

**SEVEN KEY
RECOMMENDATIONS FOR**

CANADA'S RENEWED NATIONAL AI STRATEGY

**The Information and Communications
Technology Council's submission to the
Government of Canada's public consultation
to renew Canada's AI strategy**

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ABOUT ICTC

The Information and Communications Technology Council (ICTC) is a national, neutral, not-for-profit centre of expertise whose mission is to strengthen Canada's digital advantage in the global economy. For more than 30 years, we have provided forward-looking research, practical policy advice, and innovative, industry-informed capacity development solutions for individuals, businesses, and the public sector. Comprised of a national team of experts from coast to coast, our goal is to ensure that technology is used to drive economic growth and innovation, and that Canada's workforce remains globally competitive.

INTRODUCTION

On September 25, 2025, the Government of Canada announced a 30-day national sprint from October 1 to October 31, 2025, to launch an AI Strategy Task Force and public consultation period to help shape Canada's approach to artificial intelligence (AI). Public feedback and stakeholder engagement conducted throughout this period will be used to inform a renewed national strategy to position Canada as a global leader in AI.

ICTC submitted a set of seven key recommendations to the public consultation, conducted by the Ministry of Innovation, Science, and Economic Development (ISED). Building on 30 years of experience and a national team of experts from coast to coast, ICTC takes a practical, research-informed approach to ensure that technology is used to drive economic growth, foster innovation, and ensure that Canada's workforce remains globally competitive. The seven recommendations contained in ICTC's submission are strategically linked to support a robust and resilient national AI strategy that benefits all Canadians and helps to strengthen Canada's digital advantage in the global economy.

SEVEN KEY RECOMMENDATIONS

- › **Recommendation 1:** Canada needs a clear, visionary National AI Talent Strategy to help Canadians of all ages and educational backgrounds—from K12 students to early and mid-career workers to business leaders—learn how to use and work with AI effectively. The strategy should be agile, flexible, and industry-informed, and based on real-time labour market data to prepare Canadians for the jobs and skills of tomorrow.
- › **Recommendation 2:** Canada should leverage its trusted relationships with international allies—particularly the United States and the European Union—to align regulatory approaches and jointly develop strategic sovereign AI capabilities, ensuring its competitiveness and security in the global AI landscape.
- › **Recommendation 3:** Canada should prioritize inclusive research and development by investing in collaborative innovation initiatives with like-minded international partners, focusing on AI research, talent mobility, and commercialization to enhance global competitiveness and foster shared technological advancements.
- › **Recommendation 4:** Canada should leverage planned defence infrastructure spending as a strategic lever to develop secure, domestic, and sovereign AI compute capacity. By adopting a dual-purpose approach to Canada's AI compute capabilities, Canada can simultaneously accelerate Canadian AI innovation and secure its AI capabilities from foreign threats.
- › **Recommendation 5:** Canada should align public procurement strategies with regional economic development programs to better connect its world-class domestic AI research capabilities with industry adoption, thereby accelerating commercialization and strengthening national innovation capacity.
- › **Recommendation 6:** Canada should modernize its AI governance framework by enacting a proportionate, risk-based legislative approach that promotes regulatory interoperability with international partners, while safeguarding innovation, public trust, and responsible AI development.
- › **Recommendation 7:** Canada must accelerate its clean energy generation capabilities to power the exponential increase in demand generated by AI compute infrastructure, prioritizing major projects of national interest, partnerships with provincial governments, innovative energy solutions with large-scale commercialization potential, and regulatory frameworks prioritizing transparency and incentivizing energy efficiency.

RECOMMENDATION 1:

ESTABLISH A NATIONAL AI TALENT STRATEGY FOR ALL CANADIANS

Canada needs a clear, visionary National AI Talent Strategy to help Canadians of all ages and educational backgrounds—from K-12 students to early and mid-career workers to business leaders—learn how to use and work with AI. The strategy should be agile, flexible, and industry-engaged, and informed by real-time labour market data to prepare Canadians for the jobs and skills of tomorrow.

