesel is produced in Ontario from soy, canola, used fryer grease and rendered animal fats. Ontario bio-based diesel production capacity is 230 million liters per year. Ontario biobased diesel use is about 290 million litres per year.

Ontario maintains a competitive, market-based petroleum sector. The province does not regulate wholesale or retail prices, and infrastructure – including terminals, bulk plants, pipelines, and retail sites – is owned and operated by private industry. This market structure encourages private investment and innovation while ensuring that supply chains remain responsive to demand and regional needs.

Petroleum products also play a critical role in supporting energy resilience in rural and northern communities and serve as indispensable feedstocks for non-energy applications including asphalt, lubricants, and petrochemicals.

Critical Infrastructure – Why Line 5 Matters

The Enbridge Line 5 pipeline is a critical piece of infrastructure that helps maintain the flow of crude oil and natural gas liquids to Ontario's refineries and petrochemical sector. Line 5 forms part of the broader Enbridge Mainline network, which originates in Western Canada and travels through the United States before re-entering Canada at Sarnia. The pipeline plays a key role in securing Ontario's energy supply and economic resilience.

The government continues to support efforts to ensure the safe and uninterrupted operation of Line 5, including the federal government's invocation of Canada's treaty rights to maintain its operation, recognizing Line 5's importance to both Ontario's economy and North America's integrated energy network.

At the same time, Ontario supports the development of an east west energy corridor to strengthen domestic energy connections and reduce reliance on cross-border infrastructure – improving long-term energy security for the province and the country.

Propane

Propane and other natural gas liquids (NGL) like butane play a key role in Ontario's energy system – particularly in regions that are not served by the natural gas grid. These fuels support residential heating, agriculture, industry, and petrochemical production.

Ontario's primary NGL supply is also delivered via Enbridge Line 5, which transports mixed NGLs alongside crude oil into the province. These are processed at facilities in the Sarnia petrochemical complex, where they are separated into products such as propane, butane, and feedstocks for plastics and chemicals. Additional NGLs are produced at Ontario's petroleum refineries.

Sarnia is home to one of the largest propane production and storage hubs in North America, with a total NGL processing capacity of approximately 130,000 barrels per day. This infrastructure supports both domestic needs and export markets in Quebec, Atlantic Canada, and the U.S. Midwest and East Coast, with propane shipped by rail and truck.

Propane is especially important in rural and northern Ontario communities, where it serves as a primary fuel for space heating, hot water, and agricultural applications like grain drying. It also plays a growing role in the petrochemical sector as a feedstock for low-carbon plastics and chemical manufacturing.

Ontario's wholesale and retail NGL markets are not subject to economic regulation by the OEB. Prices are set competitively, based on local supply and demand, seasonal factors, and transportation costs. This market-based structure ensures supply chains remain responsive to regional needs while encouraging private-sector investment.

As Ontario continues to grow and diversify its energy mix, natural gas liquids – especially propane – remain essential to supporting reliable energy access in off-grid communities and as an input for domestic value-added production.

Building New Energy Corridors, Advancing Pipeline Projects

Ontario's energy security and economic competitiveness rely on continued access to critical fuels transported by pipelines – crude oil, refined petroleum products, natural gas, and natural gas liquids. It is the safest and most cost-effective way to transport these fuels.

In a time of increasing global uncertainty – including geopolitical instability, supply chain disruptions, and energy market volatility – securing long-term, reliable, and domestically controlled access to these fuels is more important than ever.

Canada's vast reserves of oil and natural gas are critical to the country's long-term economic prosperity. These resources support thousands of jobs across Canada, including in Ontario's manufacturing and petrochemical sectors. While the United States has traditionally been Canada's primary export market – connected by an extensive continental pipeline network – there is a growing need to diversify by expanding access to international markets in Europe and Asia. Doing so would enhance economic stability, maximize the value of Canadian resources, and help unlock private investment in new infrastructure.

Ontario supports the development of nationally integrated energy corridors that include pipelines, rail lines, electricity transmission infrastructure, and other critical assets. These corridors will reduce dependence on cross-border systems, safeguard energy access for Ontario families and businesses, and create new pathways to both domestic and global markets. They also create opportunities for value-added applications in Ontario – such as petrochemical manufacturing, refining capacity, and liquefaction terminals for the export of Canadian natural gas. This would build on the strength of the province's existing strategic gas storage, which is key to our energy security and maintaining a stable supply to protect Ontario.

At the same time, Ontario recognizes that all pipeline projects must be developed in a way that protects the public, respects Indigenous rights, and delivers tangible economic benefits, while adhering to Ontario's world class environmental standards. The province has adopted the following principles to guide any new pipeline development into or through Ontario.

Ontario's Pipeline Principles

- **Advance energy security:** Pipelines can enhance Ontario's and Canada's energy security, including by providing market access for Western Canadian fuels, such as crude oil in Eastern Canada, and by opening new market access globally.
- **Ensure safety and environmental protection:** Pipelines must meet all federal and provincial technical standards for public safety and environmental protection, including contingency planning, emergency response programs, and financial assurances for environmental remediation, to continue to be the safest and most effective way to transport fuels such as crude oil.
- **Deliver economic benefits:** Pipeline development in Ontario must maximize opportunities for Ontario workers and suppliers, both during construction and in long-term operations.
- **Uphold Indigenous consultation and advance participation opportunities:** Proponents and governments must fulfill their consultation obligations with Indigenous communities and also enable meaningful opportunities to advance economic reconciliation through partnerships and equity ownership for Indigenous communities.
- **Engage local municipalities:** Municipalities along proposed pipeline routes must be consulted.
- **Secure federal support:** The federal government must provide the necessary financial and regulatory support to enable pipeline development, including a streamlined and predictable regulatory review process.

Opening a Northern Gateway to Global Markets

Ontario is advancing a bold vision to strengthen Canada's economic independence and reduce reliance on the United States by getting our resources to markets by exploring the potential for a new deep-sea port on James Bay. This strategic infrastructure project would serve as a northern gateway – enabling Canadian resources to reach new international markets and creating new opportunities for Ontario's mining, energy, and manufacturing sectors.

A James Bay deep-water port would, if developed and subject to approvals, complement Ontario's support for national energy corridors by providing direct access to tidewater and facilitating the export of critical minerals, fuels, and other resources to Europe and other global markets. It would also help diversify Canada's trade relationships and improve long-term supply chain resilience.

Ontario also recognizes that a James Bay port cannot and will not proceed without close partnership with Indigenous communities.

Ontario is calling on the federal government to be a true partner – by aligning funding, permitting, and regulatory support. That includes repealing the federal Impact Assessment Act (formerly Bill C-69), which has created unnecessary delays and uncertainty for major infrastructure and resource development projects across Canada.

Managing Existing Pipeline Infrastructure

While Ontario supports the development of new energy corridors, the continued safe, reliable, and efficient operation of the province's existing infrastructure remains essential. These systems form the backbone of Ontario's current fuel and natural gas supply and are foundational to the province's energy security and economic competitiveness.

Ontario's pipeline network includes a combination of interprovincial systems – regulated federally – and intraprovincial pipelines, which fall under provincial jurisdiction.

Interprovincial pipelines are regulated by the Canada Energy Regulator (CER) and include:

- **TC Energy Mainline:** A major natural gas transmission system originating in Western Canada and delivering gas to Ontario.
- **Enbridge Crude Oil Pipeline System:** A network supplying Ontario's refining sector with crude oil from Western Canada.
- **Trans-Northern Pipeline:** Transports gasoline, diesel, and jet fuel from Quebec into Ontario markets.

The OEB regulates intraprovincial natural gas pipelines and distribution systems that operate exclusively in Ontario. This includes:

- **Enbridge Gas Inc. (EGI) Dawn–Parkway System:** A critical natural gas transmission pipeline connecting Southwestern Ontario to the Greater Toronto Area.
- **Ontario's natural gas distribution networks:** Operated by EGI and EPCOR, which serve homes, businesses, and industries across the province.

The OEB is also responsible for approving the construction of new hydrocarbon pipelines within Ontario that exceed certain size thresholds. While the OEB does not regulate rates for petroleum pipelines, it does approve the transportation charge component included in natural gas bills for rate-regulated customers.

The safety regulator for pipeline systems operating in Ontario not under federal jurisdiction is the TSSA.

Examples of pipelines operating under provincial jurisdiction include:

- **Sun-Canadian Pipeline:** Transports refined petroleum products from Sarnia-area refineries to London, Hamilton, and the Greater Toronto Area on behalf of its owners, Suncor and Shell.
- **Imperial Oil's Sarnia Products Pipeline:** Delivers refined fuels, including jet fuel for Pearson International Airport, from Sarnia to the Greater Toronto and Hamilton Area.

Ongoing oversight, safety assurance, and strategic management of these existing assets will continue to be a priority as Ontario balances growth, energy reliability, and economic opportunity across all regions of the province.

Low-Carbon Hydrogen Strategy

Hydrogen could play a key role in Ontario's long-term energy plans. In the right conditions, it offers a flexible, low-carbon solution that can support economic development and enhance energy security, while providing a pathway to reduce emissions, particularly in sectors where electrification is less feasible.

Energy for Generations recognizes hydrogen as a strategic resource that can complement other fuels and technologies to help meet growing energy demand, support industry and heavy transportation, and provide reliable energy storage and generation capacity.

