TORONTO REGION BOARD OF TRADE

Ontario's Energy Moment

Get Ready for Prime Time

JANUARY 2026

Contents

FOREWORD

From Ambition to Execution

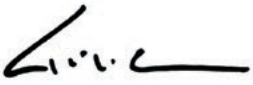
Ontario has a clear opportunity to build an energy system that supports long-term growth, competitiveness, and prosperity. The government's Integrated Energy Plan, Energy for Generations (2025), sets an ambitious course, and we strongly support its direction.

But ambition is not the hard part anymore. Execution is. Ontario's energy system is unduly fragmented, with more players, overlapping mandates, and points of friction than many peer jurisdictions. Delivering the next generation of energy infrastructure will require more than good intentions and individual projects moving in parallel. It will require highly intentional coordination at a scale we are not yet organized to deliver.

This report is grounded in a simple reality: capital, talent, regulation, supply chains, and market access must move together. Each is necessary, none is sufficient.

A piecemeal approach will not be enough. Once Ontario commits to this build, stop-start decision-making will be costly for ratepayers, deter investors, and hold back the province's credibility across sectors.

The recommendations that follow are extensive by design. They reflect the enormity of the task and the numerous conditions that must be met to deliver major projects on time, on budget, and at scale. Ontario's energy sector is entering its biggest moment. Government now needs to pivot from planning to full-system execution and bring an all-of-government approach to making this ambition real.



Giles Gherson
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Executive Summary

Ontario is entering a period of major energy system expansion. The province's Integrated Energy Plan (IEP), *Energy for Generations* (2025), sets out the most ambitious expansion of Ontario's energy system in decades: major nuclear refurbishment and new build, small modular reactors, expanded transmission and distribution, storage, and a diverse fuel mix to keep the system reliable. This is more than an infrastructure plan. It is an economic strategy that will shape Ontario's competitiveness, productivity, and prosperity for generations to come.

Energy security is economic security. Ontario's electricity demand is projected by the Independent Electricity System Operator (IESO) to rise by 65% (262 TWh) by 2050, driven by industrial expansion, electrification, data centres and AI infrastructure, and population growth. Meeting this demand will require significant new supply and infrastructure. But success will be determined by execution: whether Ontario can deliver complex, long-lived projects at scale, on time, and at competitive cost, while maintaining rigorous standards for safety, reliability, and environmental considerations.

Taken together, these conditions form the foundation of an **Ontario Energy Industrial Strategy** that strengthens delivery capacity, mobilizes investment, and positions Ontario to compete in North America's rapidly evolving energy landscape. If Ontario moves decisively, it can accelerate timelines, protect affordability for ratepayers, strengthen grid resilience, and capture more of the jobs, supply chain value, and export opportunity created by this generational build.

This report identifies five enabling conditions that must be in place to deliver the IEP and unlock Ontario's clean energy advantage:

1. **ACCESS TO CAPITAL**
   Investable policy and financing certainty, modern procurement frameworks, and risk-sharing tools that attract private and institutional capital.

2. **ACCESS TO TALENT**
   A workforce pipeline that matches the build curve, aligns training with demand, and supports cross-project labour mobility.

3. **SUPPLY CHAIN READINESS**
   Secure domestic capacity and critical inputs to reduce exposure to global disruptions and capture more value in Ontario.

4. **ACCESS TO NEW MARKETS**
   An export strategy that expands interjurisdictional trade and positions Ontario's technology and expertise for global growth.

5. **STREAMLINED REGULATORY PROCESSES**
   Predictable, coordinated approvals that reduce duplication and accelerate timelines without compromising safety or environmental standards.

The Economic Imperative for Energy-Led Growth

Ontario's energy transition must be understood first and foremost as an economic growth strategy. In an era of intensifying global competition for capital, talent, and industrial investment, jurisdictions that can reliably deliver abundant, affordable, and low-carbon energy at scale will secure a decisive advantage. For Ontario, the expansion of energy infrastructure is not a cost centre to be managed, but a productivity-enhancing foundation that underpins competitiveness across the entire economy; from advanced manufacturing and critical minerals, to data centres, AI, life sciences, and export-oriented heavy industry. Energy availability, cost certainty, and system resilience increasingly determine where firms choose to locate, expand, and invest, especially in sectors where operating margins and capital intensity are tightly linked to power reliability and price predictability. Reliable, cost-competitive energy is a critical enabler of economic activity, competitiveness and productivity, because energy serves as a foundational input into production processes that cannot be easily substituted when expensive or intermittent.

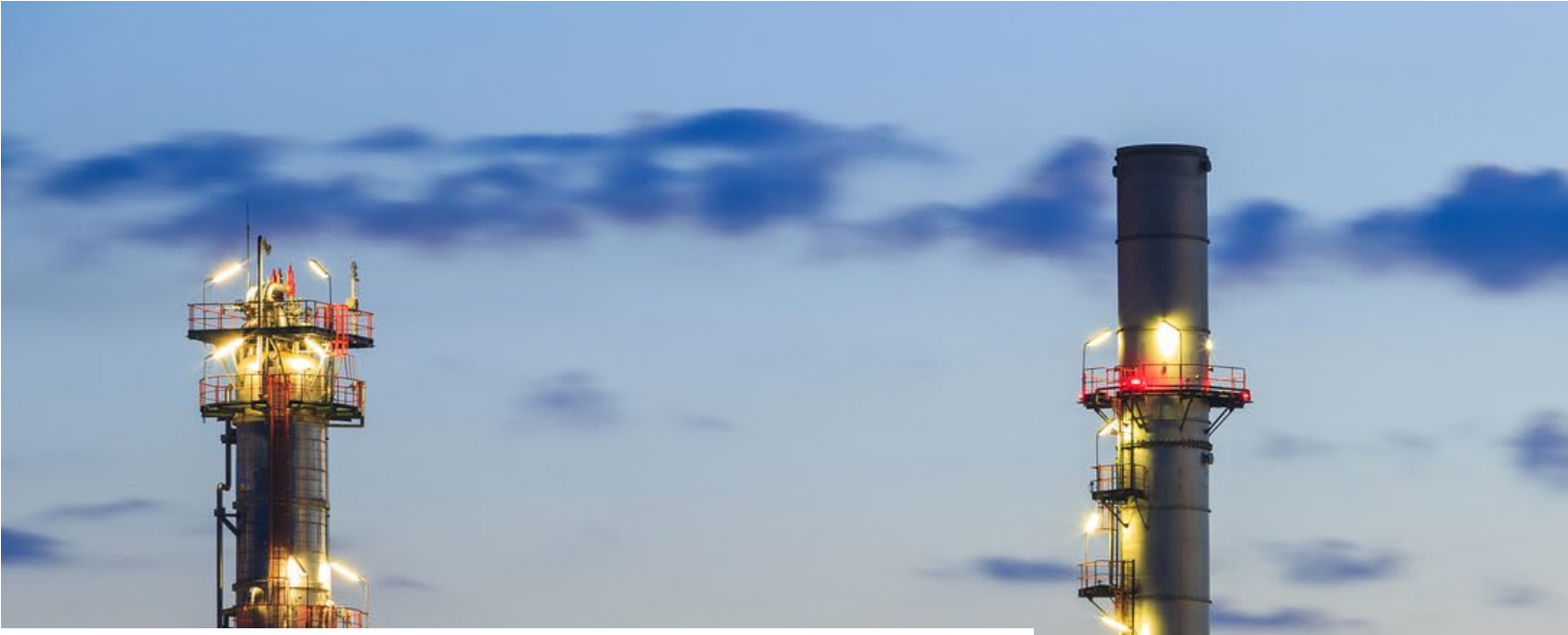
The jurisdictions that build energy capacity fastest, and integrate it most effectively with their industrial base, will shape the next generation of economic leadership.

In 2024 alone, energy investment and operations contributed to roughly $28.5 billion in GDP and over 176,000 jobs nationally.

The scale and coordination of Ontario's projected energy system build out as outlined in the IEP creates a rare opportunity to translate infrastructure investment into durable economic value for generations. By aligning energy expansion with industrial policy, Ontario can anchor domestic supply chains, deepen value-added manufacturing, and capture export opportunities in technology, services, and project delivery expertise. This approach supports higher productivity growth, strengthens trade resilience, and positions Ontario companies to compete in global markets where clean, reliable energy is fast becoming a prerequisite rather than a differentiator. Put simply, the jurisdictions that build energy capacity fastest, and integrate it most effectively with their industrial base, will shape the next generation of economic leadership. Ontario has the assets to lead; realizing that potential now depends on execution at speed and scale.

Energy infrastructure investment has a direct and measurable impact on productivity outcomes across the economy. Capital-intensive sectors, advanced manufacturing, clean fuels, steel, critical minerals processing, and digital infrastructure are increasingly constrained not by labour availability alone, but by access to high-capacity, reliable, and competitively priced energy. Where energy supply is predictable and scalable, companies deploy larger capital programs, adopt more advanced technologies, and achieve higher output per worker; energy infrastructure improves the efficiency and durability of physical capital itself. The OECD, in a review of major energy infrastructure projects globally, noted statistically significant positive impacts on productivity through capital deepening, scale, and competition effects.[1] Conversely, uncertainty in energy availability undermines capital formation by raising project hurdles and suppressing capital intensity, ultimately diverting investment to faster-moving jurisdictions with more predictable and investable energy systems. In practical terms, capital flows to jurisdictions that minimize regulatory, cost, and execution risk while maximizing risk-adjusted returns, making energy certainty a decisive competitive factor.

Corporate site selection decisions and export performance are now tightly coupled to energy system performance. Multinational manufacturers, data-driven industries, and energy-intensive exporters increasingly assess jurisdictions through a combined lens of energy reliability, carbon intensity, and long-term price stability. Ontario's clean grid and planned expansion provide a platform to attract anchor investments, deepen cluster effects, and increase export capacity in both goods and services. Investment and operation of energy infrastructure in Canada supports significant economic activity, in 2024 alone, energy investment and operations contributed to roughly $28.5 billion in GDP and over 176,000 jobs nationally.[2] The GDP multipliers associated with large-scale energy and industrial infrastructure through domestic procurement, skilled employment, induced investment, and export revenues, far exceed those of consumption-led growth, and when aligned with industrial policy, each dollar invested can generate sustained economic returns by strengthening supply chains, improving trade balances, and reinforcing Ontario's position as a competitive production jurisdiction rather than a price-taking consumer of global capital.



