

ONTARIO'S INTEGRATED ENERGY PLAN

Overview & Analysis

Sussex Strategy Group

June 12, 2025



Ontario's Integrated Energy Plan

Review by Sussex Strategy Group

Overview

June 12, 2025: The Government of Ontario released *Energy for Generations | Ontario's Integrated Plan (IEP) to Power the Strongest Economy in the G7*, formally signaling the need for immediate action and long-term planning. The plan aims to present a holistic policy strategy that will guide Ontario's energy planners and regulators based on four core principles: affordability, security, reliability, and clean energy.

Simultaneously, the Minister of Energy and Mines issued two enabling directives to the [Ontario Energy Board \(OEB\)](#) and the [Independent Electricity System Operator \(IESO\)](#), that bind those respective organizations to the IEP.

Following years of planning processes and engagements, the IEP combines existing and new policy initiatives into one definitive document that explicitly states Ontario's position on virtually every energy policy matter, as follows:

- **Integrated Planning Framework and Scenario Development:** combines long-term analysis with yearly forecasts to guide energy planning, including regular scenario reviews. Ministerial oversight to ensure alignment with provincial goals.
- **Natural Gas Policy Statement:** recognizes the important role of natural gas across the entire energy sector, while binding IESO/OEB planning and adjudication to the policy.
- **Distributed Energy Resources (DERs) and Local Energy Systems:** strong focus on the important role of distribution systems while boosting DER integration through updated planning, procurement, and cost recovery models.
- **Nuclear and Hydroelectric Resources:** prioritizes nuclear and hydro, supporting new nuclear builds and Small Modular Reactors (SMRs). The Northern Hydro Program and a 2025 report on export infrastructure will boost generation and regional clean energy initiatives.
- **Regional and Bulk System Planning Modernization:** updates energy planning by integrating electric and gas systems and streamlining regional processes. A 2025 report will recommend reforms to better support growth, coordination, and community needs.
- **Market Design and Strategic Alignment:** update regulations to support non-emitting energy and strengthen distributor roles in local planning without adopting a full Distribution System Operator (DSO) model.
- **Major Project Identification and Transmission Development:** launches the Major Project Identification Committee (MPIC) to prioritize key transmission projects and launches a registry to pre-qualify developers. Strategic corridors will support growth and

ensure reliable, affordable infrastructure. The advancement of competitive transmission via the Transmitter Selection Framework.

- **Procurement Reform and Connection Modernization:** streamline procurement and interconnection to accelerate projects and support new technologies. Reforms target bottlenecks and improvement to access in high-demand areas.
- **Clean Energy Finance and Delivery Mechanisms:** Ontario will use \$160 million from the Clean Electricity Fund and a new Transmission Fund to support clean energy, with ministerial approval to ensure priorities.
- **Indigenous Participation and Partnership:** boosts Indigenous funding and requires equity in major projects to ensure Indigenous leadership in Ontario's clean energy future.
- **Low-Carbon Technologies and Clean Energy Programs:** advances hydrogen, district energy, and carbon capture, with plans to finalize rules by September 2025.
- **Build, Build, Build:** embeds economic development into energy policy, reshaping it to support growth and global prominence.

The IEP is supported by a sequence of legislative instruments that have the effect of enhancing and centralizing the Minister's powers, aligning planning frameworks and accelerating infrastructure development:

- [Keeping Energy Costs Down Act, 2024 \(Bill 165\)](#)
- [Affordable Energy Act, 2024 \(Bill 214\)](#)
- [Protecting Ontario by Unleashing our Economy Act, 2025 \(Bill 5\)](#)
- [Bill 40 | Protect Ontario by Securing Affordable Energy for Generations Act, 2025](#)

Sussex will continue to monitor and provide strategic insight to clients as IEP policies are rolled out, and unprecedented generational investments shape the future energy landscape in Ontario. Please reach out to your Sussex consultants to discuss the impact on your business.