The Role of Hydrogen in an Integrated Energy System

Hydrogen-based technologies are uniquely suited to help fill gaps in the energy system that are technically or economically challenging to address through electrification alone. Hydrogen-based technologies may have the potential to:

- Support peak electricity demand as a dispatchable generation resource;
- Provide long-duration energy storage to complement intermittent renewables;
- Reduce emissions in hard-to-abate sectors such as steel, cement, refining, and chemicals; and
- Serve as a clean fuel for heavy-duty transportation and industrial feedstock.

Hydrogen also represents a major economic development opportunity. NRCan estimates that a strong hydrogen economy could create up to 135,000 jobs across Canada, including thousands in Ontario, by 2050 in areas such as production, infrastructure, storage, and clean technology deployment.

Hydrogen's Role in Supporting Industry

Hydrogen is a critical tool to reduce emissions in hard-to-abate sectors where electrification is not technically or economically feasible with current technologies.

Around the world, hydrogen is already being used to:

- Act as a feedstock in the production of ammonia, methanol, and other key industrial chemicals.
- Replace diesel fuel in heavy-duty vehicles, such as long-haul trucks, buses and trains, and industrial vehicles like forklifts.
- Replace higher emitting fuels in high-heat industrial processes like steelmaking, cement production, and aluminum smelting. For example, replacing coal and coke use in steelmaking.

Today, Sarnia's dense concentration of energy-intensive refineries and chemical producers consumes over 150,000 tons of hydrogen derived from natural gas annually, which is targeted for replacement with hydrogen produced from low-carbon sources, such as renewable energy, or through processes using carbon capture and storage.

Ontario's Low-Carbon Hydrogen Strategy (2022)

To capitalize on this opportunity the government released its Low-Carbon Hydrogen Strategy in 2022. This strategy set out a vision for a thriving hydrogen economy, with concrete steps already taken to deliver on outcomes, including:

- **Hydrogen Innovation Fund (HIF):** Launched in 2023 with $15 million in funding, supporting 14 pilot and feasibility projects – nine of which have been completed.
- **Niagara Hydrogen Centre:** Construction is underway on Atura Power's 20 MW electrolyzer, expected to begin operations in 2026. The facility will use water from Niagara Falls and off-peak electricity to produce clean hydrogen and provide grid balancing services.
- **Regulatory framework for carbon storage:** Ontario has taken steps to advance a regulatory framework for commercial-scale geologic carbon storage, most recently through the proposed Geologic Carbon Storage Act. The government will continue to work with stakeholders and Indigenous communities to enable the development of geologic carbon storage projects in Ontario.

Listening to Ontario's Hydrogen Sector

In fall 2024, Minister Oosterhoff led consultations with industry and other stakeholders on next steps to grow the province's low-carbon hydrogen economy.

Participants and respondents to a posted policy proposal highlighted the need for long-term policies to attract investment in hydrogen production, infrastructure, and end-uses – along with near-term government support to advance high-value market opportunities.

Recent Developments and Next Steps

As Ontario works towards a renewed strategy, the following new initiatives will support the low-carbon hydrogen economy:

- **Expanded HIF:** In March 2025, Ontario announced a new $30 million round of funding, with streams for electricity grid integration and broadened eligibility for end-use applications such as transportation and heavy industry.
- **Hydrogen Interruptible Rate Pilot (H2 IRP):** The government is directing the IESO to provide recommendations for government consideration for a pilot program that would offer hydrogen producers an opportunity to manage their electricity costs in exchange for reducing consumption during peak demand periods.
- **Exploring Regulatory Oversight for Hydrogen Pipelines:** The province is exploring potentially expanding the OEB's mandate to regulate dedicated hydrogen pipelines.

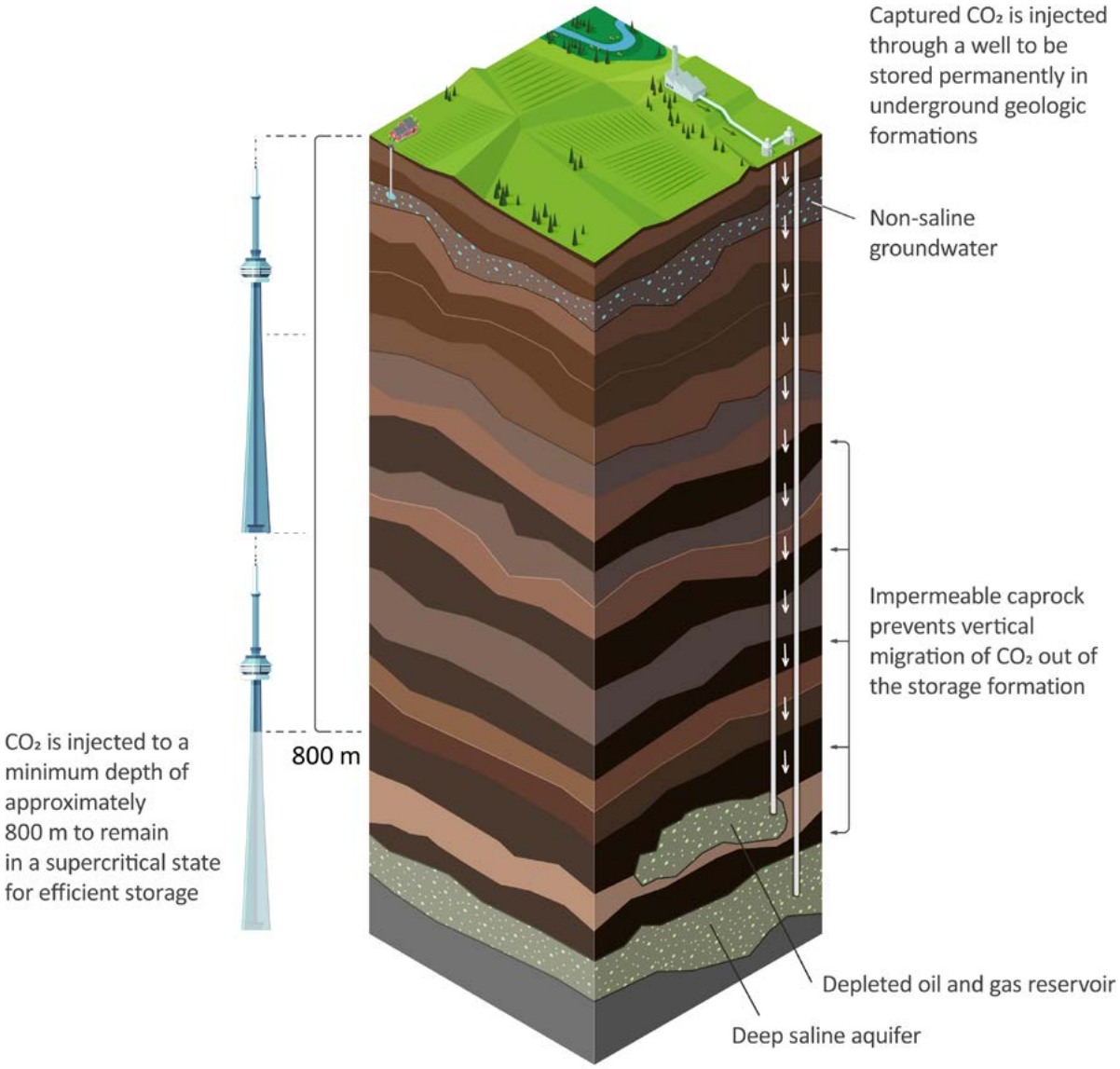
Ontario will build on its actions and investments and continue to collaborate with key partners to advance the low-carbon hydrogen sector, grow our economy, create the jobs of the future, and contribute to clean air for all Ontarians for years to come.

Pioneering Hydrogen Integration in Ontario – The Markham Pilot

Launched in 2022, Enbridge Gas's hydrogen blending project in Markham is the first of its kind in North America. It blends up to two per cent hydrogen produced using Ontario's clean electricity – into the natural gas supply for 3,600 homes, reducing emissions by 117 tonnes per year.

This project is testing how low-carbon hydrogen can be safely integrated into Ontario's existing gas infrastructure. Its success could pave the way for broader hydrogen use, reducing emissions, and strengthening Ontario's position as a leader in clean fuel innovation.

Carbon Management



Carbon capture and storage (CCS) is an emerging technology with the potential to support the industrial sector and enable the production of lower carbon fuels including hydrogen. By capturing and storing carbon dioxide from high-emitting processes, CCS offers a pathway to maintaining industrial activity and protecting jobs in Ontario's resource-based and manufacturing economy while reducing emissions.

While CCS is already in use in other jurisdictions, large-scale deployment in Ontario is still being developed. Adoption has been limited to date due to high capital costs, the need for long-term carbon storage sites and new supporting infrastructure for transportation and injection.

Carbon capture and storage could also enable lower-emissions hydrogen production in Ontario, particularly where hydrogen is produced from natural gas. When paired with CCS, this approach - often referred to as "blue hydrogen" – can significantly reduce emissions and serve as a transitional step toward broader hydrogen adoption in Ontario's energy system.

By enabling lower-emissions hydrogen production at commercial scale, CCS could help industrial users reduce their emissions without changing core processes, offering a practical and near-term pathway to decarbonization in hard-to-abate sectors.