The Case for Urgent Action

Ontario's clean energy advantage is at risk without accelerated investment, predictable policy, and decisive coordination between governments, regulators, and industry. The IEP's success, and the province's broader economic competitiveness, depends on government action to:

1. **De-risk investment and extend financing certainty to major projects**
2. **Expand workforce and training pipelines to deliver concurrent infrastructure projects**
3. **Develop domestic industrial capacity to secure supply chains**
4. **Unlock new markets for Ontario's clean energy and expertise across North America and globally.**
5. **Modernize regulation to reduce duplication and accelerate permitting**

Failure to act decisively and expediently risks Ontario being deprioritized in global investment and supply chain order books, losing both project timelines and economic opportunity to faster-moving jurisdictions.

A Plan for Growth

1. Access to Capital: Enable Large-Scale Investment in Clean and Nuclear Energy

ISSUE

Large-scale clean and nuclear projects require significant upfront capital. These projects are high-cost and long-lived, the investment case depends on minimizing risk and burdens, while maximizing opportunities for return on investment. Ontario's buildout, however, is taking place in an environment of fragmented financing tools, uncompetitive tax structures and limited long-term revenue certainty. This serves to push investment towards jurisdictions with clearer, more stable frameworks.

RECOMMENDATIONS

- **Advance** the federal government's 2025 commitment to expand and extend eligibility for the Clean Electricity *Investment Tax Credits* for nuclear new build projects, including small modular reactors. These tax credits should align with incentives available for renewables, storage, and hydrogen.
- **Leverage** Ontario's *Building Ontario Fund* to co-invest, and de-risk priority projects through loan guarantees and risk-sharing tools.
- **Adopt** a *Contract-for-Difference* model, following the UK example, to provide predictable revenues, attract private capital, and reduce cost of financing.
- **Direct** the IESO to extend RFP contract terms to 40 years or more for large-scale and long-lived assets (nuclear, hydro, and storage). This would align Ontario with jurisdictions such as British Columbia and Quebec and lower financing costs, reduce ratepayer exposure, and make more projects commercially viable.
- **Direct** the IESO to use a flexible, risk-calibrated approach to financial-security requirements by:
  - accepting corporate bonds alongside letters of credit,
  - scaling insurance thresholds to project size and maturity, and
  - using shared risk-transfer mechanisms (e.g., public-private pools or captives) to preserve developer credit, lower carrying costs, and unlock institutional capital for faster infrastructure delivery.
- **Align** federal-provincial funding instruments to provide a single, predictable framework for energy investment. (e.g., Clean Technology Manufacturing and carbon capture, utilization and storage investment tax credits, Canada Infrastructure Bank)

POTENTIAL IMPACT

By lowering the cost of capital, these measures would improve the financial viability of large-scale energy projects and unlock access to both private and institutional investment that might otherwise remain untapped. That capital could support the concurrent development of Ontario's next generation of clean and nuclear energy infrastructure.

This would accelerate project timelines while maintaining rigorous standards for safety and reliability. Over time, it would help protect long-term affordability for ratepayers, strengthen grid resilience, and position Ontario to compete as a leader in North America's rapidly evolving energy landscape.

2. Access to Talent: Build the Energy Workforce of the Future

ISSUE

Ontario faces a critical shortage of skilled trades and specialized energy-sector workers. This is driving up labour costs, extending project timelines, and increasing reliance on subcontractors. Combined with productivity gaps and competition from other sectors, this workforce constraint threatens the timely and cost-effective delivery of large energy and infrastructure projects, putting the province's energy transition objectives at risk.

RECOMMENDATIONS

- **Develop** an *Ontario Energy Workforce Development Strategy* to forecast labour needs, align postsecondary programs, and optimize workforce utilization across project sequencing with concurrent capacity.
- **Expand** partnerships between postsecondary institutions and industry, such as the Ontario Tech–Humber collaboration (see page 21), to create integrated pipelines from engineering to trades.
- **Focus** immigration pathways like the Ontario Immigrant Nominee Program to attract experienced international trades and project expertise.
- **Invest** in productivity-enhancing technologies such as digital twinning, modular fabrication, and advanced project management, to offset workforce shortages.

POTENTIAL IMPACT

A coordinated workforce strategy would ensure that Ontario's energy sector has the skilled personnel it needs, reducing delays and stabilizing labour costs. By aligning training, recruitment, and retention with industry demand, Ontario can create thousands of high-quality jobs spanning construction, manufacturing, and operations. Over the longer term, a stronger workforce would expand energy capacity, support economic growth, and position Ontario as a hub for innovation and expertise in the clean and nuclear energy.

3. Access to New Markets: Build Ontario's Clean Energy Export Advantage

ISSUE

Ontario lacks both a coordinated strategy and supporting infrastructure, to export clean energy, technology, and expertise at scale. Fragmented governance, underutilized transmission capacity, and the absence of a dedicated energy trade and diplomacy function make it harder for investors and firms to navigate regulations, expand internationally, and fully realize the province's energy trade potential.

RECOMMENDATIONS

- **Develop** an *Ontario Energy Export Strategy* focused on electricity, nuclear technologies, energy services, oil and natural gas, and new pipeline capacity to access new international markets.
- **Establish** an *Ontario Energy Trade and Diplomacy Office* within the Ministry of Economic Development, Job Creation and Trade to coordinate export promotion, cross-border engagement, and interprovincial collaboration.
- **Expand** intertie capacity with Quebec, Manitoba, and U.S. jurisdictions to enable clean electricity trade.
- **Leverage** Ontario's nuclear advantage, in CANDU and SMR technology, isotopes, and large-scale energy project management — through coordinated export promotion and financing.

POTENTIAL IMPACT

By positioning itself as North America's leading supplier of clean energy and exporter of related technology and expertise, Ontario could unlock billions in new trade revenue and drive substantial industrial growth. Building on existing infrastructure, a skilled workforce, and innovative capabilities, the province can attract domestic and international partners, expand market access, and strengthen its competitive edge. This strategy would boost economic activity and job creation while reinforcing Ontario's reputation as a leader in the clean energy transition.

4. Supply Chain Readiness: Secure Domestic Capacity and Critical Inputs

ISSUE

Despite Ontario's clean energy leadership, critical gaps in manufacturing, logistics, and critical minerals processing threaten domestic project delivery, export growth, and long-term economic opportunity. Reliance on foreign suppliers increases exposure to geopolitical and logistical risks, creating material shortages, construction delays, rising costs, and lost domestic value capture.

RECOMMENDATIONS

- **Create** an *Ontario Clean Energy Supply Chain Strategy* to:
  - Map industrial capabilities and bottlenecks across manufacturing, logistics, and minerals processing;
  - Expand domestic fabrication for nuclear, battery, grid, pipeline and refining components;
  - Accelerate rare earth minerals refining and processing with Indigenous partnerships;
  - Modernize transportation corridors and logistics hubs to move large components efficiently.
- **Align** clean energy procurement with Ontario's steel, manufacturing, and mining sectors to strengthen industrial integration.

POTENTIAL IMPACT

Developing a secure, resilient supply chain would reduce Ontario's exposure to global disruptions by ensuring critical materials and components are available when and where they are needed. This resilience would shorten project timelines, reduce bottlenecks, and improve overall efficiency across construction, manufacturing, and operations. At the same time, investing in domestic capacity will create high-value industrial jobs, strengthen local expertise, and position Ontario as a hub for energy innovation and manufacturing excellence.

5. Streamlined Regulatory Processes: Enable Ontario to Build

ISSUE

Ontario's energy transformation is slowed by fragmented, duplicative, and protracted permitting and licensing processes, across multiple layers of government and regulatory authorities. This creates uncertainty for proponents and inflates costs. For example, unclear or unpredictable timelines for new nuclear technologies, including SMRs, deter investment and hinder timely deployment of critical energy infrastructure.

RECOMMENDATIONS

- **Implement** the new *federal (Bill C-5)* and *provincial (Bill 5)* single-window approval frameworks, ensuring coordination and accountability between levels of government.
- **Modernize** the *Canadian Nuclear Safety Commission (CNSC)* framework to include class-based licensing for standardized SMR designs and earlier Vendor Design Reviews (VDRs) to expedite project approval.
- **Digitize** the energy and resource project regulatory processes, improving transparency and predictability for proponents.

POTENTIAL IMPACT

Clear, predictable regulatory frameworks would reduce project lead times, potentially by several years, while giving private investors greater confidence to commit capital. Faster approvals and lower uncertainty would accelerate the development of critical energy infrastructure, supporting Ontario's goal of energy independence and long-term system resilience. Streamlined regulations can uphold rigorous safety and environmental standards, ensuring that the province's growth in clean and nuclear energy is both rapid and responsible.

Near-Term Calls to Action (2025–2027)

1. **Follow through on commitment in the 2025 Federal Budget** to introduce legislation for the Clean Electricity *Investment Tax Credits* to expand and extend their eligibility for nuclear new build projects, including SMRs

2. **Direct IESO to extend contract terms** to 40-years or more under upcoming Long Lead-Time RFPs, and to accept corporate bonds as well as letters of credit

3. **Accelerate implementation of Bill 5** through a fully operational single-window permitting office in 2026, to provide greater certainty for project proponents including with respect to pipelines, and large-scale energy generation, transmission, and storage projects

4. **Launch the *Ontario Clean Energy Supply Chain Strategy,*** *Ontario Energy Workforce Development Strategy*, and *Ontario Energy Export Strategy* by 2027 in partnership with industry.

The Context Behind our Recommendations

The question is about execution: what enabling conditions must be in place to translate the IEP into projects delivered on time and on budget?

Energy security is economic security. Ontario's IEP outlines the most ambitious expansion of the province's energy system in decades, requiring strategic investment, regulatory modernization, and innovation to deliver reliable, affordable, clean energy at scale.