Canada is at a pivotal moment in the global AI race. While other nations rapidly scale AI adoption, Canada risks falling behind. In Q3 2025, only 12.2% of Canadian businesses reported using AI, compared to 25% in the U.S., and over 50% in China and India. This lag is compounded by a national deficit in AI literacy and training. A recent KPMG study ranked Canada 28th out of 30 advanced economies in AI training and literacy, and 25th in trust in AI systems.¹ Meanwhile, a 2025 ICTC study found that although 77% of workers are allowed to use AI tools at work, only 37% have received formal training.²

This gap between AI access and AI readiness poses profound risks to Canada's competitiveness, productivity, and economic resilience. It also threatens Canada's ability to achieve sovereign AI capabilities—a key pillar of its AI ambitions and industrial strategy. Efforts to build sovereign AI infrastructure—such as high-performance computing (HPC), advanced AI research, and domestic chip engineering—require specialized technical talent that Canada struggles to cultivate and retain. ICTC's 2025 report, *Canada's AI Ecosystem*, cautions that Canada's domestic talent pipeline is strained and global competition for AI expertise is intensifying.³ Without a parallel national workforce development strategy, Canada risks relying on foreign expertise to maintain sovereign systems, thereby undermining the very sovereignty it seeks to establish.

To secure Canada's future in the global AI economy, Canada must invest in broad-based, inclusive AI literacy and skills development. This means building a National AI Talent Strategy that reaches every part of society—from K-12 students to mid-career professionals and business leaders.

› **Embedding AI in Public Education:** AI literacy must start early. Canada should integrate AI concepts into K-12 education, encompassing essential topics such as digital citizenship, career education, and responsible technology use. This will help students understand how AI affects their lives and future careers and prepare them to use these tools safely and effectively.

Public education systems must be equipped to deliver foundational AI knowledge, including hands-on experience with common AI tools. These programs should also teach critical thinking about AI's limitations, biases, and ethical implications. By investing early in Canada's AI literacy, Canada can ensure its future workforce is prepared for an AI-led future.

› **Inclusive and Equitable Talent Development:** Canada's diverse workforce is a key strength that must be nurtured. Companies with diverse workforces are more innovative and more profitable than less diverse companies.⁴ Canada's National AI Talent Strategy must ensure that all Canadians have equitable and inclusive access to high-quality and trustworthy AI education and training.

Canada's National AI Talent Strategy must be developed in consultation with diverse stakeholder groups, training institutions, and workforce development practitioners who have expertise serving the full spectrum of Canadian society, including Indigenous youth and workers, persons living with disabilities, newcomers, women, and more. The National AI Talent Strategy should embed support for Indigenous-led training institutions and incorporate diverse and culturally grounded perspectives into curriculum design.

¹ "Trust, attitudes and use of artificial intelligence: A global study 2025 – Canadian insights," KPMG, 2025, <https://assets.kpmg.com/content/dam/kpmg/ca/pdf/2025/07/trust-in-ai-en-report.pdf>.

² Mairead Matthews and Faun Rice, "Automation and the Future of Tech Careers in Canada: What Students Need to Know," Information and Communications Technology Council (ICTC), 2024, <https://ictc-ctic.ca/reports/automation-and-the-future-of-tech-careers-in-canada>.

³ Todd Legere, Sheldon Lopez, and Noah Lubendo, "Canada's AI Ecosystem: A Brief Overview of In-Demand Skills and Trends," Information and Communications Technology Council (ICTC), February 2025, <https://ictc-ctic.ca/reports/canadas-ai-ecosystem-a-brief-overview-of-indemand-skills-and-trends>.

⁴ "Diversity matters even more: The case for holistic impact," McKinsey & Company, December 5, 2023, <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-matters-even-more-the-case-for-holistic-impact>.

To minimize barriers to access, Canada can leverage novel program models such as micro-credentials, work-integrated learning for students, and/or paid professional development training for graduates, workers, and business leaders to enable rapid adaptation to technological change. These models enable agile, flexible, and self-directed approaches to learning and development that can be tailored to specific needs.

Additionally, Canada must address the systemic and infrastructural barriers to equitable AI education and training, including universal broadband access, to ensure everyone has access to AI training and education.⁵

› **Grounding National AI Talent in Real-Time**

Labour Market Data: Canada's National AI Talent Strategy must be grounded in real-time labour market information (LMI) capable of tracking and reporting on emerging skills gaps and occupational requirements. Real-time LMI will enable the National AI Talent Strategy to be flexible and iterative, enabling it to pivot responsively to new workforce trends and technologies and proactively identify gaps in service.