Laying the Groundwork: Ontario's Policy and Legislative Framework

To enable future CCS deployment, Ontario is creating the regulatory conditions needed to support investment and innovation in this space, most recently through the proposed Geologic *Carbon Storage Act*. Ontario will continue to explore opportunities to integrate CCS into the province's broader energy and industrial systems – particularly where it can complement clean hydrogen production, preserve jobs, and attract new investment in low-carbon technologies.

In the future, a dedicated CO^2 pipeline network would be needed to transport CO^2 from sites of capture in industrial or electricity generation plants to enable cost-effective sequestration or the utilization of CO^2 in other industrial or agricultural processes. Alberta and Saskatchewan are currently expanding their existing CO^2 pipeline networks.

Government coordination and support is likely needed to overcome hurdles to establishing a cost-effective carbon capture system that serves industry's needs. As a first step, the government is exploring the expansion of the OEB's mandate to include regulation of dedicated CO^2 pipelines.

Expanding OEB's mandate to include CO^2 pipelines could enable the cost-effective build-out of CO^2 pipelines when it is needed to established CCS in Ontario and protect consumers from potential natural monopolies in CO^2 transportation (similar to OEB's role for electricity and natural gas).

Unlocking Value Through A More Circular Economy

Ontario is advancing a more circular economy capturing emissions, and creating new-clean fuels that support system reliability and economic growth.

RNG is a pipeline-quality gas produced from the decomposition of organic matter at landfills, wastewater facilities, and farm-based waste systems. After processing, it can be blended seamlessly into Ontario's existing natural gas network. Because RNG captures methane that would otherwise be released into the atmosphere, it is carbon-neutral. Effectively, all RNG produced in Ontario today is derived from energy-from-waste projects. Examples include:

- StormFisher, London (7 million m^3/year)
- Dufferin Organics Processing Facility, Toronto (3.3 million m^3/year)
- Woodward Wastewater Facility, Hamilton (1.6 million m^3/year)
- Stanton Farms, Ilderton (4 million m^3/year)
- Niagara RNG (24 million m^3/year)
- Additional projects under development include the Ridge Landfill RNG project in Chatham-Kent

RNG is an important driver of economic growth in rural communities, generating value through organic waste recovery in Ontario's agrifood sector.

Sustainable aviation fuel (SAF) is another emerging low-carbon fuel made from non-petroleum feedstocks such as agricultural crops (e.g., corn, soybeans) as well as cooking oil, animal fats, agricultural residues, algae, and non-food crops. With existing logistics and biofuel production capacity, Ontario is well-positioned to participate in the global SAF supply chain.

The province is also supporting biomass innovation. Ontario's Forest Biomass Program, launched in 2023 and expanded in 2024 with an additional $60 million, funds projects that convert underutilized forest resources into renewable fuels, bio-coal, and clean heat. These projects support economic development in northern and rural communities, while creating new markets for Ontario's forest industry.

Energy-from-waste is also expanding into electricity and hydrogen production. The York Durham Energy Centre in Clarington processes up to 140,000 tonnes of waste each year and generates up to 17.5 MW of electricity while diverting waste from landfill and reducing emissions. In Brampton, Emerald Energy from Waste is piloting the integration of a hydrogen electrolyzer powered by its waste-to-energy facility. The project, supported by Ontario's Hydrogen Innovation Fund, will assess how clean hydrogen produced on-site could be used for heavy-duty vehicles or to provide grid services.

As Ontario expands its clean energy supply, facilities like these could also play a role in future competitive procurements for new electricity and capacity resources. More details on how new generation may participate in upcoming procurements are outlined in Chapter Two of this Plan.

District Energy Systems: Supporting Growth and Local Energy Resilience

District energy systems (DES) provide centralized heating and cooling to multiple buildings through a shared network of underground pipes. By consolidating thermal energy production, DES can improve efficiency, lower emissions, and reduce infrastructure costs – particularly in new developments and high-density urban areas.

Ontario has a strong foundation in district energy, with more than 60 operating systems across the province. DES can use a variety of low-carbon and innovative sources, including:

- Electricity, including electric boilers and heat pumps;
- Waste heat from industrial operations or nuclear facilities;
- Geothermal energy, drawing heat from the earth or lake water; and
- Biofuels and other renewable heat sources.

Enwave Energy Corporation's Deep Lake Water Cooling system in downtown Toronto is an award-winning project that uses cold water drawn from Lake Ontario to provide sustainable cooling to more than 100 buildings, including hospitals, data centres, and commercial towers – reducing electricity use and greenhouse gas emissions in one of Canada's most densely populated urban areas.

In many other jurisdictions where district energy is expanding, dedicated regulatory frameworks have been introduced to protect consumers and ensure DES remains cost-competitive with individual heating and cooling systems. Ontario is taking steps to ensure appropriate oversight and enable responsible growth in this sector.

- The Government is exploring a potential expansion of the OEB's mandate to include DES, by directing the OEB to report back on the suitability, scope, timing, and resource considerations of such an expansion.
- The IESO is being directed to identify opportunities within current and upcoming policies, programs, and procurements for new and existing district energy systems to support the province's broader electricity system needs.

With Ontario's population growing, DES offers a practical opportunity to meet a portion of future energy demand – while supporting electrification, decarbonization, and efficient land use planning.

Chapter 7

Integrated Energy Planning

Chapter 7

Integrated Energy Planning

Ontario is growing quickly. Millions of new residents, thousands of new businesses, and billions in industrial investment are driving a steep increase in demand for energy. That includes electricity for transportation and new technologies, natural gas and other fuels for industry and heat, hydrogen and biofuels to help fuel hard-to-abate sectors, and energy storage to support system reliability. At the same time, our energy system must remain affordable, secure, reliable and clean enough to allow the province to adapt to an uncertain global landscape and become more competitive, self-reliant and resilient.

Ontario's current approach to energy planning has not kept pace with these demands. For too long, decisions about electricity, natural gas, and other fuels have been made separately, without a unified view of how they work together to power the province's economy and communities. This siloed approach, which increased the risk of delays, higher costs, and missed opportunities for coordination, ends with the release of Energy for Generations.

Enabled by the *Affordable Energy Act, 2024*, the Province is uniting electricity, natural gas, hydrogen, biofuels, and other energy sources into one integrated plan that will power people's lives and our economy.

Planning for Future Integration

Building the energy infrastructure necessary to power Ontario's future is a complex undertaking that requires the highest level of planning, coordination, and integration.

Starting in 2025, Ontario will launch a regular five-year cycle of integrated energy planning. Each plan will provide a coordinated vision across electricity, natural gas, hydrogen, biofuels, and emerging fuels—along with energy efficiency, demand-side management, and DER. This new cycle will help give energy providers, communities, and businesses the long-term certainty they need to make smart investment decisions.

Priorities for Ontario's Integrated Energy Planning

The government has established the following priorities to guide future energy planning:

1. **Develop a Single, Integrated Plan for All Energy Needs:** Future planning must consider all fuels and technologies together—electricity, natural gas, hydrogen, biofuels, other fuels, and energy storage—to ensure Ontario has the affordable energy it needs to power a clean and growing economy.
2. **Plan on a Regular Cycle with Robust Indigenous and Stakeholder Engagement:** Each five-year planning cycle will incorporate input from the public, Indigenous communities, energy stakeholders, and sector experts to ensure the plan reflects real-world needs and opportunities across Ontario.
3. **Coordinate Forecasting Across Energy Agencies and Utilities:** The IESO, natural gas distributors, electricity utilities, and other market participants will be expected to work together toward using shared, evidence-based forecasts to ensure system-wide alignment across all types of energy use.
4. **Plan for High Growth:** To ensure planning processes are better able to match the pace of growth, the IESO will be expected to coordinate frequent load growth forecasting with utilities and other stakeholders, and to identify transmission projects that would be needed to address capacity constraints that would arise under high growth forecasts.

5. **Ensure Regulatory Alignment and Implementation:** The OEB will continue to play a central role in implementing the plan's direction through efficient regulation of and guidance to the sector.
6. **Incorporate Independent, Expert Advice:** Integrated planning will be supported by independent, external advice on how best to align energy decisions with broader government priorities – such as housing, economic development, and competitiveness.

By following these priorities, Ontario will strengthen its ability to make smarter, more coordinated energy decisions – decisions that make life more affordable, support economic growth, and secure Ontario's long-term energy future for generations to come.

If done right, integrated planning will deliver a range of system-wide benefits, including:

- Avoiding risks of higher costs due to overbuilding or underbuilding of energy infrastructure.
- Enabling fuel-switching when it is cost-effective.
- Focusing on customers' total energy bills, instead of electricity and other fuel bills separately.
- Reducing the risks of energy shortages, and associated loss of economic opportunities.
- Unlocking the potential to decrease net imports of fuels.
- Avoiding risk of decreased export capability.
- Better mobilization and involvement of stakeholders to meet the province's energy needs.

Electrification and Energy Transition Panel Recommendation #5

In its final report to the government, the EETP explained that strengthening cross-sector coordination is best achieved by carefully modifying the existing institutional framework starting with a new approach to integrated energy planning. The EETP made the following recommendation:

"The Ministry of Energy should develop and release on a regular cycle an integrated long-term energy plan that will guide the development of Ontario's energy system. The plan should be developed in consultation with the public, Indigenous communities, and energy stakeholders, and should be supported by a robust analytical framework that includes multiple scenarios and considers the full range of energy sources and technologies."

Forecasting Ontario's Energy Needs

An integrated energy system requires an integrated approach to forecasting and planning.