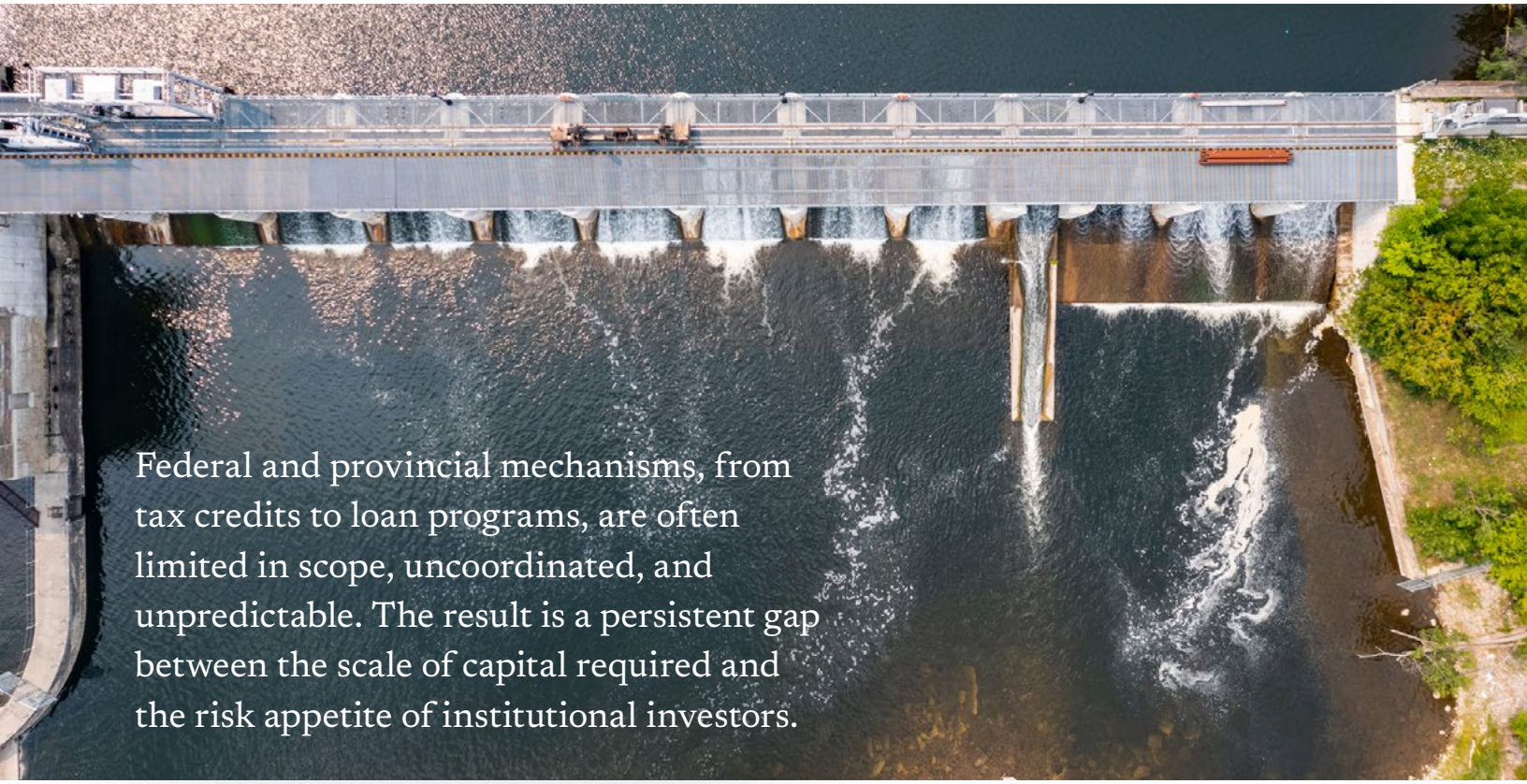
Ontario's annual electricity demand is projected to rise by 65% (262 TWh), driven by industrial expansion, electrification, data centres and AI infrastructure, and population growth. Meeting this demand will require not only new supply and infrastructure, but the conditions to deliver projects faster and at competitive cost, while maintaining safety, reliability and environmental standards.

Ontario's direction is clear: we are leading the largest expansion of nuclear energy on the continent, building the largest battery storage fleet in the country, and adding thousands of kilometres of new electricity transmission. Ontario is also collaborating with neighbouring provinces and the federal government on the development of pipelines, and coordinating planning across electricity, natural gas, and other energy types. The question is about execution: what enabling conditions must be in place to translate the IEP into projects delivered on time and on budget?

Unlocking the capital needed to drive these projects forward depends on a clear set of enabling conditions:

An Equation for Turning Energy into Ontario's Competitive Advantage

Figure 1. Elements of an Ontario Energy Industrial Strategy



Federal and provincial mechanisms, from tax credits to loan programs, are often limited in scope, uncoordinated, and unpredictable. The result is a persistent gap between the scale of capital required and the risk appetite of institutional investors.

Critical Enabling Conditions for Ontario's Energy Future

Grid-scale energy projects are complex, long-lived and capital intensive. They also rely on coordinated planning across governments, regulators, utilities, suppliers, and communities. Ontario's success will depend on building on the five enabling conditions above to strengthen delivery capacity and reduce risk.

The sections that follow outline the barriers and opportunities within each enabling condition and the actions required to secure Ontario's competitiveness, reliability, and economic growth.

Access to Capital

BARRIERS

Large-scale nuclear, storage and grid-scale projects require significant upfront capital, which can deter private investment. This challenge is compounded by Canada's lagging tax competitiveness, slow depreciation schedules and relatively short procurement contract tenures compared with peer jurisdictions.

These disadvantages are exacerbated by a fragmented public-financing landscape. Federal and provincial mechanisms, from tax credits to loan programs, are often limited in scope, uncoordinated, and unpredictable. The result is a persistent gap between the scale of capital required and the risk appetite of institutional investors.

Access to capital is also increasingly constrained by elevated financial-security and insurance requirements, particularly for smaller or first-of-a-kind developments. Heightened risk sensitivity in the Canadian insurance market, record climate-related losses, and limited availability of affordable coverage can materially increase project costs, delay timelines, or prevent projects from proceeding. This undermines Ontario's energy transition objectives.

Without deliberate interventions to de-risk projects, clarify long-term policy priorities, and streamline regulatory and contractual frameworks, Ontario risks losing critical capital flows to jurisdictions better positioned to provide stable, predictable investment environments.

OPPORTUNITIES

The global pool of risk capital available for large-scale energy and infrastructure projects is vast and highly mobile. Investors allocate capital to jurisdictions that offer regulatory certainty, policy stability, and credible risk-mitigation frameworks, because these conditions directly shape project viability and long-term returns.

Ontario can position itself as a leading destination for investment by strengthening the predictability of its regulatory environment, accelerating permitting processes, and providing clear, long-term policy signals on energy transition priorities. To bridge the gap between project financing needs and what institutional capital can provide, the province should leverage the Building Ontario Fund to invest in priority energy infrastructure. Ontario should also consider complementary instruments, including loan guarantees, public-private partnerships, risk-sharing tools, and Contract-for-Difference models for clean energy projects.

There is an opportunity to maximize long-term value for ratepayers by directing the IESO to review and amend the terms, conditions, and length of RFP contracts. The IESO should also adopt a more flexible, risk-calibrated approach to financial-security requirements. This includes accepting corporate bonds alongside letters of credit, tiered insurance thresholds scaled to project size and maturity, and shared risk-transfer mechanisms such as public-private insurance pools or captive structures. These measures would preserve developer credit capacity, reduce carrying costs, and unlock institutional capital, accelerating deployment of critical energy infrastructure while maintaining system reliability.

Finally, Ontario can improve project economics and enable more flexible partnership models by aligning provincial instruments with federal investment tax credits (including for large scale nuclear, SMRs and carbon capture, utilization and storage) and exploring revenue models that reduce investor risk. The 2025 Federal Budget included a commitment to introduce legislation for the *Clean Electricity Investment Tax Credit* to expand and extend eligibility to nuclear new-build projects, including SMRs, consistent with incentives available for renewables, storage, and hydrogen. With deliberate action to de-risk investment and provide durable policy certainty, Ontario can capture a greater share of global capital flows and accelerate the infrastructure needed to drive competitiveness, resilience, and sustainable economic growth.

CASE STUDIES

Innovation in Energy Project Financing

The UK's Contract-for-Difference model provides a compelling example of how governments can de-risk major energy investments by stabilizing project revenues and enabling competitive cost discovery, an approach with direct relevance to Ontario's energy ambitions. Under this framework, developers secure a fixed "strike price" for their electricity; when wholesale prices fall below that level, they receive a top-up, and when prices exceed it, they pay back the difference, ensuring both investor certainty and consumer protection. Competitive allocation rounds, structured across technology pots, have driven significant cost reductions in offshore wind, solar, and tidal energy, with the most recent Allocation Round 6 in 2024 awarding contracts for nearly 10 GW of capacity, including record levels of solar and tidal projects.[3]

Coupling long-term revenue certainty with supply chain and local content commitments mobilized private capital at scale and generates domestic industrial benefits, while ensuring affordability for consumers. For Ontario, the UK's experience underscores how contract-based financing tools can attract investment into nuclear, renewable, and emerging clean energy projects, while mitigating labour market constraints and supply chain risks that could otherwise impede the province's path to net zero.

Longer Contracts, Lower Costs

The IESO in Ontario has historically offered 20-year procurement contracts for new electricity generation projects, as exemplified by the Long-Term 2 Request for Proposals.[4] This duration aligns with the operational lifespans of many renewable energy technologies, such as wind and solar, and balances the need for long-term investment certainty with the flexibility to adapt to evolving energy demands and technological advancements. In contrast, jurisdictions such as British Columbia, Quebec, and Saskatchewan, often provide 30-year contracts for similar projects.[5] These extended terms are particularly advantageous for developers of capital-intensive and long-lived assets such as nuclear and hydroelectric facilities, as they offer greater revenue certainty over the project's lifetime, which can lead to lower financing costs.

More recently, the IESO has demonstrated important contractual flexibility by permitting contract terms of up to 40 years under its Long Lead-Time (LLT) procurement process. This approach improves project bankability for assets with long development timelines and multi-decade operating lives. By aligning contract lengths more closely with asset life, the IESO has enabled proponents to reduce financing risk, attract lower-cost capital, and advance large-scale infrastructure that would be difficult to support under shorter tenures.

The LLT framework illustrates how longer contract terms can ultimately reduce overall system costs for ratepayers by lowering financing premiums, improving project economics, and enabling the timely delivery of critical infrastructure needed to meet Ontario's future energy needs while maintaining affordability.

Insuring Ontario’s Energy Future: Balancing Risk and Access to Capital

Access to capital for major energy projects in Ontario can also be constrained by elevated insurance and financial-security requirements, which can inhibit smaller or first-of-a-kind developments. Under the IESO’s Long-Term 2 Energy Supply Request for Proposals (LT2(e-1) RFP procurement process project proponents are required to provide Completion and Performance Security of $20,000 per MW after commercial operation (Long-Term 2 RFP). Moreover, permitting the IESO to accept corporate bonds in addition to letters of credit would generate meaningful financial efficiencies across the procurement portfolio. Estimated savings of 1–2% annually—approximately $650,000 to $1 million per year for LT1 operational projects, with similar magnitude for LT2 during development—would reduce carrying costs without compromising project assurance. Beyond the direct savings, bonds are treated off-balance-sheet, preserving developer credit capacity and enabling more effective capital allocation across multiple projects. This flexibility would strengthen proponent balance sheets, support accelerated deployment, and enhance overall sector competitiveness.