Canada's ability to lead in the global AI economy hinges not only on technological infrastructure but on the strength and inclusivity of its talent pipeline. Without substantial investments to futureproof Canada's AI workforce, Canada risks building infrastructure without the talent to support it—undermining its sovereignty and long-term competitiveness. A robust National AI Talent Strategy will ensure that Canadians are not just passive users of AI, but active contributors to its development and governance. Without decisive action, Canada risks forfeiting its competitive edge and compromising its sovereignty in a domain that will define the future of innovation, security, and economic prosperity.

RECOMMENDATION 2:

SECURE CANADA'S AI POSITION THROUGH TRUSTED PARTNERSHIPS

Canada should leverage its trusted relationships with international allies—particularly the United States and the European Union—to adopt a model of “strategic sovereignty” that aligns regulatory approaches while simultaneously developing sovereign AI capabilities, ensuring its competitiveness and security in the global AI landscape.

Canada must leverage its global brand as a trustworthy, innovative, and ethical partner to establish alignment between divergent regulatory regimes and establish strategic sovereign AI capabilities. Canada's leadership in responsible AI development, exemplified by its membership in the Global Partnership on Artificial Intelligence, positions it uniquely to mediate between innovation-driven and rights-based approaches to AI governance.⁶ By fostering interoperability across regulatory frameworks, Canada can facilitate cross-border innovation while safeguarding democratic values and digital sovereignty.

Rather than emulating U.S. deregulation or mirroring EU protectionism, Canada should pursue a model of strategic interoperability: aligning with both regimes where beneficial, while preserving sovereign control over key AI assets. This approach enables Canada to act as a transatlantic bridge, leveraging its bilingual, regulatory, and trade diplomacy strengths to harmonize standards and facilitate cross-border innovation between major world economies.

ICTC's *AI Sovereignty and Economic Growth* report emphasizes that Canada's AI ecosystem thrives on international collaboration and cautions against protectionist policies that could isolate Canada from global research networks, talent flows, and innovation diffusion.⁷ Sovereignty does not mean isolation. Instead, Canada should adopt a “strategic sovereignty” model—retaining control over critical infrastructure such as compute, data, and models, while remaining deeply connected to global AI ecosystems.

⁵ Namir Anani and Erik Henningsmoen, “A Roadmap for Canada's Digital Economy to 2030,” Information and Communications Technology Council (ICTC), April 2025, <https://ictc-ctic.ca/reports/a-roadmap-for-canadas-digital-economy-to-2030>.

⁶ “About the Global Partnership on Artificial Intelligence (GPAI),” Organisation for Economic Co-operation and Development (OECD), <https://oecd.ai/en/about/about-gpai>.

⁷ Amaya Garmendia, Todd Legere, and Noah Lubendo, “AI Sovereignty and Economic Growth: Strengthening Transatlantic Leadership Between the EU and Canada,” AI, Data and Robotics Association (Adra) and Information and Communications Technology Council (ICTC), 2025, <https://ictc-ctic.ca/reports/ai-sovereignty-and-economic-growth>.

To balance sovereignty with multilateral cooperation, Canada should adopt a **Dual-Track AI Strategy**:

- › **Establish a Transatlantic Bridge Role:** Canada can position itself as a policy and trade intermediary between U.S. and EU AI standards. As highlighted in ICTC's Digital Roadmap to 2030, this gives Canada a competitive edge in international standard-setting.⁸
- › **Align Regulatory Principles with the EU:** Canada should adopt transparency, explainability, and human-rights safeguards inspired by the EU AI Act. Participation in EU programs like Horizon Europe and alignment with compute certification frameworks will enhance data trust and interoperability, strengthening Canada's international credibility.
- › **Align Innovation and Investment with the U.S.:** Canada must maintain open innovation ties with U.S. universities, startups, and compute providers, especially for early-stage research and commercialization. Building North American AI supply chain resilience through partnerships with trusted U.S. semiconductor and cloud providers will support an integrated but autonomous model.
- › **Secure the Semiconductor and Energy Backbone:** Sovereignty also depends on domestic chip design, fabrication partnerships, and clean energy supply. Canada should accelerate partnerships with cutting-edge postsecondary institutions, research facilities, and semiconductor industry members to boost its domestic semiconductor capabilities.