Ontario's energy agencies and utilities must have a shared, system-wide view of future energy needs – not just for electricity, but across all fuels. That means improving how forecasts are developed, shared, and applied across the sector to ensure the right infrastructure is built, at the right time, for the right cost.

The IESO will continue to lead in producing electricity demand forecasts that guide investment in the province's transmission and generation systems. That work must consider a range of future scenarios, including:

- A reference case reflecting today's best available data and assumptions that reflect trends and policies in electrification of transportation, space heating, industry and other areas that impact electricity and natural gas demand; and
- A high and a low demand scenario that reflect a reasonable increase and decrease from the reference case.

The government is directing the IESO and OEB to ensure these scenarios are modelled as part of future planning cycles, supported by government-led integrated modelling, as appropriate. This will provide a more complete picture of Ontario's future energy needs and help align planning across electricity, natural gas, and other fuels – and help the province make the right investments at the right time across sectors.

The government is also directing the IESO to support the continued development of long-lead energy projects, including new nuclear and hydroelectricity, and long-duration storage in its planning, recognizing their ability to contribute to meeting baseload demand.

Integrated Modelling Studies

The Province recently commissioned a whole-economy energy modelling study. The goal of the study was to analyze how Ontario's energy sector could be impacted by the decision of individual consumers and businesses to electrify or change their energy use patterns. The study took a holistic view of Ontario's economy to assess cost-effective scenarios to meet energy needs across all sectors up to 2050.

The study highlights steps that Ontario can take to power energy economy while also enabling broader economic benefits by:

- Reducing energy demand through energy efficiency measures.
- Pursuing electrification across all sectors and targeted use of clean fuels.
- Growing electricity generation, transmission, and distribution capacity.

Electricity and Natural Gas Coordination in Energy Planning

Better energy sector forecasting is only the first step. To realize the full benefits of integrated energy planning, Ontario must also improve coordination between electricity and natural gas planning processes.

Today, coordination between these systems happens on an ad hoc basis – through regulatory proceedings, municipal shareholder engagement, or utility-driven initiatives. But as the province moves to a fully integrated energy planning framework, this coordination needs to become systematic, continuous, and informed by shared data and forecasts.

To build this foundation, the government will:

- **Establish an OEB-led Information Sharing Forum:** The OEB will establish an ongoing forum for information sharing among the IESO, natural gas distributors, electricity utilities, municipalities, and other key energy planners. This forum will improve visibility into system needs and support more coordinated planning at the local, regional, and bulk system levels.
- **Require Coordinated Scenario Modelling:** The IESO, electricity utilities, and natural gas distributors – under the direction of the OEB – will be required to develop coordinated, best-practice scenario modelling to assess future energy needs across fuels as appropriate. This will improve system-wide consistency on planning assumptions and investment priorities.
- **Strengthen Utility Participation in Regional and Bulk Electricity Planning:** The OEB will take steps to encourage and, where appropriate, require, regulated natural gas distributors and LDCs to participate in regional and bulk electricity planning processes.
- **Ensure Local and Municipal Voices Are Heard:** The IESO will continue to invite input from municipalities and Indigenous communities in regional electricity planning to ensure energy infrastructure decisions are better aligned with local growth plans, economic priorities, and customer and community needs.

An Expanded Role for the IESO Strategic Advisory Committee

Delivering on Ontario's integrated energy planning framework requires advice that goes beyond the energy sector alone. It requires perspectives from across the economy – housing, transportation, industry, municipalities, Indigenous communities, and beyond.

The IESO's Strategic Advisory Committee (SAC) was established to provide timely and insightful policy advice on behalf of the energy sector and stakeholders to the IESO Board and executives as it relates to IESO's mandate as well as emerging issues, policy challenges and system needs. Its membership includes representatives from across Ontario's energy sector, including representation of:

- Electricity generation and storage;
- Electricity consumers;
- Transmitters and distributors;
- Energy-related service providers; and
- Ontario communities, including Indigenous communities, municipalities, environmental organizations and academia.

With the pace of economic and technological change accelerating, IESO should continue to expand the mandate and membership of the SAC to reflect the province's broader economic and community priorities. This includes adding representation from sectors that are driving Ontario's energy transition and economic growth, such as:

- Housing and real estate development;
- Transportation and transit agencies; and
- Industrial and advanced manufacturing sectors.

In response to the EETP recommendations, Ontario will also invite technical standards and safety organizations – including the Electrical Safety Authority (ESA) and the Technical Standards and Safety Authority (TSSA) – to participate in the SAC meetings and discussions, ensuring that energy planning reflects safety, regulatory, and technical realities.

Going forward, Ontario will seek opportunities to rely on the SAC to provide independent and comprehensive advice on critical issues that will guide integrated energy planning.

Planning for Growth

Enhancing Regional and Bulk Planning Process for High-Growth Regions

Ontario's energy system must not only expand – it must expand faster and smarter, especially in regions experiencing rapid population and economic growth. Major housing developments, industrial projects, and infrastructure investments can emerge quickly between planning cycles.

In recent years, the IESO and OEB have worked to improve regional and bulk system planning, and stakeholders have played an important role in identifying opportunities to strengthen these processes even

further. They have highlighted the need for planning to be more responsive to the realities of high-growth areas – where housing developments, major industrial projects, and infrastructure investments are moving quickly.

Ontario is listening to these partners and taking action. The government is directing the IESO and OEB to make the regional and bulk system planning process more nimble, flexible, and responsive to the pace of growth in these regions.

This includes:

- Directing the IESO to establish at least annual meetings of Technical Working Groups in each planning region, in consultation with LDCs, transmitters, municipalities, and major customers, to ensure more frequent sharing of demand forecasts, system needs, and planned infrastructure investments.
- Directing the IESO to establish a Major Project Identification Committee for each planning region, in consultation with municipalities, Indigenous communities, and provincial economic development partners, to ensure that major housing, industrial, and infrastructure projects that could impact electricity demand are identified early and fully accounted for in high-growth demand forecasts.
- Directing the IESO, in consultation with transmitters and LDCs, to proactively identify transmission and distribution bottlenecks that could delay major housing, industrial, or economic development projects.
- Directing the IESO, in consultation with Hydro One, OPG, Bruce Power and other project proponents, to support timely integration of new generation resources, including nuclear, hydroelectric, and other strategically important projects, into the provincial and regional electricity systems.

Major Project Identification Committees (MPIC)

Energy planning is only as effective as the information it is built on. These committees will bring together key players with insight into major economic, industrial, housing, and infrastructure developments that could impact future energy needs. Participants will include:

- Ministry of Economic Development, Job Creation and Trade, including Invest Ontario,
- Ministry of Municipal Affairs and Housing,
- Ministry of Northern Development,
- Ministry of Energy and Mines,
- Local and regional economic development agencies,
- Municipalities and Indigenous communities, and
- Any other organizations with information relevant to high-growth forecasting.

MPICs will serve as an early warning system for identifying large projects that could drive new demand for electricity. This ensures that major developments – such as new mines, manufacturing plants, housing developments, or transit projects – are factored into high-growth forecasts before they materialize, giving the province time to plan and act.

Reviewing Planning Processes to Unlock Faster Energy Solutions

In addition to these immediate actions, the government will ask the OEB to work with the IESO and other stakeholders to identify enhancements to the regional and bulk planning process to better match the pace of load growth.

This review will include:

- An examination of how load forecasts are developed and applied for the purpose of recommending system upgrades.
- Opportunities to strengthen alignment with economic development and housing priorities.
- Additional process improvements to support faster, more responsive planning.

Economic Growth in Agency Mandates

To further embed economic growth as a priority, the government has also proposed amendments to the statutory objectives of the IESO and the OEB to include support for economic growth in Ontario. These changes will help ensure that energy planning and regulatory decisions recognize and support Ontario's growth objectives.

Integration of Natural Gas into the Regional Planning Process

An integrated energy system also requires better coordination between electricity and natural gas planning – especially at the regional level, where energy infrastructure decisions directly impact communities, businesses and industries.

To address this, the government is directing the OEB and IESO to develop a formal process to engage natural gas distributors in regional electricity planning activities. This engagement will start with sharing information necessary to more carefully monitor electricity load growth and the timing of system needs – helping both systems work together to ensure reliable, cost-effective service.

This will help avoid situations where:

- Non-pipe alternatives (NPAs) – such as electric heat pumps – are advanced without accounting for their impact on local electricity demand and grid capacity.
- Upgrades are pursued without considering the availability or timing of lower-cost or more suitable electricity or natural gas solutions.

Municipal Energy Plan Program Review

As Ontario builds the next generation of energy infrastructure, municipal governments – who plan for land use, housing, and economic development – must be better connected to the province's electricity and fuels planning processes. Local insights into population growth, major developments, and infrastructure needs are essential for accurate demand forecasting and timely grid investments.

The province's Municipal Energy Plan (MEP) program already provides funding to help municipalities develop local energy plans that align with land use, transportation, housing and economic priorities. They also help communities identify opportunities for community-wide energy efficiency and energy cost savings.

MEP program funding is available in two streams:

- Stream 1 funds 50 per cent of eligible costs to a maximum of $90,000 for municipalities developing a new community energy plan.
- Stream 2 funds 50 per cent of eligible costs, up to a maximum of $25,000, for municipalities updating or enhancing an existing energy plan.

While participation is voluntary, the government sees greater municipal leadership as a key enabler of integrated energy planning. The government will review the MEP program for further opportunities to support municipalities in taking a leadership role in integrated energy planning in their communities.