At this time, the Canadian insurance market is experiencing heightened risk sensitivity with a recent survey finding that 64% of lenders and 58% of investors in renewable energy cited “access to capital” as a bottleneck strongly tied to insurance-related concerns.[6] Canadian insurers have also faced record insured losses such as the CA$8.5 billion in climate-related losses in 2024, further tightening underwriting and increasing premiums for energy infrastructure projects.[7] Combined, these financial-security requirements, insurance considerations and the evolving market conditions, can elevate project costs, delay timelines, or, in some cases, prevent projects from proceeding; particularly for assets located in natural-catastrophe-exposed areas where coverage pricing might materially impact project feasibility.

To address these challenges, pragmatic policy and financial solutions like tiered security and insurance thresholds, scaled to project size, technology maturity, and risk profile, would prevent smaller developers from being unduly burdened and ensure that limits reflect maximum foreseeable loss rather than theoretical worst-case exposure. For example, lenders commonly accept sublimits or modeled loss-based limits for perils such as flood or severe convective storms when full limits are unavailable or uneconomic, an approach which would be reasonable for the IESO to adopt. Shared risk-transfer mechanisms, such as public-private insurance pools or captive insurance programs for first-of-a-kind technologies, can reduce premiums and free up capital for deployment. Finally, stronger coordination among insurers, financiers, and the IESO to align performance-assurance requirements with realistic risk exposures would help unlock financing, accelerate project delivery, and support Ontario’s broader energy and industrial objectives.

Access to Talent

BARRIERS

The availability of a suitably skilled workforce to deliver large energy and infrastructure projects in Ontario is a material constraint on both cost and schedule. The province faces pronounced shortages in construction trades and specialized energy-sector roles. Those shortages push up unit labour costs through overtime premiums, increased use of subcontractors, and protracted recruiting timelines. Productivity shortfalls amplify those effects by increasing labour hours required per unit of output and raise the effective capital intensity of projects.

Recent labour studies and employer surveys show ongoing strain in Ontario's skilled trades market. BuildForce identifies persistent trade-specific gaps that jeopardize timely project delivery and raise contingency requirements.[8] A Conference Board of Canada report estimates that mismatches between skilled worker supply and demand cost the Canadian economy $2.5 billion in 2024, reflecting a significant economic cost and reduced productivity growth. The Board's own analysis, supported by Ernst & Young, projects an estimated workforce gap in Ontario's energy sector of 7,745 workers between 2025 and 2033, with shortfalls in trades and specialized technical occupations vital to transmission and distribution expansion and generation projects.

Ontario's tightening construction labour market is also creating significant upward pressure on wages and overtime costs, which are then absorbed into project bids through risk premiums, affecting project economics, investment decisions, and overall viability.[9] In fact, 58% of contractors anticipate difficulty accessing skilled labour, a consistent concern in recent years. Combined with lagging productivity growth relative to peers, tight labour supply and overtime-driven cost escalation materially increase schedule risk and the perceived cost of delivering large energy projects in Ontario.

Within this context, rapid concurrent projects scale-up as contemplated in the IEP, alongside competition from adjacent sectors including residential construction, infrastructure, and transportation, risks overloading available talent.

OPPORTUNITIES

Closing Ontario's workforce gap is fundamental to delivering the clean energy transition and advancing the province's energy infrastructure ambition with concurrent capacity. It will require a deliberate, multi-pronged strategy across training, immigration, and productivity.

Aligning postsecondary training programs with evolving sector needs, including curriculum design, will improve labour market readiness and receptivity for new graduates. By leveraging Ontario's engineering research strength, postsecondary programming, and institutional capacity, the province can build a sustainable workforce pipeline anchored in faster and more effective reskilling and upskilling.

In particular, governments, postsecondary institutions, and industry must jointly invest in accelerated training pathways for skilled trades and technical occupations critical to large-scale energy projects. This includes expanding apprenticeships, micro-credentials, and fast-track bridging programs that align training pipelines with project timelines. Ontario should also use immigration policy, including a more strategically focused Ontario Immigrant Nominee Program, to attract experienced workers in high-demand occupations such as welders, electricians, and project managers. Credential recognition processes should be streamlined so talent can be deployed quickly, and across jurisdictions.

Industry also has a major opportunity to offset labour shortages through productivity-enhancing practices that reduce total hours per unit of output. This includes modular construction, digital twinning, advanced prefabrication, and stronger project management discipline.

Creating stable, long-term project pipelines through clear policy commitments would provide the certainty training institutions, unions, and employers need to invest in capacity at scale. When multiple energy projects proceed concurrently — generation, transmission, distribution, and storage — labour-use optimization becomes a critical enabling condition for schedule, cost control, and workforce sustainability. Developing an *Ontario Energy Workforce Development Strategy* that centralizes labour-demand forecasts, maps project timelines and critical paths, and enables cross-project mobility through modular workforce models would help avoid bottlenecks and better align project needs with workforce availability and training pipelines.

Ultimately, delivering the ambitious vision of the IEP requires a more resilient labour market capable of building the critical energy infrastructure Ontario needs to sustain competitiveness, reliability, and economic growth.

When multiple energy projects proceed concurrently – generation, transmission, and storage – labour-use optimization becomes a critical enabling condition for schedule, cost control, and workforce sustainability.

CASE STUDIES

Collaborative Workforce Development

Ontario Tech University and Humber Polytechnic have embarked on a new strategic partnership aimed at addressing the critical need for a skilled workforce in Ontario's nuclear energy sector. This collaboration combines Ontario Tech's leadership in nuclear engineering education with Humber's expertise in trades training, delivering clean energy programming to fulfill the nuclear energy supply chain, and applied research. This creates a comprehensive talent and skills pipeline to support Canada and Ontario's role as a global energy and nuclear superpower.

Ontario Tech University offers Canada's only accredited undergraduate Nuclear Engineering program, recognized by the Canadian Engineering Accreditation Board. The program provides students with a robust foundation in nuclear power plant engineering, encompassing areas such as nuclear plant design, radiation protection, nuclear chemistry, and materials science. Students engage in hands-on learning through state-of-the-art facilities, including the Nuclear Simulation Laboratory and the Environmental Effects of Radiation Laboratory, which are integral to the Energy Research Centre—a $45.4-million facility funded by the Government of Canada and Ontario. Humber Polytechnic complements this academic foundation by providing specialized training in skilled trades essential to the nuclear energy sector. Through its School of Clean Energy, Humber offers programs in nuclear operations, support for SMRs, and other clean energy infrastructure roles. These programs focus on practical skills in areas such as welding, pipefitting, and boilermaking, which are critical for the construction and maintenance of nuclear facilities.

By integrating nuclear engineering and skilled trades and aligning programs with industry demands, graduates will be prepared to design, build, operate and sustain our nuclear sector. As the demand for nuclear expertise accelerates nationally and globally, this partnership positions Ontario to lead by building the workforce strategy required to sustain Canada's nuclear energy security and economic advantage.

Proactive Industry Collaboration

The partnership between Bruce Power and Ontario Power Generation (OPG) exemplifies a model of coordinated project planning aimed at optimizing the deployment of skilled labor and mitigating potential workforce constraints. By staggering the refurbishment timelines of their respective nuclear facilities, the two entities have effectively reduced the risk of labour shortages that could arise from overlapping demands for specialized trades such as boilermakers and millwrights. This approach not only ensures a steady and qualified workforce but also enhances the efficiency and safety of the refurbishment processes.

In a parallel effort to bolster expertise in sustainable infrastructure, Alstom, AtkinsRéalis, Polytechnique Montréal, and Ontario Tech University have entered into a partnership to develop a specialized training program focused on sustainable rail mobility. This initiative addresses the growing demand for skilled professionals in the rail and public transit sectors, particularly in the context of decarbonization and the expansion of green mobility solutions. The program will offer targeted educational opportunities, including internships and collaborative projects, fostering a pipeline of talent equipped to meet the evolving challenges of sustainable transportation.

By aligning educational initiatives with industry requirements, these partnerships contribute to the immediate success of major projects and also lay the groundwork for a resilient and adaptable workforce capable of sustaining long-term growth and innovation.

Employer-Led Workforce Innovation for Ontario's Energy Sector: The Case for TPM

The U.S. Chamber of Commerce Foundation's Talent Pipeline Management (TPM)[10] model is an employer-led, data-driven workforce strategy used across dozens of U.S. jurisdictions, and now in Alberta,[11] to address persistent skills shortages, improve retention, and align training systems with tangible labour-market needs. Unlike traditional supply-driven approaches, TPM positions employers as the end-customers of the talent system, using shared demand forecasts, competency-based role definitions, and performance metrics to co-design training with educators. TPM has been applied effectively in high-demand sectors such as energy, advanced manufacturing, and logistics, demonstrating measurable improvements in vacancy reduction and worker readiness.

Adopting a TPM-style initiative in Ontario would provide a credible, tested pathway to address emerging workforce pressures in the province's energy sector, including retirements, competition for specialized technical roles, and rapidly evolving skill needs related to grid modernization, distributed energy resources, and clean-energy technologies. A coordinated employer consortium, supported by real-time labour-market data, standardized competency frameworks, and structured collaboration with postsecondary institutions, would strengthen talent pipelines, improve productivity, and enhance Ontario's investment competitiveness. Given demonstrated results in Alberta and leading U.S. energy jurisdictions, TPM offers a high-impact, replicable model that could help Ontario build a more resilient, demand-aligned energy workforce.

The Toronto Region Board of Trade, through its Business Council of Toronto (BCT), is exploring an energy sector TPM pilot in Ontario. As a convener with strong ties to employers, educators and policy makers, the BCT aims to create a flagship demonstration project for Ontario's energy sector, establishing a durable model for demand-driven workforce development that can scale across the province's broader clean-energy and infrastructure economy.

Building a Skills-Ready Energy Workforce: Ontario's Micro-Credential Advantage

As Ontario's energy sector confronts rapid technological change, driven by AI, automation, digitization, and increasingly complex system operations, global competitiveness is becoming inseparable from workforce adaptability. Sustaining productivity and innovation requires more than capital investment; it demands continuous upskilling of the existing workforce.[12] Ontario offers a practical, scalable model through the provincially supported Ontario Micro-credentials Portal, which provides employers access to more than 2,000 high-quality, labour-market-aligned courses delivered by postsecondary institutions across the province. These rapid, targeted training programs enable companies to respond quickly to skills shortages that otherwise translate into lost revenue, unfilled roles, and delayed adoption of new technologies. The portal's employer-facing interface allows firms to source programming across institutions, identify graduates with job-ready skills, and navigate offerings through a "Sectors in Focus" lens aligned with priority areas of the provincial economy; including energy, advanced manufacturing, and digital infrastructure.