The Plan in Review

INTEGRATED PLANNING FRAMEWORK

The IEP formalizes a holistic planning architecture that blends long-term scenario analysis with annual operational responsiveness. Under the new regime, the IESO will be required to deliver two key categories of planning outputs. The [Annual Planning Outlook](#) (APO) will provide yearly low-demand and high-demand forecasting scenarios that give stakeholders a clear view of evolving system needs, in addition to undertaking comprehensive scenario planning every four years that assesses economic shifts, emerging technologies and preferences, and emissions pathways. These planning cycles will allow the province to course-correct based on local and global trends. The IEP embeds ministerial review into these cycles, ensuring that each planning output aligns with provincial objectives.

Critically, the province will launch a unified planning framework that will synchronize all fuels and resource types together including electricity, natural gas, hydrogen, renewable natural gas (RNG), and biofuels to enable whole-system decision-making through to 2050. This integrated planning scheme will launch in 2025 and will be conducted in 5-year cycles. This will be supported by coordination mandates to the IESO, OEB, and Ministry of Energy and Mines to simplify planning.

NUCLEAR

The plan reinforces several commitments to major projects that will ensure that nuclear remains the primary foundation of the province's supply mix well beyond 2050. This is consistent with legislative changes adopted as part of the *Affordable Energy Act, 2024* which established the prioritization of nuclear power to meet future increases in electricity demand in a manner that is consistent with the policies of the Government of Ontario.

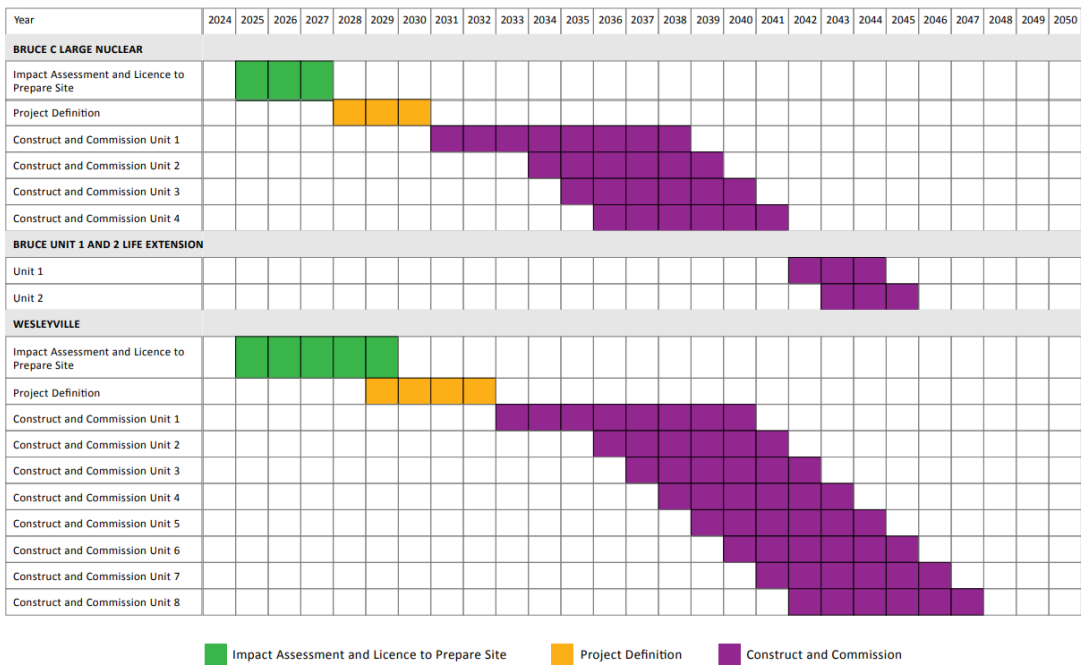
In addition to the ongoing refurbishment activities at Ontario Power Generation (OPG) Darlington and Bruce Power, near-term undertakings include the \$20.9 billion Darlington New Nuclear Project (DNNP) to develop four SMRs totalling 1,200 MW and the refurbishment of the four Pickering B reactors between 2027-2034, which will re-enroll approximately 2,000 MW of baseload supply. Likewise for the early-2030's timeframe, Bruce Power is looking to enhance its existing site output at peak by 450 MW to approximately 7,000 MW through investment in a series of incremental power recovery projects.