Prioritizing and Streamlining Processes for Energy Projects Critical to Growth

Ontario's economic success depends on energy infrastructure being delivered on time and at scale – whether it's new generation, transmission lines, or distribution system upgrades. However, complex permitting and regulatory processes across multiple ministries and levels of government can create barriers, delays, and added costs for projects that are critical to the province's growth and competitiveness.

To address this, the government is launching a strategic initiative to streamline provincial permitting and approval processes for priority energy projects that are essential to supporting housing, job creation, and long-term economic security.

Launching Ontario's "One Team" Approach for Priority Projects

As part of this effort, Ontario is implementing a "One Team" coordination initiative to prioritize and accelerate permitting and approvals for strategically important energy projects, starting with projects that are part of the LT2 electricity procurement process.

This coordinated approach will:

- Bring together ministries, agencies, and regulators responsible for energy-related permits and approvals;
- Provide coordinated guidance and support to project proponents as they navigate permitting requirements;
- Ensure Indigenous duty to consult obligations are met; and
- Increase government accountability to keep projects on track and on time.

The "One Team" model will improve collaboration across government, helping move priority projects from proposal to construction faster, while maintaining environmental protections, safety, and meaningful engagement and consultation with Indigenous communities.

Reviewing Agency-Led Approval Processes

In parallel, the government is directing the IESO and OEB to review the approval, connection, procurement and regulatory processes they oversee, and report back on opportunities to:

- Reduce duplication;
- Minimize timelines; and
- Improve the overall efficiency of project development.

This includes a review of grid-connection procedures and timelines and consideration for performance standards. While both agencies have already made progress on process modernization, the pace of energy demand growth requires continuous improvement to ensure Ontario remains globally competitive and able to deliver the energy infrastructure needed to support its economy.

Work is also taking place across government so that, if passed, the newly proposed *Special Economic Zones Act, 2025* could serve to enable the energy infrastructure needed to support the development and operationalization of these zones, including new transmission capacity. The government recognizes that the successful implementation of new energy infrastructure, including for Special Economic Zones (SEZs), cannot be done without the close collaboration and support of Indigenous communities and Indigenous leadership.

The Act, once passed, would serve to help expedite the permitting and implementation of vetted projects that are anchored/situated in a SEZ with trusted proponents that meet high operating, safety, and environmental standards, including ensuring the Crown's Duty to Consult obligations are duly met. At the same time, the government will work with the IESO to ensure that the energy needs of SEZs are considered in both ongoing and future electricity system planning processes, and system upgrades that are needed to support growth in a SEZ are identified as early as possible.

OEB Mandate Expansion

The OEB currently provides regulatory oversight over the natural gas and electricity sectors. Alternate energy sources, carbon dioxide pipelines, and district energy systems are not currently regulated by the OEB. This could lead to uncertainty and potential impacts to customers. A stable regulatory environment is needed to ensure these energy opportunities can fully develop while ensuring consumer interests are protected as the energy sector transforms.

The government is directing the OEB to explore and report back on the suitability, scope, timing, and resourcing considerations for the potential expansion of the OEB mandate to reflect the evolving energy landscape. The report will consider potential mandate expansions to include distribution of hydrogen through dedicated pipelines, carbon dioxide pipelines, and district energy systems. The OEB will also assess the ways in which rate regulation can facilitate deployment of long-life electricity projects, such as pumped storage.

Chapter 8

Indigenous Leadership and Partnership

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Indigenous Leadership and Partnership

Advancing economic reconciliation is essential to Ontario's energy future. As the province plans for growing demand and builds out new infrastructure, Indigenous communities are not only key partners in this work, they are leaders in shaping Ontario's energy transformation.

Through equity partnerships, energy planning, and project development, Indigenous communities are helping deliver the generation, transmission, and innovation Ontario needs — while unlocking long-term economic opportunities that build intergenerational prosperity. Ensuring Indigenous communities share in the economic benefits of energy development is at the heart of the province's approach.

Ontario remains committed to fulfilling its Duty to Consult, when it arises, in respect of energy infrastructure. It expects developers to engage early with Indigenous communities – both to understand potential impacts, so these can be considered, and to explore opportunities for meaningful partnerships that deliver local benefits.

This chapter highlights how Ontario is supporting Indigenous leadership at every level of the energy system, from majority ownership in large-scale electricity projects to driving community-based energy solutions.

Supporting Indigenous Participation in Ontario's Energy Future

Expanding the Indigenous Energy Support Program

Ontario is undertaking a significant expansion of energy infrastructure – creating new opportunities for Indigenous communities. This has led to a growing and evolving demand for supports that enable Indigenous communities to take up and participate in these energy opportunities and ultimately shape their own future.

The IESO's Indigenous Energy Support Program (IESP) provides funding to First Nation and Métis communities to support their participation in Ontario's energy sector. The program enables communities to undertake energy planning, assess and pursue equity partnerships, develop energy projects and build the skills necessary to take full advantage of emerging energy opportunities, including employment in local projects.

After increasing funding for the IESP by $5 million in November 2023, bringing the total annual investment to $15 million, the government will direct the IESO to expand the IESP to meet the needs of Indigenous

communities and organizations and to respond to new capacity support needs. These program enhancements include

- Increasing annual program funding by $10 million, bringing total annual support to $25 million to help advance Indigenous-led energy projects and ensure related community capacity is in place.
- Expanding eligibility to include emerging technologies like battery storage, ensuring the program keeps pace with Ontario's evolving energy landscape.
- Launching a new funding stream of up to $500,000 per year for each remote First Nation to support diesel reduction initiatives, including transmission connections and projects that address urgent energy needs in off-grid communities.

These enhancements to the IESP reflect a strengthened commitment to supporting Indigenous economic reconciliation, and long-term participation in Ontario's energy future.

Supporting Indigenous Investments in Ontario's Growing Energy System

The Indigenous Opportunities Financing Program (formerly the Aboriginal Loan Guarantee Program) helps enable equity participation by First Nations and Métis communities in energy infrastructure projects. The program provides loan guarantees to support the financing of equity investments, making it easier for communities to become long-term partners in Ontario's energy system.

To reflect growing interest in equity ownership and to support larger, more diverse investments the province introduced enhancements to the program through the 2025 Ontario Budget: *A Plan to Protect Ontario*, including:

- Expanding program eligibility beyond the electricity sector to include eligible revenue generating projects in the broader energy sector (including oil, gas, renewable natural gas and hydrogen), mining sector (including critical minerals) and resource development, to help support investments by Indigenous communities in Ontario's growth.
- Increasing from $1 billion to $3 billion the maximum amount of loan guarantees that can be issued to provide more opportunities for Indigenous communities to participate in the significant growth expected in Ontario's energy system and the expansion of the program to other sectors.
- Transferring the administration and oversight of the plan from the Ontario Financing Authority to the Building Ontario Fund (BOF). The BOF has the legislative mandate to work with institutional investors and Indigenous partners, and has the necessary expertise, investment framework, and resources to act as a single-entry point for Indigenous partners across Ontario, to access financing for infrastructure projects. The program will continue to operate as before, during and after the transition period, to support Indigenous partners in accessing low-cost capital.

The changes are key to building a stronger, more resilient and self-sufficient economy and strengthen the participation of Indigenous communities in major infrastructure projects in Ontario.

Reliable and Clean Electricity Supply in Remote First Nations

The Wataynikaneyap Power Project represents the largest Indigenous-led infrastructure project in Canada and the most ambitious effort to end the reliance of remote First Nation communities on diesel and connect them to the provincial electricity grid in Ontario.

Major construction was substantially completed in summer 2024. The project is majority-owned by 24 First Nation communities, working in partnership with FortisOntario and Algonquin Power & Utilities Corporation through the Wataynikaneyap Power organization.

The project includes:

- A new 300 km transmission line between Dryden and Pickle Lake; and,
- An additional 1,500 km of new transmission infrastructure to connect 16 remote First Nation communities across northwestern Ontario.

More than 1,100 people were employed in construction of the project, which is providing over 18,000 First Nation people with access to clean, reliable and affordable electricity - replacing diesel generation and enabling future housing, community infrastructure and energy planning.

The Ontario Government provided a loan of up to $1.34 billion for project construction costs, reducing financing costs for the project, and helping to keep costs down for ratepayers. The project is cost-shared with the federal government, which provided $1.56 billion in funding at project completion.

Grid connection was necessary to power the needs of the community, including a new school that opened in Fall 2023.

Ending Diesel Reliance in More Remote First Nations

Building on the success of the Wataynikaneyap Power Project, Ontario is committed to exploring and enabling off-diesel opportunities for the nine remote First Nation communities who are still reliant on diesel generators for their electricity needs.

The IESO is currently undertaking a Northern Ontario Connection Study (NOCS) to evaluate the technical and economic feasibility of new transmission routes to connect remote First Nations in northwestern Ontario to the provincial grid. The final NOCS report is expected to be complete later in 2025, pending further engagement and input from the remote First Nations and other interested Indigenous communities and organizations.

The Ontario government remains committed to working in partnership with the five remote Matawa First Nations (Eabametoong, Nibinamik, Marten Falls, Neskantaga, and Webequie) to advance provincial grid connection and address critical, near-term electricity supply challenges, and provide necessary capacity and technical support. The government will also engage with the other four remote First Nations (Gull Bay, Whitesand, Weenusk and Fort Severn) to explore and support these Nations' off diesel interests and opportunities.