This model illustrates a broader opportunity for employers, postsecondary institutions, and governments to collaborate on workforce development.

Too often, Canadian firms default to bespoke in-house training due to friction in partnering with educational institutions[13], while postsecondary providers underutilize continuing education as a strategic growth and revenue stream. Micro-credentials, short, labour market relevant, competency-based courses, have proven effective in complementing workers' existing skill sets, particularly when designed in close partnership with employers and aligned to real-time labour market needs.[14] Beyond upskilling, similar partnerships can support reskilling at scale, enabling workers exiting declining roles to transition into high-demand occupations critical to the energy transition.

With targeted policy support, including incentives that encourage employer participation, Ontario can position its postsecondary system as a central pillar of energy-sector competitiveness and labour resilience.

An Ontario Clean Energy Export Strategy would position the province to capture billions in revenue, support substantial job creation, and expand its influence in the North American energy transition.

Access to New Markets

BARRIERS

Despite Ontario's clean, reliable and affordable energy mix, the lack of a coordinated strategy to export clean energy, and the associated technology, expertise, and services, is a critical gap in Ontario's energy and economic framework.

Ontario's minimal transmission capacity connecting it to neighbouring provinces or to U.S. markets (e.g., Michigan, New York) is limited and underutilized, constrained by aging infrastructure and regulatory barriers. Governance and investment attraction efforts are also fragmented, with no single-window for investment or trade. This makes it difficult for investors and Ontario firms, particularly in nuclear, SMRs, storage, grid software, and demand-response technologies, to navigate a complex regulatory environment, fragmented utilities landscape, access market intelligence, or scale internationally. The absence of a dedicated energy trade and diplomacy function further limits Ontario's ability to engage priority markets, coordinate cross-border investment, and support export development.

OPPORTUNITIES

An **Ontario Clean Energy Export Strategy** would position the province to capture billions in revenue, support substantial job creation, and expand its influence in the North American energy transition. The strategy should identify priority export markets (e.g., Quebec for balancing, U.S. Northeast and Midwest for decarbonization and reliability), and be paired with targeted infrastructure investments, including expanding intertie capacity with neighbouring jurisdictions.

The strategy should also strengthen market-entry supports for Ontario-based suppliers. This can leverage existing advanced manufacturing sector serving adjacent demand in steel, auto, and automation, to scale exports in services, component parts and solutions for nuclear, storage, grid software and digital services, DERs and demand-response technologies. Together, these efforts would help Ontario firms capture growing market share while reinforcing the province's reputation as a reliable exporter of energy technologies and expertise.

A core pillar should be the creation of an **Ontario Energy Trade and Diplomacy Office** within the Ministry of Economic Development, Job Creation and Trade. This office would serve as a single front door for investment, including foreign direct investment, consolidating functions currently spread across multiple ministries, agencies, utilities, and regulators. A single-window model would provide two advantages:

1. **Clearer navigation** of Ontario's regulatory environment, including environmental assessment processes, interconnection rules, federal–provincial interfaces, and cross-border trade approvals.

2. **Stronger investment attraction and market development,** by providing investors, vendors, and project developers with a coordinated point of entry to Ontario's energy ecosystem.

The construction of just four SMRs at OPG's Darlington site could contribute $15.3 billion to Canada's GDP over 65 years and sustain approximately 2,000 jobs annually during that period.

Other jurisdictions already use similar arrangements to accelerate clean-energy exports, attract foreign direct investment, and simplify complex regulatory navigation. Examples include:

- The U.S. Department of Energy's Office of International Affairs coordinates bilateral energy cooperation, supports U.S. technology export, and facilitates cross-border energy trade and regulatory problem-solving.[15]
- The UK's Department for Energy Security and Net Zero (DESNZ) maintains dedicated energy diplomacy units and works closely with the UK's Office for Investment to support clean-energy FDI attraction and export growth.[16]
- The Danish Energy Agency houses a Global Cooperation unit, which works closely with the country's foreign-affairs ministry and embassies to export Danish energy-transition expertise, technologies (e.g., renewables, efficiency, grid integration).[17]
- The German Energy Solutions Initiative - coordinated under the Federal Ministry for Economic Affairs and Climate Action,[18] is explicitly designed to help German SMEs in renewable energy, energy efficiency, smart grids, storage and other clean-tech sectors to enter foreign markets.

Ontario can replicate and tailor elements of these models to improve policy alignment, regulatory clarity, and proactive investment facilitation across electricity, nuclear, and clean-technology sectors. The office could also cultivate relationships with provincial, U.S. state and federal energy offices, regional transmission operators, Indigenous partners, and international buyers of Ontario technology.

CASE STUDIES

Exporting Ontario's Nuclear Expertise to the World

Ontario's leadership in CANDU and SMR technologies strengthens its position in the global nuclear market, with significant export potential and benefits for the province's industrial base. CANDU reactors, renowned for their use of natural uranium, production of isotopes, and unique refuelling feature while operating, have been successfully deployed in countries such as South Korea, Romania, and China, with 34 units currently operational worldwide.[19] Simultaneously, the global market for SMRs is projected to reach a conservative estimate of $150 billion annually between 2030 and 2040, encompassing applications in electricity generation, remote mining operations, island nations, and off-grid communities according to recent analysis by the Canadian Nuclear Association.[20]

The export of CANDU and SMR technologies presents a dual opportunity for Ontario: enhancing its position in the global clean energy sector while bolstering its domestic supply chain. A study by the Conference Board of Canada indicates that the construction of just four SMRs at OPG's Darlington site could contribute $38.5 billion to Canada's GDP over 65 years and sustain approximately 3,800 jobs annually during that period.[21] Bruce Power and OPG have demonstrated the ability to deliver nuclear refurbishment and major components replacement programs to extend the operating life of critical assets, on time and on budget, as part of a multi-billion highly sophisticated energy megaproject. The Conference Board of Canada estimates that the full refurbishment project at Pickering alone would create 30,500 jobs per year while contributing $41.6 billion to Canada's GDP over 11 years, with approximately 90 per cent of spending happening inside the province.[22]

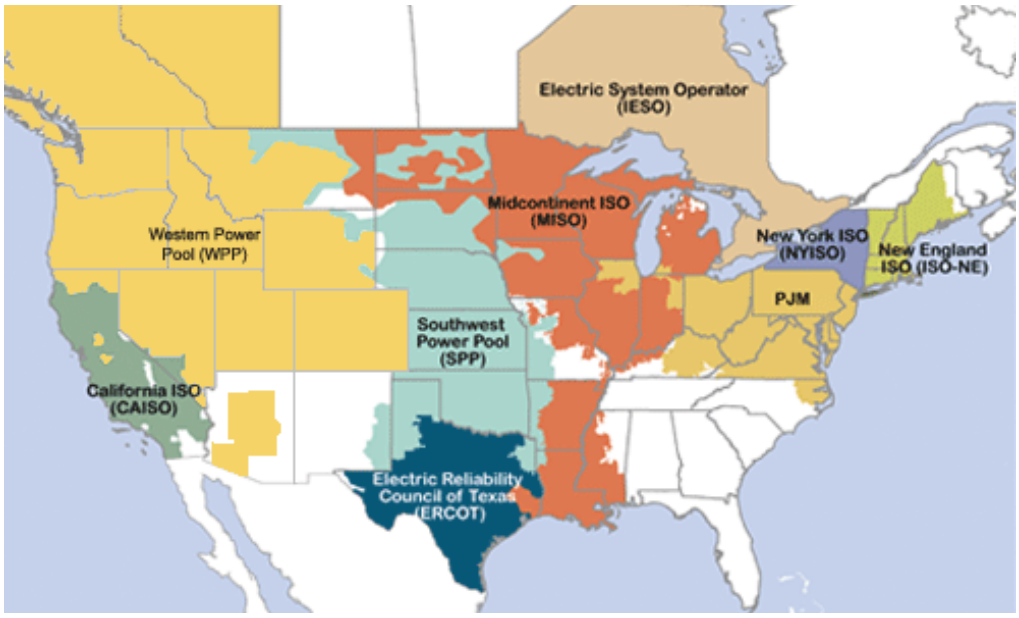
To capitalize on these opportunities, Ontario must develop a comprehensive **Clean Energy Export Strategy** that integrates the province's steel industry and advanced manufacturing sectors. By leveraging existing industrial capabilities, Ontario can enhance its competitiveness in the global nuclear market, ensuring the timely delivery of high-quality components and fostering innovation in clean energy technologies.

The Commercial Opportunity in Being a Good Neighbour

Ontario's strategic position within North America's electricity grid offers substantial opportunities for clean energy exports, particularly to the United States, as well as energy trade opportunities within Confederation by leveraging its interconnections with neighboring provinces such as Quebec and Manitoba. These interties not only facilitate the export of surplus electricity but also enhance grid stability and support the integration of renewable energy sources. The province maintains robust electricity trade agreements with Quebec, encompassing energy, capacity, and cycling components. These agreements utilize existing intertie and transmission system capabilities, ensuring efficient and reliable electricity exchanges between the two provinces. Hydro-Québec operates 15 interconnections with neighboring markets, including Ontario, New Brunswick, New York State, and New England, with a total export capacity of 7,974 MW.[23] In 2022, Quebec exported more electricity to the U.S. than any other province, with gross exports of 22.6 TWh.[24] Manitoba Hydro also plays a significant role in electricity exports, primarily to the United States. In 2023, Manitoba's electricity producers generated 33.3 TWh, with net electricity exported to the U.S. totaling 5.2 TWh, or 16% of production.[25] Revenue from power exports accounted for more than 22% of Manitoba Hydro's total electric revenue between 2010 and 2019.[26]

Ontario's electricity exports play a pivotal role in meeting the energy demands of neighboring jurisdictions, particularly through its interconnections with the New York Independent System Operator (NYISO) and Independent System Operator New England (ISO-NE). In 2024, New York imported 7.7 terawatt-hours (TWh) of electricity from Canada, more than any other U.S. state, with Ontario accounting for a significant portion of this supply.[27] These imports are facilitated by NYISO's interties with Ontario's Independent Electricity System Operator (IESO), allowing for up to 2,500 megawatts (MW) of electricity imports.[28] Similarly, ISO-NE leverages Canadian electricity imports to meet its load requirements. Over the past five years, Canadian imports have served approximately 11% of New England's electricity demand.[29] ISO-NE's interconnections with Canada, including the Phase II Interconnection with Hydro-Québec, have a total transfer capability of about 3,225 MW.[30] These imports are crucial during periods of high demand, such as the winter months, when Canadian electricity can account for up to 14% of ISO-NE's electricity supply.