New Large-Scale Projects

Since 2023, Ontario has identified two potential projects that would add nearly 15,000 MW of new nuclear supply by the late 2040's if fully deployed:

- **Bruce C** - Potential for up to an additional 4,800 MW from the Bruce Power site by 2045. Bruce Power has commenced pre-development work to help evaluate the suitability of the site for incremental units and initiated the federal regulatory process with the Impact Assessment Agency of Canada (IAAC).
- **OPG Wesleyville** - Originally designated for fossil generation in the 1970's, OPG maintains ownership of a 1,300-acre site near Port Hope which is zoned for electricity generation. With the potential for up to 10,000 MW of new supply, the site is proximate to existing transmission and transportation infrastructure, as well as Lake Ontario for access to cooling water. OPG has begun advancing early-stage planning for this project.
- **Potential Life-Extension of Bruce 1 & 2** - Brought back online in 2012 as the first two Bruce Power units to undergo refurbishment, the potential may exist to further life-extend these units in the early-2040's, which would represent approximately 1,600 MW of preserved baseload energy. Ontario views this as an option that could be explored but would be subject to a detailed assessment before any decision to proceed.

Illustrative Large-Scale Nuclear Deployment Schedule



Additionally, later this year the government has committed to engaging with Canadian pension funds and institutional investors to explore opportunities for joint investment in the province’s future nuclear infrastructure.

NATURAL GAS

The IEP formally introduces Ontario’s Natural Gas Policy Statement and binds the OEB and IESO to the policy for all adjudication and planning.

In short, the policy recognizes the important role of natural gas across the sector and defines a path for the continued expansion of natural gas for home heating, economic development and electricity generation.

Legal effect is given to the Natural Gas Policy Statement via Ministerial Directive. This is an important step which removes some historical ambiguity around the policy treatment of natural gas in the context of OEB adjudicative hearings. The minutiae of how the policy statement will impact applications before the OEB is likely to be determined in the context of individual hearings. What’s certain is that natural gas is poised to continue as a cornerstone of Ontario’s energy mix.

DISTRIBUTION

The IEP charts a clear path to grid modernization in a way that has been missing for several years. Notably, a definition is developed for the term 'grid modernization' which will provide regulated entities with a powerful tool in justifying long-term investments to the OEB:

"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 IEP commits policy and planning focus on integrating DERs into system operations. The DER strategy supports demand-side resources, such as battery storage, demand response and community-level generation. IESO procurements will enable DER participation, while the OEB will assess cost-recovery models for utilities deploying DER infrastructure. The IEP also enhances data coordination between distributors and the IESO to improve forecasting and local capacity modeling. Net metering rules will be reviewed to better reflect evolving customer usage patterns and grid contributions. The Grid Innovation Fund will be scaled to \$10-15 million annually to support pilot projects, technology testing, and a new Grid Resilience Advisory Group will coordinate research and investment.

The Minister's accompanying directives to the IESO and OEB formally bind those organizations to accelerate progress on distribution-side solutions. This is intended to result in more resources being allocated towards ongoing initiatives, such as:

- Joint-purchasing, services, and operations
- NWA/DER/DSO development and commercialization
- New customer connections
- Cybersecurity modernization
- Capacity maps
- EV adoption

Utilities are encouraged to further increase their focus and efforts to help advance the forthcoming distribution sector investments to assist the OEB and IESO in timely, effective and efficient policy making.

TRANSMISSION

The plan takes a balanced and forward-looking approach to expand the province's transmission system. It combines immediate, government-directed designations for critical and time-sensitive projects while planning for future growth.