In remote regions not connected to Ontario's electricity grid, First Nation communities have also pursued the development of microgrid projects to reduce reliance on diesel fuel, cut emissions, and improve local energy reliability:

- Fort Severn First Nation, Ontario's northernmost community, developed a 300 kW solar project that reduces diesel fuel use by up to 400,000 litres annually. Completed in 2021, the project was delivered in partnership with the IESO and Hydro One Remote Communities Inc. and serves as a model for integrating renewable energy in remote northern communities.
- Whitesand First Nation, located near Lake Nipigon, is developing a Bio-Economy Centre that includes a 7 megawatt MW combined heat and power biomass facility, a pellet plant, and a wood merchandising yard. Enabled by a power purchase agreement with the IESO signed in 2018, the project is anticipated to come into commercial operation in 2030.

Indigenous Leadership and Participation in Energy Projects

Indigenous communities are already leaders in Ontario's energy sector – shaping the province's future as owners, partners, planners, and innovators. Across the province, First Nation and Métis communities are taking up equity in transmission and generation projects, creating long-term value and delivering lasting benefits for their communities.

As Ontario expands its electricity system, new supply and transmission procurements present a critical opportunity to advance economic reconciliation – ensuring Indigenous partners share in the economic growth and prosperity generated by energy development in their territories.

Indigenous Participation in Generation and Storage Projects

Indigenous communities across Ontario are advancing a diverse range of energy projects beyond large-scale transmission – including biomass generation, battery storage, and electricity development. As part of Ontario's commitment to building a more efficient, reliable, and modern electricity grid, the government has launched a bold expansion of generation and storage, including the largest procurement of battery energy storage in the province's history – a key tool for managing peak demand, integrating renewables, and improving system flexibility.

To support economic reconciliation and ensure Indigenous communities benefit from this transformation, the government prioritized projects with Indigenous participation in its recent long-term competitive procurement process.

- Under the E-LT1, nine out of 15 awarded projects, totaling over 400 megawatts (MW), have significant Indigenous ownership.
- Under the IESO's LT1 procurement, nine out of 10 battery storage projects, representing more than 1,400 MW of capacity, also include substantial Indigenous equity.

These projects are expected to enter service between 2026 and 2028, supporting both energy system needs and long-term Indigenous economic development.

This approach will continue in future procurements – including the upcoming LT2Window 1, launching in 2025 – as Ontario scales up its procurement of new generation and storage to meet growing electricity demand.

In addition to opportunities for participation through Ontario's competitive procurement the government expects OPG to explore commercial partnership and procurement opportunities on new greenfield generation developments with First Nation and Métis communities, as well as to explore mechanisms for Indigenous participation and economic benefits in relation to new generation capacity resulting from revitalization of existing electricity generating facilities, where commercially reasonable.

Indigenous Participation in Transmission Projects

Ontario's growing electricity demand is driving the need to develop new transmission infrastructure across the province – from the north to fast-growing regions in the south and east. As projects advance, Indigenous communities are invaluable partners: shaping decisions, securing equity, and participating in construction, operation, and long-term benefits of our transmission investments.

Hydro One's 50-50 Equity Partnership Model

In 2022, Hydro One established a 50-50 First Nation Equity Partnership Model for new, large-scale transmission projects. For transmission projects valued at over $100 million, Hydro One offers First Nations the opportunity to invest in up to 50 per cent ownership of the line.

This model has been implemented across a range of projects, including the Waasigan Transmission Line project a 350-kilometer transmission line that will help meet growing electricity demand and improve system reliability in northwestern Ontario. Phase 1 of the project, from Thunder Bay region to Atikokan, is expected to be in-service later in 2025, and Phase 2, from Atikokan to Dryden, as soon as possible before 2027.

Under Hydro One's equity model, the company entered into an agreement in 2022 with Gwayakocchigewin Limited Partnership (GLP) – then comprised of eight First Nations – and Lac des Mille Lacs First Nation that provided communities with the opportunity to invest in a 50-per cent stake in the Waasigan Transmission Line.

The equity participation model will be applied to several new major transmission projects being developed by Hydro One, including the Northeast Power Line (between Mississagi TS and Hanmer TS near Sudbury North Shore Link Project (between Mississagi TS to Third Line TS), and the Durham Kawartha Power Line (from Oshawa to Peterborough). For more information on these lines see Chapter Three.

Hydro One also works with First Nation and Métis communities to identify opportunities for employment and contracting for Indigenous workers and businesses to support construction of the lines.

Indigenous Project Partnerships and Co-Planning

Indigenous participation in Ontario's energy future goes beyond project ownership – it includes a central role in planning and implementation of new resources and infrastructure. Partnership enables Indigenous communities to help define priorities, shape project development and ensure long-term benefits align with their values and aspirations.

In April 2025, the government announced plans to pursue new hydroelectric development in northern Ontario, co-planned with Indigenous partners. Taykwa Tagamou Nation (TTN) and Moose Cree First Nation (MCFN) are leading the early-stage planning of two potential hydroelectric generating stations – Nine Mile Rapids and Grand Rapids – which together could provide up to 430 MW of clean, reliable electricity (See Chapter 2).

Other examples of Indigenous project partnerships and development include the Oneida Energy Storage Project A 250 MW / 1,000 MWh battery storage facility in Haldimand County, developed in partnership with Six Nations of the Grand River Development Corporation, Northland Power, NRStor, Aecon, and the Mississaugas of the Credit Business Corporation. The project commenced commercial operations on May 7, 2025.

On-Reserve Electricity Supply

On-reserve First Nations' customers can face unique challenges with electricity costs and reliability of supply.

Ontario has a long-standing commitment to provide support to on-reserve First Nation customers for electricity costs. The government will develop tailored policy solutions aligned with the existing rate mitigation framework to ensure equitable treatment of all First Nation customers on-reserve, including those in communities or parts of communities not connected to Ontario's grid.

First Nation communities served by single phase power lines have raised this as a limiting factor for local economic development and an issue of reliability that can impact community well-being. Access to three phase power can deliver fewer service interruptions and the capacity to support heavy duty equipment, enabling reliable community services and growth. Ontario will work with Hydro One to assess opportunities to expand and accelerate access to three-phase power on-reserve, including identifying the scope and cost of upgrades. The government will also work with Hydro One to explore other solutions – such as microgrids – that can improve reliability and support economic development.

Early Engagement and Meaningful Consultation with Indigenous Communities on Energy Planning and Projects in their Territories

Engaging Indigenous communities early in energy planning helps reduce project delays, builds stronger partnerships, and ensures that projects reflect local interests and priorities. Early engagement gives Indigenous communities the opportunity to understand emerging system needs, participate in planning, and position themselves for potential partnership opportunities when new projects – like transmission lines – are identified.

Ontario will ensure Indigenous communities have meaningful opportunities to participate in the IESO's regional and bulk planning processes (see Chapter Seven), supported by adequate capacity funding.

To strengthen this approach, the government is directing the IESO to report back on planned or recent enhancements to ensure early, meaningful, and ongoing Indigenous engagement in energy planning. This includes providing capacity funding and integrating community-led energy plans into the process where applicable.

Ontario remains committed to fulfilling its Duty to Consult, where it arises, in respect of energy infrastructure and expects developers to engage early with Indigenous communities – both to understand potential impacts and to explore opportunities for meaningful partnerships that deliver local benefits.

Regional and Territorial Partnerships: Building Relationships with Indigenous Communities and Organizations

Ontario is committed to early, respectful and meaningful consultation and partnerships, with Indigenous communities. These partnerships are essential to supporting Indigenous participation in energy planning and ensuring the province can meet growing demand through coordinated regional solutions.

The government will also continue to work with Political Territorial Organizations and the Métis Nation of Ontario to support their engagement in the implementation of *Energy for Generations* and related initiatives. This includes continued collaboration on the unique energy interests of their member communities, supported by capacity support.

Chapter 9

Ontario as a Global Energy Superpower

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Ontario's plan to meet growing demand is an ambitious one – building new generation, expanding transmission, modernizing the grid and integrating planning to across electricity and fuels. But this transformation isn't just about powering Ontario – it's also positioning Ontario as a global energy superpower.

With a track-record of delivering major projects on-time and on-budget, the largest nuclear expansion on the continent, the first grid-scale Small Modular Reactor in the G7, and a world-leading supply chain built right here at home, Ontario is proving what's possible when we have the courage to do big things.

Ontario will power its economy, create jobs, lower costs for families and businesses, and provide a continental solution to reducing emissions – not by punishing people with higher taxes, but by exporting Ontario's clean energy, technology, and expertise to the world.

Electricity Export Opportunities

Ontario's priority is clear: build the generation, storage, transmission and distribution infrastructure needed to keep the lights on for families, businesses, and industries here at home.

But as Ontario builds to meet its own growing demand, the province also sees a generational opportunity to do even more – by reaching new electricity export agreements with neighbouring provinces and U.S. states. These jurisdictions face their own growing energy needs, whether from rising demand or from efforts to transition away from higher-emitting sources like coal.

Ontario's clean grid – powered by nuclear, hydroelectric, natural gas, wind, solar, and bioenergy – can help them achieve those goals. By exporting surplus clean electricity, Ontario can help reduce emissions beyond our borders while generating economic returns that benefit Ontario ratepayers, workers, and industries.