Collectively, these interconnections and export activities underscore the importance of cross-border electricity trade in meeting regional energy demands, supporting economic growth, and advancing clean energy objectives. By strengthening and expanding these interties, Ontario can enhance its role as a key player in the North American energy landscape, promoting energy security and economic resilience.



Regional Transmission Organizations in North America[31]

This map shows the geographic footprint of Regional Transmission Organizations in North America, which coordinate and operate multi-jurisdiction electric grids to promote reliability, efficiency, and system resiliency.

Carney on Pipelines: "it's going to happen"

As Ontario positions itself to become a true energy superpower, the potential to expand Canada's conventional energy infrastructure, particularly in oil and natural gas, remains a critical lever for economic growth, job creation, and global trade competitiveness. For companies operating in the province, including leaders such as Enbridge and Imperial Oil, realizing this potential will require a coordinated approach that addresses both regulatory certainty and infrastructure constraints.

The upstream oil & gas sector in Canada contributed over 3 % of GDP in 2024 and directly employed roughly 140,000 workers; when indirect and induced jobs are included the sector supports nearly 900,000 jobs nationwide.[32] A recent analysis suggests that building new export-capable pipelines, for example those that would allow Canada to ship oil and gas to non-U.S. markets, could unlock as much as CAD $38 billion in incremental export value. [33]

The *Canada–Alberta Memorandum of Understanding* (MOU), signed on November 27, 2025, establishes a federal-provincial partnership to expand energy and infrastructure development including building one or more private-sector financed pipelines, expanding electricity generation, strengthening transmission interties with neighbouring provinces, and supporting the Pathways carbon capture, utilization and storage (CCUS) project. Recent statements from Prime Minister Carney suggest the government is actively engaging with Alberta on new pipeline proposals and advancing carbon-capture initiatives;[34] within the MOU the Federal government has committed to suspend certain planned regulations (e.g. the Oil and Gas Emissions Cap, and specific Clean Electricity Regulations in Alberta) in favour of a new cooperating carbon-pricing regime under Alberta's existing emissions framework (the TIER system), with a minimum effective credit price of $130/tonne.[35] This is a very promising signal to industry.

However, long-standing legislative barriers including the *Impact Assessment Act* (formerly Bill C-69) and the *Oil Tanker Moratorium Act* (Bill C-48) continue to impede timely and impactful investment and development. Moving forward, clarity from the federal government on permitting frameworks, alignment on inter-provincial and Indigenous consultations, and streamlined approvals via the new Major Projects Office, as well as amendments to the *Impact Assessment Act* and West Coast tanker ban, will be essential to unlock billions of dollars in private-sector capital, secure access to Asian and other overseas markets, and ensure that Canada's oil and gas sector can contribute meaningfully to national prosperity while meeting evolving climate and investment-risk objectives.

Supply Chain Readiness

BARRIERS

Despite Ontario's leadership in clean energy, the province faces significant supply chain gaps in manufacturing, logistics, and rare earth minerals processing. These gaps could undermine domestic deployment at scale, slow export growth, and limit economic opportunity.

Amid uncertainty in traditional economic relationships, unprecedented bottlenecks have resulted in material shortages, construction delays, rising costs, lost manufacturing jobs and weakened domestic economic value capture. Growing dependence on foreign suppliers leaves Ontario exposed to geopolitical and logistical risks, and other major disruptions.

OPPORTUNITIES

The province should develop an **Ontario Clean Energy Supply Chain Strategy**, informed by a comprehensive supply chain audit to map current capacity, bottlenecks and critical vulnerabilities. The strategy should:

- **Expand domestic fabrication and value capture** (e.g., nuclear components, renewable energy system assembly, battery manufacturing, and energy storage systems), including through advanced manufacturing clusters (e.g., Durham, Bruce, Windsor).
- **Accelerate critical minerals refining and processing** infrastructure, including Indigenous-led mining and processing partnerships.
- **Modernize key transportation corridors** (roads, rail, ports) and develop centralized industrial clusters and logistics hubs to move large components efficiently and support energy megaprojects.
- **Strengthen innovation-to-commercialization pathways** through funded pilot and demonstration projects (e.g., advanced reactor materials, batteries, hydrogen) and public procurement as a market signal to de-risk deployment and grow Ontario-based cleantech and energy companies.

A robust domestic supply chain is central to this effort, ensuring timely access to critical components such as gas turbines, generator sets, nuclear reactor components, solar panels, and energy storage systems. To strengthen Ontario's energy export potential, the province should also develop a comprehensive industrial capabilities and ecosystem map, highlighting local companies, technologies, and expertise across the full value chain. This would enable Ontario firms to identify peers, partners, and suppliers, foster collaboration, knowledge sharing, and domestic supply chain localization, while supporting coordinated market entry and scaling of homegrown clean-energy solutions.

By aligning clean energy procurement with Ontario's steel industry and advanced manufacturing sectors, the province can leverage existing industrial capacity to fabricate turbines, modular reactor components, high-performance steel for transmission infrastructure, and precision-engineered parts. This approach makes energy policy a driver of industrial policy: coordinated investment, procurement, and workforce development can stimulate domestic manufacturing, attract private capital, and secure long-term economic benefits.

The electrification of transportation, expansion of data centres, and growth of hydrogen and small modular reactor technologies will increase demand for advanced manufacturing. This creates opportunities for local content requirements and strategic partnerships between energy developers and Ontario-based manufacturers. Integrating steel producers, fabrication facilities, and manufacturing clusters into an Ontario Clean Energy Supply Chain Strategy will help meet near-term energy needs while strengthening industrial competitiveness and positioning the province for global leadership in clean energy innovation.

By proactively linking energy procurement, industrial capacity, and workforce planning, Ontario can mitigate global supply chain risk, reduce project costs, and accelerate deployment timelines, while strengthening our manufacturing base, creating high-value jobs, and embedding energy leadership within broader economic policy.

CASE STUDIES

Strategically leveraging investment to ensure value is captured in Ontario

Ontario's supply chain readiness extends beyond traditional fabrication with the opportunity to capture significant economic value by developing advanced supply-chain capacity in intelligent energy technologies ranging from smart electrification hardware, software-defined system architectures, and AI-powered smart grid analytics. Canada's clean-energy and energy-efficiency sectors are already showing strong job-growth potential, with one recent report projecting Canada's clean energy jobs rising from 484,000 in 2025 to 2.44 million by 2050.[36] Meanwhile, Ontario's 800,000 manufacturing workforce stands ready for transition into high-value segments of the energy sector's supply chain.[37] Global firms with a footprint in the province, alongside domestic innovators, illustrate the potential for Ontario to capture greater value in these high-growth segments. Schneider Electric Canada's opening of a 130,000 sqft distribution centre in Halton Hills highlights how a global energy-technology firm is deepening its Ontario operations to support local supply-chain resilience and job creation.[38]

Ontario's nuclear refurbishment programs, including the multi-year Darlington Nuclear Refurbishment Project (DNRP) and Bruce Power Major Component Replacement (MCR) projects, illustrate how large-scale energy investments can drive domestic economic benefits. Together, these nuclear assets provide 60% of Ontario's electricity, and more than 90% of project expenditures are reinvested within the province, supporting high-value jobs, economic growth, and industrial capacity.[39] The collaborative approach between OPG and Bruce Power, sharing lessons, resources, tooling, and equipment has yielded efficiencies, reduced costs, and mitigated execution risks, providing a model for scaling both conventional and advanced energy supply chains locally.

Strategically leveraging these energy investments alongside opportunities in intelligent energy technologies, and other components, can expand Ontario's domestic capabilities in fabrication, software development, AI-enabled analytics, and energy project delivery. By aligning public procurement, innovation funding, and workforce development with industrial strategy, Ontario can capture high-value jobs, strengthen export potential, and solidify its role as a global hub for next-generation energy solutions, ensuring that energy policy drives both industrial modernization and long-term economic competitiveness.

Global manufacturers are currently experiencing backlogs of up to seven years for key equipment, including large-scale gas turbines, with high demand from both conventional utilities and independent power producers.

The Opportunity Costs of Being Left Behind on the Order Book

The accelerating lead times for critical energy infrastructure, including gas turbines and generator sets, pose an immediate challenge to Ontario's ability to meet growing electricity demand driven by data centres, electrification, and industrial expansion. Industry analyses indicate that global manufacturers are currently experiencing backlogs of up to seven years for key equipment, including large-scale gas turbines, with high demand from both conventional utilities and independent power producers.[40] These backlogs are driven by surging demand and constrained production capacities.

Early commitment to procurement is essential to secure the necessary equipment; without decisive planning, Ontario risks being deprioritized in global order books, delaying projects critical to supporting data centre growth and overall provincial energy needs.

MaRS Connect: Enabling Market Access for Ontario Cleantech

MaRS Connect is a curated digital platform that links Canada's leading technology startups with innovation adopters, investors, and ecosystem partners. Developed by MaRS Discovery District, the largest urban innovation hub in North America, the platform provides direct access to vetted Canadian ventures, including 300+ cleantech companies offering solutions across energy, grid modernization, and decarbonization.

The platform addresses a core challenge of strong innovation performance but weaker pathways to commercialization and scaled deployment. By improving visibility of local suppliers and reducing friction between innovators and buyers, MaRS Connect helps translate regional R&D strength into real market demand.

In practice, MaRS Connect supports a *Buy Canadian* approach by enabling utilities, governments, and large organizations to confidently identify and procure Ontario-based clean technologies. This aligns directly with the Board of Trade's recommendations to use coordinated demand and green procurement to de-risk commercialization, strengthen domestic supply chains, and anchor high-growth firms in the Toronto region as Ontario's clean energy economy scales.

Learn more: https://app.marsdd.com/

Streamlined Regulatory Processes

BARRIERS

Ontario's energy transformation, particularly new nuclear (including SMRs), long-range transmission, and grid-scale storage, is being hindered by fragmented, duplicative, and protracted permitting processes. Jurisdictional overlap across federal, provincial, and municipal levels creates uncertainty, inflates costs, and deters investment.

In nuclear, the Canadian Nuclear Safety Commission is internationally respected for safety rigor, but it does not currently offer clear or predictable timelines for licensing and regulatory review of new technologies, including SMRs. This uncertainty can delay deployment and weaken investment confidence.