Adopting a Dual-Track AI Strategy at the intersection of U.S. and EU regulatory regimes will optimize Canada's capacity to participate in a globally connected AI future. A dual-track approach allows Canada to harmonize innovation and governance, build resilient partnerships across borders, and establish its domestic AI infrastructure. As AI continues to redefine economic and geopolitical landscapes, Canada's ability to mediate between regulatory regimes, invest in sovereign capabilities, and remain a trusted collaborator between nations will be an asset in securing long-term competitiveness and digital sovereignty.

RECOMMENDATION 3:

LEAD WITH INCLUSIVE INNOVATION AND STRATEGIC COLLABORATION

Canada should prioritize inclusive research and development by investing in collaborative innovation initiatives with like-minded international partners, focusing on AI research, talent mobility, and commercialization to enhance global competitiveness and foster shared technological advancements.

Canada's National AI Strategy should prioritize inclusive innovation and strategic international collaboration with like-minded nations. ICTC emphasizes that AI sovereignty must be pursued alongside inclusivity to ensure Canada's technological leadership is grounded in social responsibility and global cooperation.

To secure its position in the global digital economy, Canada must strengthen domestic capabilities while deepening international partnerships. Specific actions could include:

- › **Targeted Investment to Support Underrepresented Innovators:** Domestically, Canada should support the inclusion of underrepresented innovators—including Indigenous communities, rural regions, and SMEs—through funding, digital adoption, and capacity-building initiatives. These efforts will ensure that AI development reflects Canada's diversity and unlocks innovation across all sectors and regions.
- › **Establish multilateral partnerships with democratic allies:** Canada should collaborate with democratic allies committed to ethical AI, leveraging mechanisms such as Horizon Europe to advance key areas such as joint research, talent mobility, and commercialization.
- › **Establish a national research consortium and streamline talent mobility frameworks:** Enhancing research talent mobility has the potential to catalyze innovation and economic growth.⁹ Research exchanges are linked to increased commercialization and knowledge transfer, while initiatives such as joint funding programs, bilateral AI testbeds, and mutual recognition of credentials can address labour shortages and foster cross-border collaboration.¹⁰

⁸ Namir Anani and Erik Henningsmoen, "A Roadmap for Canada's Digital Economy to 2030," Information and Communications Technology Council (ICTC), April 2025, <https://ictc-ctic.ca/reports/a-roadmap-for-canadas-digital-economy-to-2030>.

⁹ Ibid.

¹⁰ House of Commons Standing Committee on Industry and Technology (Parliament of Canada), "Intellectual Property Regime in Canada: Report of the Standing Committee on Industry, Science and Technology," 41st Parliament, 1st Session, Report No. 3, March 2013, <https://www.ourcommons.ca/documentviewer/en/41-1/INDU/report-3/page-42>, 42.

Real-time labour market data should also inform skills development and mobility pathways, aligning them with innovation and workforce priorities across jurisdictions.

- › **Accelerate R&D and commercialization:** Canada's highly educated workforce and world-class academic institutions position it as a valuable partner in global R&D. To capitalize on this advantage, Canada should modernize technology transfer offices, incentivize commercialization, and implement policies that retain and protect intellectual property.

RECOMMENDATION 4:

SCALE CANADA'S SOVEREIGN AI COMPUTE CAPACITY

Canada should leverage planned defence infrastructure spending as a strategic lever to develop secure, domestic, and sovereign AI compute capacity. By adopting a dual-purpose approach to Canada's AI compute capabilities, Canada can simultaneously accelerate Canadian AI innovation and secure its AI capabilities from foreign threats.

The global race for AI leadership is intensifying, and sovereign AI compute capacity is emerging as a critical asset in securing national interests. For Canada, investing in domestic AI infrastructure is not only essential for economic growth and innovation—it is a strategic imperative for national security, defence readiness, and technological sovereignty.