Transmitter Selection Framework

The IESO is developing a Transmitter Selection Framework (TSF) and will launch a Transmitter Registry by Q3 2025 to pre-qualify capable transmitters. The IESO and OEB are also working to streamline processes and reduce duplication for competitively selected projects. The competitive framework will define clear eligibility criteria—such as cost, voltage, and project lead time—and embed mechanisms for Indigenous leadership and equity participation. Once finalized, the government plans to issue a directive to launch competitive transmission procurement, supported by any required legislative or regulatory changes.

New Build and Expansion

The plan discusses several new development and expansion transmission projects, including:

- **Barrie to Sudbury Transmission Line:** single-circuit 500 kV line Essa TS (Barrie) to Hanmer TS (Sudbury), in-service 2032. Pre-development work for second 500 kV line.
- **Orangeville to Barrie Reconductoring Project:** Hydro One to upgrade existing 230 kV transmission lines between the Orangeville and Essa TS, in-service 2027.
- **Manby to Riverside Junction Reconductoring:** Hydro One to upgrade existing 115 kV circuits from Manby TS to Riverside Junction in the Etobicoke area, in-service 2026.
- **Bowmanville to GTA Transmission Line:** Double-circuit 500 kV line from Bowmanville SS to an existing 500 kV station in the GTA, in-service early 2030s. This is required to connect OPG's SMR units 2, 3 and 4 at Darlington to the grid.
- **Greenstone Transmission Line:** New 230 kV transmission line between Longlac TS (Geraldton) to Nipigon Generation Station and connecting into the East-West Tie near Nipigon Bay, and associated station facilities, in-service 2032.

Consultations and Studies

The plan outlines several proposed and ongoing consultations and studies, including:

- **Supporting Economic Growth in Southwest Ontario:** Consult on the proposed 230 kV transmission line from Lauzon TS (Windsor) to Lakeshore TS (Lakeshore), in-service 2032.
- **Planning for Growth in Eastern Ontario:** Study to assess needs in the Ottawa, Kingston, Belleville and Peterborough regions. Early indications suggest significant near-term demand needs.
- **Parkway Belt West Corridor Study:** Study along existing GTA and surrounding area corridors, including the current Parkway Belt West Plan lands to host new high voltage (230 kV and/or 500 kV) transmission lines and new high voltage TS.
- **Barrie to Markham Corridor Study:** Study between Barrie and Markham to identify where future 230 kV transmission line can be built.
- **Northwest GTA Corridor Study (Update):** Revise the narrowed area of interest, adjacent to the future Highway 413 to enable future lines, including the potential to accommodate 230 kV and 500kV infrastructure to support load growth in York, Peel and Halton Regions.
- **Integrated Regional Resource Plan (IRRP):** IESO to provide recommendations for increasing transmission capacity into the downtown core and will report back by August 2025, with a targeted in-service date by early-to-mid 2030s.

IESO PROCUREMENTS

The IEP identifies the Long-Term RFP as a central mechanism to secure new capacity and energy for Ontario's electricity system, with the objective of delivering cost-effective outcomes for energy consumers. The approach remains consistent with the IESO's recent communications on forthcoming procurements, indicating continuity in the government's procurement strategy. The plan also reinforces the importance of early and meaningful engagement with municipalities and local communities, while maintaining clear protection for prime agricultural lands, including prohibitions in specialty crop areas and measures to discourage development on prime farmland, to ensure that future energy development is both responsible and aligned with local priorities.

Three main procurement streams are emphasized:

- Long Term 2:** The IESO is targeting up to 14 TWh of new energy, equivalent to 6,000 MW of capacity, and 1,600 MW of new capacity resources with in-service dates by 2030-2034. LT2 builds on the previous LT1 process, prioritizing emission-free dispatchable resources. LT2 will include tailored streams for capacity and energy. Cadenced across four procurement windows, LT2 is designed to ensure the IESO has adequate flexibility to meet growing energy needs.