OPPORTUNITIES

Both the federal government (Bill C-5) and the Ontario government (Bill 5) have introduced legislation intended to streamline approvals, reduce duplicative jurisdictional reviews through a single-window model, and accelerate timelines for critical energy and other infrastructure projects.[41] The impact will ultimately depend on implementation: how the federal Major Projects Office and provincial Permitting Coordinator apply the frameworks, the quality of multi-stakeholder consultation, and whether the process sustains investor confidence during planning and review.

In parallel, the federal government should modernize the CNSC regulatory framework to enable faster, more predictable licensing for new nuclear technologies while maintaining safety standards.[42] This should include: introducing class-based licensing for standardized reactor designs deployed across multiple sites; expanding Vendor Design Reviews (VDRs) earlier in the project lifecycle, including partial reviews (e.g., safety case and fuel cycle) and structured feedback loops with proponents; and increasing CNSC capacity and resourcing, including advanced reactor specialists and a digital licensing platform that supports application tracking, document sharing, and stakeholder engagement.[43] Earlier and more scalable VDRs help de-risk technology adoption by identifying regulatory issues before site-specific applications are submitted.

In the Board's recent report *Beyond Red Tape: Regulate for Growth*, a key recommendation is adoption of a single-window compliance and approvals model to reduce jurisdictional fragmentation and improve the experience for businesses seeking permits and licences. For Ontario's energy sector, particularly capital-intensive infrastructure, nuclear and SMR deployment, cross-border electricity trade, and advanced technology exports, a single-window model would lower regulatory risk, shorten lead times, and improve predictability. Over time, clearer timelines and approvals pathways would strengthen Ontario's attractiveness to domestic and foreign investors, support timely project execution, and help position Ontario and Canada as leaders in deployable and exportable energy technologies.

CASE STUDIES

Optimize Regulatory Frameworks without Compromise

The U.S. Nuclear Regulatory Commission (NRC) has pioneered the adoption of streamlined licensing processes for Small Modular Reactors, notably through its Design Certification and Early Site Permit (ESP) frameworks.[44] The Design Certification process allows for the approval of a nuclear power plant design independent of a specific site application, providing a standardized approach that can expedite subsequent licensing phases. Similarly, the ESP process enables the approval of a site for nuclear power facilities before a construction permit or combined license application is submitted, addressing site safety, environmental protection, and emergency preparedness issues early in the planning stages. These approaches not only reduce regulatory uncertainty but also enhance the efficiency of the licensing process by resolving key issues upfront.

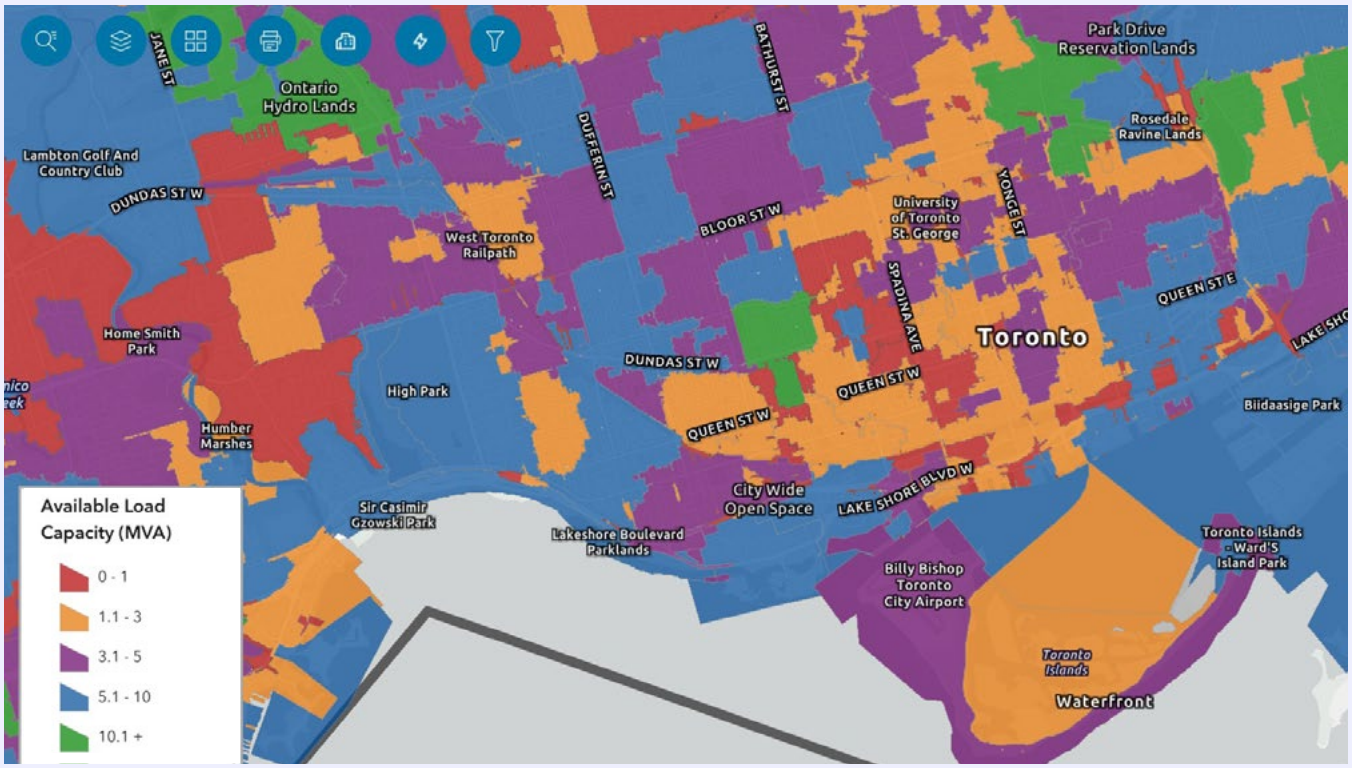
The CNSC has recognized the importance of adapting its regulatory framework to support the deployment of SMRs. Through its Small Modular Reactor Readiness project, the CNSC has identified four key pillars: regulatory predictability and clarity, building capacity and capability, supporting policy and coordinating shared responsibility, and international collaboration.[45] These initiatives aim to optimize the CNSC's readiness to license and regulate SMRs, ensuring that safety standards are maintained while facilitating innovation.

To further enhance the regulatory process, the CNSC should consider integrating best practices from the NRC's Design Certification and ESP approaches. Implementing a design certification process would allow for the approval of SMR designs independent of specific sites, providing a standardized framework that could expedite subsequent licensing phases. Additionally, adopting an ESP-like approach could enable the approval of potential sites for SMR deployment before specific reactor designs are selected, addressing site-specific issues early in the planning process. By incorporating these strategies, the CNSC could streamline the regulatory process, reduce uncertainty for developers, and accelerate the deployment of SMRs in Ontario as Distributed Energy Resources (DERs) co-located with mining and industrial sites.

Enabling Distributed Energy for a Competitive Ontario

Integration of Distributed Energy Resources (DERs) considerations into planning, investment, and market processes is essential to supporting affordable, secure, reliable and clean energy that enables the province's economic growth.

The Ontario Energy Board (OEB) is advancing initiatives that help electricity distributors adopt cost effective technologies and modernize the distribution grid, including new tools and regulatory changes that strengthen DER deployment.[46]



CENTRALIZED CAPACITY INFORMATION MAP

Expected to launch in early 2026, the OEB's Centralized Capacity Information Map (CCIM) is an important online tool that provides users with a high-level overview of where available load and DER capacity exists across the province.

By improving early-stage site screening, enhancing comparability and reducing development risk through clear, data-driven information, this tool will help unlock the value of DERs, lower barriers to participation and support smarter investments in energy infrastructure.

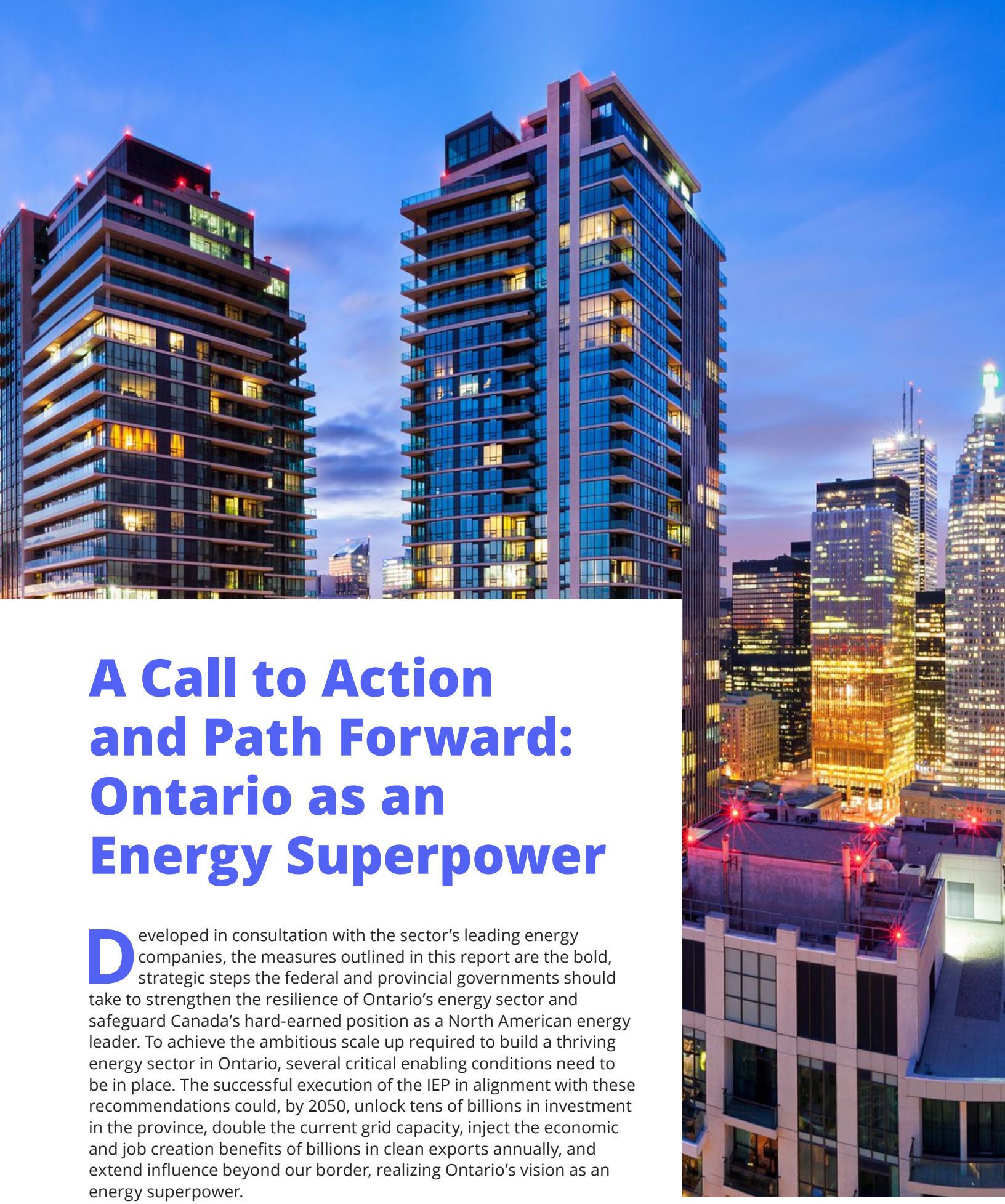
The CCIM will help developers and project proponents make faster, better informed investment decisions, leading to efficient scaling of clean energy services, enabling targeted grid investments and helping to drive economic development.