AI technology requires significant computing infrastructure to carry out AI compute tasks—such as creating new AI models (training) and using AI to complete tasks (inference). Peer economies, such as the U.S. and EU, are leveraging significant public and private sector investments to develop sovereign AI compute capabilities. The EU's InvestAI initiative will invest €20 billion (C\$32.3 billion) in funding for the construction of four large-scale AI data centres,

which will mobilize a collective total of €200 billion (C\$322.9 billion) towards AI compute capacity.¹¹

The Stargate Project in the U.S. will mobilize USD \$500 billion (C\$700.8 billion) to preserve American technological leadership in AI technology and build a network of up to 20 large AI data centres.¹² In July 2025, the United States further cemented its commitment to domestic AI compute infrastructure by releasing its AI action plan, *Winning the AI Race: America's AI Action Plan*. Among the 90 policy actions outlined, the AI action plan includes provisions for the rapid development of AI data centres throughout the United States, including high-security data centres for national security and military use.¹³

Canada has begun taking strides to develop its AI compute capacity. The *Canadian Sovereign AI Compute Strategy*, launched in December 2024, is set to invest C\$2 billion over five years towards sovereign AI compute capabilities, including C\$700 million to support Canada's AI ecosystem, C\$1 billion to build public supercomputing infrastructure, and C\$300 million towards an AI Compute Access Fund for Canadian researchers and innovators.¹⁴

However, Canada must further develop its sovereign AI compute strategy with additional funding to remain globally competitive. To remain competitive and secure, Canada must scale its sovereign AI compute strategy by leveraging defence spending. The federal government's commitment to increase defence spending to 5% of GDP by 2035—including 1.5% earmarked for defence-related infrastructure—presents a timely opportunity to fund the expansion of domestic AI compute capacity.¹⁵

Canada can look to other nations for examples of how AI compute capacity directly contributes to defence infrastructure. In 2025, Belgium put forward a plan to build €1 billion (C\$1.6 billion) worth of military data centres at several secure locations across the country.¹⁶ The facilities will be crucial for essential military operations, including processing real-time data from satellites, drones, and combat

11 European Commission (European Union), "EU launches InvestAI initiative to mobilise €200 billion of investment in artificial intelligence (press release)," February 11, 2025, https://luxembourg.representation.ec.europa.eu/actualites-et-evenements/actualites/eu-launches-investai-initiative-mobilise-eu200-billion-investment-artificial-intelligence-2025-02-11_en.

12 OpenAI, "Announcing the Stargate Project," January 21, 2025, <https://openai.com/index/announcing-the-stargate-project/>.

13 "Winning the Race: America's AI Action Plan," Office of the President of the United States of America, July 2025, <https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf>.

14 Innovation, Science and Economic Development Canada (Government of Canada), "Canadian Sovereign AI Compute Strategy," last update May 6, 2025, <https://ised-isde.canada.ca/site/ised/en/canadian-sovereign-ai-compute-strategy>.

15 See: Erik Henningsmoen, "Establishing a Dual-use, Military-Civilian AI Compute Capability for Canada," Canadian Science Policy Centre, October 2025, <https://sciencepolicy.ca/posts/establishing-a-dual-use-military-civilian-ai-compute-capability-for-canada/>.

16 "Belgium to invest €1 billion in military data centres," The Brussels Times, August 14, 2025, <https://www.brusselstimes.com/1703102/belgium-plans-to-invest-e1-billion-in-military-data-centres>.

units. Similarly, Australia announced a plan to invest AU\$2 billion (C\$1.8 billion) to build three data centres in partnership with Amazon Web Services to host military and intelligence information.¹⁷ Both countries articulate these investments as critical to establishing AI sovereignty.

Investing strategically in AI compute infrastructure is critical from both an economic and security perspective. Global alliances are being renegotiated, while ongoing trade disputes with historical economic allies and partners, as well as increased technological decoupling between major economies, have generated instability in Canada's international relationships.

ICTC recommends that Canada preserve and develop its AI compute capacity by leveraging defence spending to advance AI compute infrastructure. High-performance AI compute enables the training of sophisticated AI models for military applications, such as surveillance and threat detection, intelligence fusion and battlefield management, as well as supporting future autonomous systems, including unmanned aerial vehicles and drones. Building Canadian sovereign AI compute capacity will also be an essential component of strengthening national cybersecurity efforts, enabling real-time threat detection, malware analysis, and counter-disinformation efforts. Investing in domestic AI compute infrastructure also ensures technological sovereignty, reducing reliance on foreign cloud services that may be subject to competing regulations and securing sensitive data using domestic infrastructure.