LT2 Procurement Intake Windows

	2025	2026	2027	2028	2029	2030	2031	2032	2033
LT2 WINDOW									
Window 1 capacity (600 MW)	Q3					Q2			
Window 1 energy (3 TWh)	Q4					Q2			
Window 2 (400 MW, 1-3 TWh)		Q3					Q2		
Window 3 (300 MW, 2-4 TWh)			Q3					Q2	
Window 4 (300 MW, 2-4 TWh)				Q3					Q2

- Long Lead Time:** Recognizing the unique development timelines and constraints posed by technologies such as long duration energy storage and hydropower, the LLT procurement is designed to offer long-term contracts of up to 40 years to resources with in-service dates by 2035.
- Local Generation Procurement:** Focusing on DERs, the IESO launched the LGP to competitively secure small-scale and behind-the-meter resources for both new-build and existing resources without costly transmission upgrades. The process is expected to launch in 2026.

ENERGY EFFICIENCY & CONSERVATION

Ontario is undertaking one of the most ambitious energy efficiency initiatives in Canadian history through a 12-year, \$10.9 billion investment aimed at reducing peak electricity demand by 3,000 MW and total consumption by 18 TWh between 2025 and 2036. These programs are being expanded across both the electricity and natural gas sectors, with the dual objectives of lowering system costs for ratepayers and deferring or avoiding the need for new infrastructure investments.

The plan also emphasizes integrated program delivery, such as combined incentives for home retrofits, and broad access to both residential and industrial customers, reflecting a comprehensive approach to managing demand growth while supporting affordability and system reliability.

- **Electricity Efficiency Programs (IESO-Led):** Efficiency will continue to be embedded into bulk and regional planning, with the IESO directing planners to treat efficiency savings as a resource option, particularly in demand-constrained areas. Efficiency programs supporting retrofits, technology interventions and demand response, and performance-based initiatives will continue to evolve to meet Ontario's dynamic electricity market.
- **Natural Gas Efficiency Programs (OEB-Led):** The IEP outlines the future alignment of natural gas and electricity conservation programs, reducing fragmentation and allowing joint retrofit opportunities. The IEP reaffirms support for existing measures that cover residential, commercial, and industrial sectors.
- **Low Income Support Schemes:** The plan reaffirms Ontario's commitment to equitable access to conservation benefits via targeted supports for low-income groups. Measures include the Energy Affordability Program and First-Nations specific programs like the Remote First Nations Energy Efficiency Program.

INDIGENOUS PARTNERSHIPS

The plan identifies Indigenous communities as central to the province's long-term energy strategy. As Ontario expands its energy infrastructure to meet increasing demand, the plan outlines a framework in which Indigenous communities are not only consulted but positioned as co-developers and equity partners in major energy projects. The government commits to supporting Indigenous involvement through the following financial mechanisms, capacity-building programs, and policy tools that facilitate participation in both large-scale and community-based energy initiatives.

- **Expanding the Indigenous Energy Support Program (IESP):** Increasing annual program funding by \$10 million, bringing total annual support to \$25 million, expanding eligibility to include emerging technologies like battery storage, and launching a new funding stream of up to \$500,000 per annum for each remote First Nation to support diesel reduction initiatives.

- **Enhancing the Indigenous Opportunities Financing Program:** Increasing the loan guarantee cap from \$1 billion to \$3 billion, broadening eligibility to include the broader energy sector (oil, gas, RNG, and hydrogen), mining sector, and resource development projects, and transferring program administration to the Building Ontario Fund (BOF) to streamline access to capital.
- **Indigenous Leadership and Participation in Energy Projects:**
 - Indigenous equity will be prioritized in future energy procurement, including generation, storage, and transmission projects.
 - Ontario is committed to early meaningful consultation and partnerships with Indigenous communities. Additionally, the IESO will enhance Indigenous engagement in energy planning.
 - Ontario will support Indigenous-led hydro development and explore new commercial partnerships with Indigenous communities.
 - Ontario will assess opportunities to expand access to power and grid solutions to support economic development and service reliability on reserve.

Contact Us

For more insights and support in navigating the rapidly changing Ontario energy landscape, do not hesitate to contact your Sussex consultant.

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