Distribution System Code and DER Connection Procedures Amendments

The OEB recently introduced amendments to the Distribution System Code and Distributed Energy Resources Connection Procedures intended to lower barriers to the connection of DERs, by reducing costs and improving timelines, fairness and consistency in connection processes.

Key changes, which take effect May 1, 2026, include increasing the maximum capacity limit for micro-embedded generation, revising insurance requirements, removing a capacity allocation exemption, ensuring consistency in the connection impact assessment timeline and broadening technical standard requirements.

Taken together, these initiatives signal a meaningful shift toward a more flexible, data-driven and innovation-ready electricity sector. By equipping distributors, developers and communities with clear information, streamlined processes and modernized regulatory tools, the OEB is laying the groundwork for a system that can better harness the full potential of DERs. This continued focus on enabling cost-effective DER integration will help ensure Ontario's energy future remains affordable, secure, reliable and clean, enabling long-term economic growth across the province.



A Call to Action and Path Forward: Ontario as an Energy Superpower

Developed in consultation with the sector's leading energy companies, the measures outlined in this report are the bold, strategic steps the federal and provincial governments should take to strengthen the resilience of Ontario's energy sector and safeguard Canada's hard-earned position as a North American energy leader. To achieve the ambitious scale up required to build a thriving energy sector in Ontario, several critical enabling conditions need to be in place. The successful execution of the IEP in alignment with these recommendations could, by 2050, unlock tens of billions in investment in the province, double the current grid capacity, inject the economic and job creation benefits of billions in clean exports annually, and extend influence beyond our border, realizing Ontario's vision as an energy superpower.

A summary of key recommendations:

1 **ACCESS TO CAPITAL**
Leverage the Building Ontario Fund and financial instruments (e.g. loan guarantees, contract-for-difference models, investment tax credits) to de-risk investment opportunities, and consider IESO direction to permit 40 years or more contracts bidding in RFPs.

2 **ACCESS TO TALENT**
Develop and implement an *Ontario Energy Workforce Development Strategy*, to optimize labour utilization and project delivery sequencing, concurrent capacity, and align sector needs to training pipelines with industry-PSE partnerships.

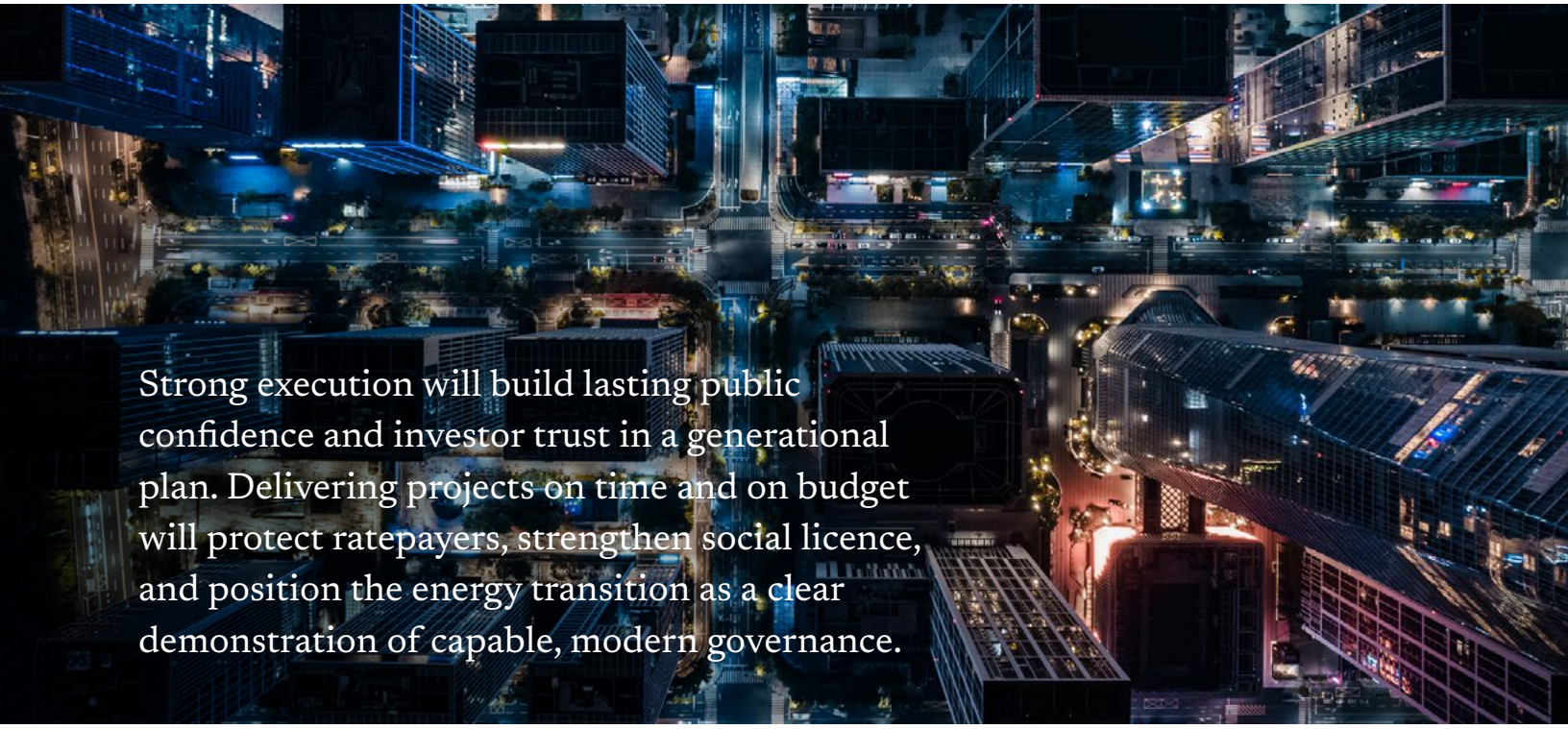
3 **ACCESS TO NEW MARKETS**
Develop and implement an *Ontario Energy Export Strategy*, and establish an *Ontario Energy Trade and Diplomacy Office* within the Ontario Ministry of Economic Development, Job Creation and Trade to advocate for the province's interests in capturing global market share.

4 **SUPPLY CHAIN READINESS**
Develop and implement an *Ontario Energy Supply Chain Strategy* to expand domestic fabrication and critical rare earth minerals refining and processing capacity, strengthen innovation-to-commercialization pathways for Made-in-Ontario IP, and invest in modernized logistics hubs and transportation corridors to support energy megaprojects.

5 **STREAMLINED REGULATORY PROCESSES**
Implement the Federal and Provincial single-window streamlined approvals process with accelerated project timelines, and modernize the CNSC regulatory framework to introduce class-based licensing for standardized reactor designs and expand pre-licensing VDRs earlier in project lifecycles.

By reducing red tape, attracting capital investment, modernizing regulations, and building the energy workforce of the future with high-quality jobs, Ontario will become a global leader.

As we navigate a rapidly changing global economic landscape, these measures reflect a timely recognition that **energy security is economic security.** By protecting and investing in Ontario's energy infrastructure, the province can reduce its vulnerability to disruptions, limit its reliance on imports, and assert greater control over the future of its energy transition. By reducing red tape, attracting capital investment, modernizing regulations, and building the energy workforce of the future with high-quality jobs, Ontario will become a global leader. Energy policy can determine the success of generations. If we want to protect affordability, ensure energy security, and drive long-term prosperity, the successful implementation of the IEP is the way forward. Its optimal execution will unlock new opportunities for our workers and economy. In order to realize this growth opportunity and associated benefits, the existing approaches need to level up and transform to a more systemic and integrated ecosystem of aggregated project and investment opportunities.



Strong execution will build lasting public confidence and investor trust in a generational plan. Delivering projects on time and on budget will protect ratepayers, strengthen social licence, and position the energy transition as a clear demonstration of capable, modern governance.

Securing Ontario's Energy Future

Ontario has all the ingredients to become a global energy superpower; clean, affordable and reliable generation, an advanced manufacturing base, and a skilled workforce. But realizing this vision requires decisive policy leadership, public-private coordination, and regulatory modernization.

During the COVID-19 pandemic, Ontario recognized that extraordinary challenges require extraordinary execution capacity. The province appointed General Rick Hillier to coordinate logistics, workforce deployment, and system-wide execution.[47] This decision was not symbolic; it reflected an understanding that complex, time-critical operations demand clear authority, disciplined planning, and relentless follow-through. That same lesson applies today. The Integrated Energy Plan is not merely a collection of projects, but a synchronized, multi-decade mobilization of capital, talent, supply chains, and institutions. Delivering it successfully will require strong central coordination, rigorous sequencing, and the ability to manage multiple large-scale, interdependent projects concurrently, often under asymmetric conditions where labour, materials, and global supply chains are constrained.

Just as importantly, execution discipline must extend beyond steel and concrete in the ground to the human systems that make delivery possible. Ontario's energy build will test the province's ability to forecast labour needs accurately, build and deploy talent pipelines at scale, and project-manage across jurisdictions, utilities, and regulators without fragmentation or delay.

Strong execution will build lasting public confidence and investor trust in a generational plan. Delivering projects on time and on budget will protect ratepayers, strengthen social licence, and position the energy transition as a clear demonstration of capable, modern governance. Ultimately, *Energy for Generations* will be judged not by the scale of its ambition, but by Ontario's ability to deliver.

The actions in this report define Ontario's path to unlocking tens of billions in investment, doubling grid capacity by 2050, and securing its position as North America's clean energy hub. This is not simply an economic strategy, it is the foundation of a more competitive, resilient, and export driven province. **Ontario's moment to lead is now.**

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