Interties and Electricity Trade with Neighbouring Jurisdictions

Ontario's electricity system is already part of a larger, interconnected North American grid – facilitating two-way electricity trade with neighbouring provinces and U.S. states. These connections help balance supply and demand, strengthen reliability, and provide economic and environmental benefits on both sides of the border.

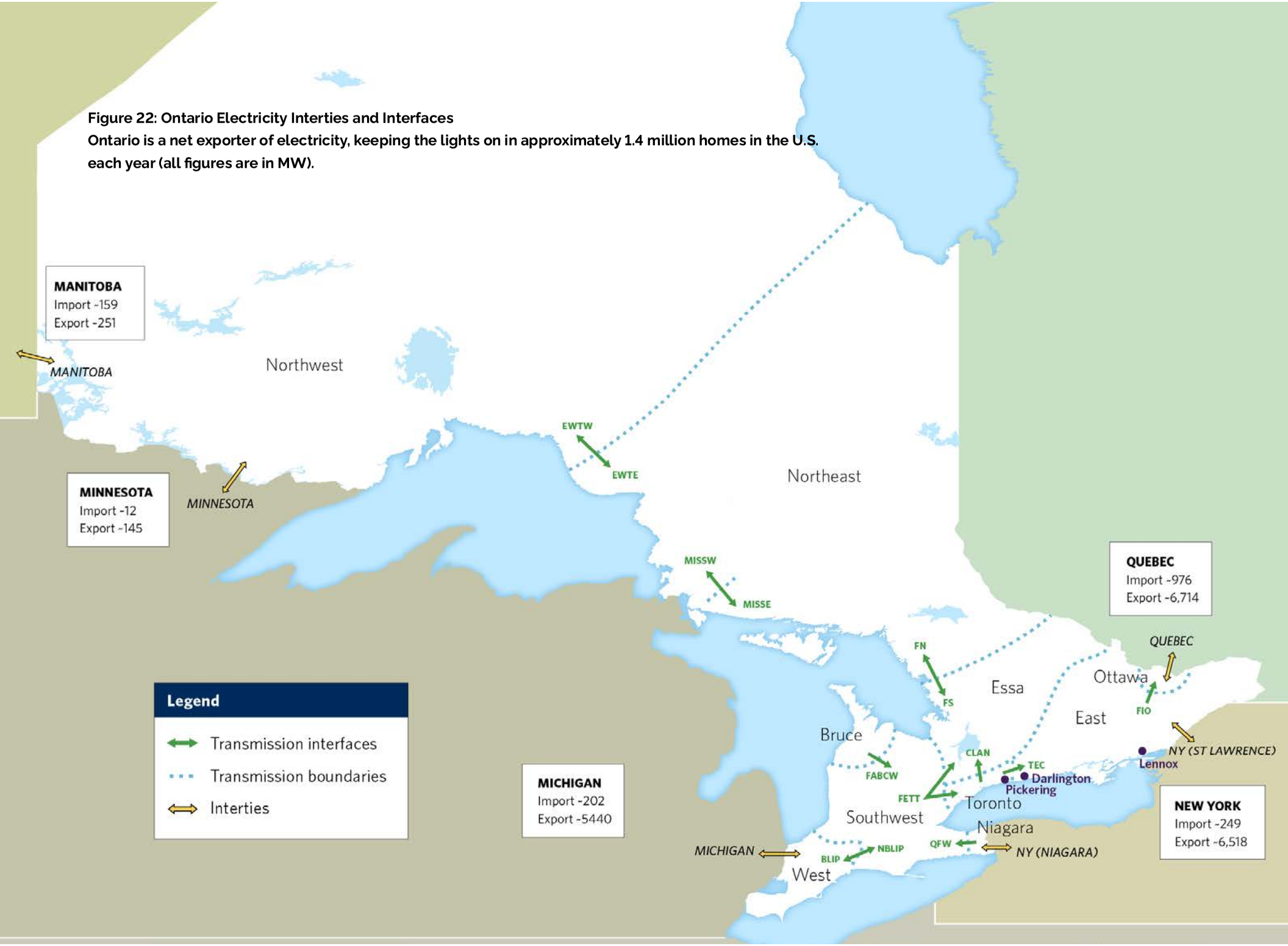
Ontario currently operates 26 interties with five neighbouring jurisdictions:

- Three with Manitoba
- Eleven with Quebec
- One with Minnesota
- Four with Michigan
- Seven with New York

And while these direct connections link Ontario to specific provinces and states, they are only the starting point. Ontario's electricity can flow across the broader, highly integrated North American grid – helping to meet energy needs well beyond our immediate neighbours. Electricity exported through Ontario's interties can move further into the U.S. or Canada, supporting grid reliability and emissions reductions across the continent.

Ontario's transmission interties to Manitoba, Quebec, Minnesota, Michigan and New York represent a total nominal capacity of about 6,000 MW.

Figure 22: Ontario Electricity Interties and Interfaces
Ontario is a net exporter of electricity, keeping the lights on in approximately 1.4 million homes in the U.S. each year (all figures are in MW).



Strengthening Energy Partnerships with Quebec and Manitoba

Ontario's long-standing energy partnerships with Quebec and Manitoba are examples of how provinces can work together to strengthen reliability, optimize existing infrastructure, and deliver value for ratepayers. These partnerships allow Ontario to make the most of its clean energy advantage while supporting regional energy security and economic growth.

Ontario-Quebec Electricity Trade

In 2024, Ontario and Quebec signed a new 600 MW seasonal capacity swap agreement between the IESO and Hydro-Québec. Under this innovative agreement:

- Ontario provides winter capacity to Quebec, helping meet Quebec's peak heating demand.
- Quebec provides summer capacity to Ontario, helping meet Ontario's peak cooling demand.
- Ontario can bank unused summer capacity for use in future years, giving the province added flexibility to manage future system needs.

Strengthening Ontario–Quebec Transmission Connections

Ontario and Quebec have committed to working together to strengthen and expand the transmission connections between the two provinces, and have prioritized two key opportunities:

- Supporting Growing Demand in the North: Meeting increasing electricity needs in the Abitibi-Timmins region, where both provinces are seeing growth in industry and communities.
- Exploring Capacity Enhancements Between Toronto and Montreal: Assessing the potential for new large-scale transmission capacity between the Toronto and Montreal regions – two of Canada's largest economic centres – opening the door to expanded two-way electricity trade that can improve reliability, lower costs, and reduce emissions.

This is a no-cost, capacity-for-capacity exchange, meaning no payments are required by either province for capacity that is traded - protecting ratepayers while maximizing the value of existing generation assets in both jurisdictions.

Strengthening Ontario's Westward Energy Trade with Manitoba

Ontario's intertie with Manitoba provides an important connection to western electricity markets, helping unlock Ontario's potential to export surplus clean electricity to other provinces and the United States.

Recognizing the long-term value of this connection, the IESO and Manitoba Hydro are jointly undertaking a planning study to assess future needs and reviewing technology options for like-for-like replacements of aging infrastructure to ensure this vital connection remains operational and reliable for years to come.

Electricity Exports to the United States

Ontario is historically a significant exporter of clean electricity to the United States. Between 2021 and 2023, Ontario exported more than 40 TWh to U.S. states like Michigan, New York, and Minnesota representing about 9 per cent of Ontario's total annual generation in those years.

These exports have not only helped to displace higher-emitting electricity in U.S. markets – they also generate economic returns for Ontario, with annual export revenues ranging from $400 million to $700 million, based on wholesale prices.

Looking ahead, once Canadian-American relations normalize, Ontario sees even greater opportunity to resume and build on this success together. As U.S. states accelerate efforts to replace coal generation with cleaner alternatives, Ontario's nuclear, hydroelectric, and renewable electricity – supported by a reliable and expanding transmission network – can help meet this demand through mutually agreeable, firm export agreements that benefit Ontario workers, job creators, and ratepayers.

Powering Fortress Am-Can

Ontario's grid can help meet the United States' increasing demand for energy, help reduce continental emissions and strengthen energy security; however, the greatest benefit is here at home. Every new intertie, every exported megawatt, and every nuclear partnership represents new jobs, new business for Ontario's supply chain, and new opportunities for Ontario workers.

Key energy priorities in Ontario's *Fortress Am-Can* plan include:

- Expanding the Integrated Am-Can Electricity Grid: Building out cross-border transmission to boost exports of Ontario's clean energy to the U.S.
- Streamlining Nuclear Approvals: Accelerating the deployment of new small modular and large-scale nuclear reactors in both countries.
- Strengthening Cross-Border Energy Infrastructure: Reinforcing existing and developing new electricity interties, pipelines, and grid connections.
- Eliminating Regulatory Barriers: Establishing a joint working group to align regulations and cut red tape that slows cross-border projects.
- Promoting Ontario's Nuclear Expertise: Building partnerships with U.S. utilities and states to export Ontario's nuclear technology, products, and services.

Unlocking New Electricity Export Opportunities

Ontario's government is working to meet the province's own growing electricity demand – driven by economic growth, electrification, and population increases. But as Ontario brings new nuclear, storage, and other clean energy projects online in the years ahead, the province will be positioned to expand – becoming a long-term, reliable supplier of clean electricity to other jurisdictions across Canada and, pending normalized trade relations, the United States.

Preparing for that future starts now. Ontario and the IESO are taking the steps needed to ensure Ontario is ready to unlock new export opportunities when they arise. This includes:

- Assessing new and expanded transmission interconnections with Quebec and Manitoba to strengthen east-west trade and create new pathways for Ontario's clean electricity to flow across Canada.
- Identifying internal transmission upgrades to move electricity efficiently from Ontario's generation centres to its existing and potential new interties.
- Advancing market analysis of U.S. electricity needs, including in key regions like New York and the U.S. Midwest.

Assessing Long-Term Electricity Market Demand

Looking ahead, U.S. jurisdictions are already forecasting significant electricity shortfalls:

- The New York Independent System Operator (NYISO) has warned of growing capacity gaps, particularly as the state retires fossil fuel plants.
- The Midcontinent Independent System Operator (MISO) – serving much of the U.S. Midwest, including Michigan and Minnesota - is forecasting seasonal reliability risks and capacity deficits as older fossil fuel plants are phased out.

Ontario's government, working with the IESO and industry partners, will continue to monitor U.S. market forecasts and prepare the infrastructure and partnerships needed to turn these future needs into long-term economic benefits for Ontario.

Commercial arrangements between Ontario and U.S. partners would not only enhance efficiency, but also bolster the long-term energy security of all parties.

Firm Export Contracts: A Key Principle for Ontario's Future Trade

Ontario generators and electricity traders already participate extensively in electricity markets, and we expect that to continue. We also expect that there may be investments in Ontario's grid that it undertakes in the normal course that could unlock further electricity trade opportunities. But Ontario sees a strategic role for long-term export agreements that include firm revenue guarantees, to drive value and protect ratepayers.

Firm contracts provide certainty on both sides of the border:

- For Ontario, they provide long term-investment certainty needed to build new infrastructure, helping to deliver direct benefits for Ontario including new jobs and opportunities for workers and new revenue streams that can help lower electricity costs for Ontarians.
- For Ontario's trading partners, they provide guaranteed access to clean, reliable electricity when it is needed most – helping jurisdictions manage reliability, meet emissions targets, and reduce their dependence on higher-emitting fuels like coal and natural gas.

With the right partnerships and the support of the province, Ontario's sophisticated market participants are ready – and capable – of executing these kinds of deals, whether with neighbouring provinces or U.S. states. Ontario's energy workers are ready to deliver the power, if and when the need is there.

Advancing National Energy Corridors

Beyond the expansion of electricity interties, Ontario is ready to work with the federal government, other provinces, Indigenous partners, and industry to advance national energy corridors that connect Ontario's clean electricity, Ontario-produced fuels, minerals, and manufactured goods, and Western Canadian oil and natural gas to new domestic and international markets.

Just as Sir John A. Macdonald's railway united Canada from sea to sea, today's energy corridors represent the next chapter in building a more prosperous and self-reliant nation. This This includes exploring opportunities to build the critical infrastructure needed to move energy and resources east-west across Canada and north to tidewater, including through new transmission lines, pipelines, rail networks, and a potential deep-sea port on James Bay

By strengthening these energy and trade corridors, Ontario can:

- Support market access for Ontario and Canadian energy and products;
- Create jobs and economic growth across Ontario and Canada;
- Safeguard energy security by reducing reliance on U.S. infrastructure and markets; and
- Open new trade gateways to Europe, Asia, and beyond.

Ontario's approach is guided by principles that put energy security, economic benefits, Indigenous partnerships, and regulatory certainty at the forefront. These principles are detailed in Chapter Six of this Plan.

Global Export Opportunities

Ontario's leadership in clean energy is capturing the attention of countries around the world. With the largest nuclear expansion in North America and the first grid-scale SMR in the G7 already under construction at Darlington, Ontario is demonstrating what's possible when a government takes bold action to build for the future.

This leadership is opening the door to new global markets for Ontario's energy technologies, services, and expertise. Countries seeking to phase out coal and meet growing energy needs are looking to Ontario's success as a model to follow – and Ontario's energy sector is ready to deliver.

Ontario's government has established clear priorities to maximize the benefits of exporting Ontario's power and expertise

- Deliver direct benefits for Ontario families through lower electricity bills, new revenue streams for the province, and good local jobs in Ontario's energy sector and supply chain.
- Leverage Ontario's nuclear leadership in SMRs, large-scale nuclear projects, and other innovations to create new export opportunities, drive economic growth, and create jobs across the province.
- Advance Ontario's leadership in medical isotopes, positioning the province as a global isotope superpower, supplying life-saving materials to health care systems worldwide.

Nuclear Energy Saves Lives – Medical Isotopes

This year more than 247,000 Canadians will be diagnosed with cancer, and two of every five Canadians will develop cancer during their lifetime. One of the most consequential tools doctors have available to diagnose and treat this disease will come from Ontario's nuclear generating stations: life-saving medical isotopes.

Ontario's nuclear fleet is at the forefront of innovation in the production of medical isotopes. Currently, the Pickering and Bruce nuclear stations supply about 50 per cent of the world's cobalt-60, a critical treatment for head, neck and cervical cancers as well as for the sterilization of medical tools and supplies. Ontario is also leading the world in the production of other isotopes in nuclear power reactors including production at the Bruce nuclear station of lutetium-177, used in targeted therapy for prostate cancer and neuroendocrine tumours, and production at the Darlington nuclear station of molybdenum-99 and Helium-3 which are used in diagnostic scans for bones, heart, lung and kidney as well as cancer detection. In March 2024, Ontario announced it would also begin producing Yttrium-90 which is used to treat liver cancer at the Darlington nuclear station in mid-2025.

147

Exporting Ontario's Nuclear Expertise

Ontario's nuclear supply chain has decades of experience exporting Ontario-made technology, including the successful deployment of CANDU reactors in countries like Romania, Argentina, and South Korea. These reactors – designed in Canada and supported by Ontario's supply chain – have delivered safe, reliable, and low-emission power to millions of people around the world.

Today, Ontario's BWRX-300 SMR project is building on that legacy. Already under construction at Darlington (See Chapter Two), this first-of-its-kind project is positioning Ontario to lead the next wave of nuclear technology deployment – both at home and abroad. It is attracting attention from governments, utilities, and industries around the world that are seeking proven partners to help them decarbonize their energy systems and meet growing electricity demands.

Ontario's nuclear industry has already signed major international agreements, demonstrating the global demand for Ontario's expertise and technology:

- **Romania**: In 2024, Laurentis Energy Partners (a subsidiary of OPG) signed a $360 million agreement with Romania's SNN to support the refurbishment of the Cernavoda Nuclear Power Plant's CANDU reactor – leveraging Ontario's proven experience in delivering large-scale nuclear refurbishments.
- **Estonia**: Estonia's Fermi Energia selected the BWRX-300 SMR for deployment, citing Ontario's Darlington SMR project as a key factor in their decision.
- **Poland**: In June 2023, OPG and Orlen Synthos Green Energy (OSGE) signed a letter of intent to explore collaborating on operations and maintenance, regulatory support, and workforce training to support the deployment of a fleet of BWRX-300 SMRs in Poland. In November 2024, Laurentis Energy Partners signed an agreement with OSGE to support the development of a comprehensive study, required by Poland's safety authority, the National Atomic Energy Agency, as part of OSGE's licensing application.

- **United States**: In 2023, OPG, Tennessee Valley Authority, OSGE and GEH signed a technical collaboration agreement to advance global deployment of the BWRX-300 SMR, through collaboration on the development of a standard design, creating a coordinated North American and European partnership.

Ontario's nuclear leadership is not just about technology – it's about exporting Ontario's experience, supply chain, and skilled workforce to help countries around the world reduce emissions, strengthen energy security, and grow their economies. And every new partnership creates new economic opportunities here at home, supporting good jobs for Ontario's nuclear workers and supply chain companies.

Ontario – Poland SMR Partnership

Poland, one of Europe's most coal-dependent economies, is turning to Ontario's SMR technology as it works to replace coal with cleaner, more reliable power. Through a landmark agreement between OPG and OSGE, Poland plans to deploy Ontario's BWRX-300 SMR technology to decarbonize its electricity grid and district heating systems.

Ontario's supply chain is already securing real economic benefits from this partnership. BWXT, based in Cambridge, Ontario, has announced its intent to secure a contract worth over $1 billion to manufacture the reactor pressure vessels and other key components for Poland's planned fleet of BWRX-300 reactors.

This partnership is a clear example of how Ontario's energy leadership is creating jobs at home, supporting international decarbonization efforts, and cementing Ontario's reputation as a global nuclear powerhouse.

Energy for Generations

Energy for Generations sets out a bold vision and offers an integrated plan to ensure Ontario's energy system remains affordable, reliable, secure, and clean – not just today, but for decades to come. It brings together, for the first time, planning across all fuels and technologies to guide smarter, more coordinated investments in infrastructure, supply, and innovation.

This integrated approach will support the most competitive, self-reliant, and resilient economy in the G7, powered by world-class nuclear expertise, emerging clean fuels, expanded transmission, and a modernized electricity grid. It reflects the government's commitment to meeting rising demand without compromising affordability, and to turning Ontario's energy advantage into long-term economic strength.

Energy for Generations is not a plan for the next few years – it is a plan for the next generation. It is grounded in practical actions, shaped by regional and sector-wide engagement, and designed to unlock investment, create jobs, and ensure families, businesses, and communities have the energy they need to thrive.

By making bold choices now, Ontario is laying the foundation for a stronger future – one where energy powers opportunity, prosperity, and progress in every part of the province for generations to come.

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