Boosting Canada's AI compute capabilities as part of this defence funding increase will help preserve Canada's sovereignty, autonomy, and national resilience. Enhanced spending also enables domestic innovations in defence technologies, presenting capability enhancements for Canada's military and commercial export opportunities for the Canadian defence sector.

Beyond improving Canada's defence posture, such investments stimulate innovation, foster public-

private collaboration, and strengthen the national workforce, creating broad economic and strategic benefits. To accelerate the buildout of sovereign AI compute capacity, Canada could use policy levers such as public-private investment programs, grants, and tax incentives, and allowing flow-through shares, targeted toward Canadian AI compute infrastructure providers to build domestic AI compute capacity.¹⁸

RECOMMENDATION 5:

BRIDGE THE GAP BETWEEN AI RESEARCH EXCELLENCE AND INDUSTRIAL APPLICATION

Canada should align public procurement strategies with regional economic development programs to better connect its world-class domestic AI research capabilities with industry adoption, thereby accelerating commercialization and strengthening national innovation capacity.

Canada is home to a world-class AI research ecosystem, led by major research universities such as the University of Toronto, University of Waterloo, University of British Columbia, and University of Alberta. It is also home to three world-leading national AI research institutes: Alberta Machine Intelligence Institute (Amii) in Edmonton, Mila – Quebec AI Institute in Montreal, and Vector Institute in Toronto. These research-intensive universities and national institutes have played a leading role in advancing scientific breakthroughs in AI.

Furthermore, Canada's smaller regional universities and polytechnics make significant contributions to operationalizing AI technology and applying it in different fields.¹⁹ As a result, Canada leads the G7 in AI research output per capita—a significant competitive advantage that Canada must capitalize on to accelerate its economic performance.²⁰

Despite Canada's AI research capabilities, AI adoption among Canadian industry lags behind other countries. According to Statistics Canada, as of

¹⁷ Nick Bonyhady, "Aussie spies to get \$2b top-secret Amazon data centre," Australian Financial Review, July 4, 2024, <https://www.afr.com/technology/aussie-spies-to-get-2b-top-secret-amazon-data-centre-20240704-p5jr1o>.

¹⁸ Erik Henningsmoen, Noah Lubendo, Mairead Matthews, and Heather McGeer, "Advancing Canada's National Sovereign AI Compute Capacity: An ICTC Policy Brief," Information and Communications Technology Council (ICTC), July 2025, <https://ictc-ctic.ca/policy-briefs/advancing-canadas-national-sovereign-ai-compute-capacity>.

¹⁹ See: "Spotlight on: University Artificial Intelligence Publication Performance 2018-2022," Research Infosource, 2024, <https://researchinfosource.com/cil/2024/top-50-research-universities/spotlight-ai>.

²⁰ See: "From World-Class Research to Real-World Results: Canada's AI Opportunity," Microsoft, August 12, 2025, <https://news.microsoft.com/source/canada/2025/08/12/from-world-class-research-to-real-world-results-canadas-ai-opportunity/>.

the second quarter of 2025, only 12.2% of Canadian businesses are using AI for “producing goods or delivering services.”²¹ Furthermore, the Statistics Canada data indicates that most businesses who have adopted AI into their operations have only begun using GenAI technologies for basic use-cases, such as developing chatbots and virtual agents (24.8%), automated marketing (23%), as well as text (35.7%) and data analytics (26.4%).²²

Meanwhile, the highest impact and most advanced use cases for AI remain rare in Canadian industry, such as AI-enabled decision-making systems (5.7%), biometrics (3.2%), and AI-enabled robotics and industrial process automation (3.8%).²³ These advanced applications of AI technology have the potential to yield significant productivity gains throughout Canada’s industrial ecosystem.²⁴ For example, AI applications in industrial automation for manufacturing show great promise in boosting productivity in a sector that has suffered from lagging productivity growth over the past decade.²⁵

Of the companies that are adopting advanced forms of AI, the vast majority are large firms. Canada’s small- and medium-sized enterprises (SMEs) account for the majority of business in Canada, employing 63.8% of all private sector workers and contributing 48.2% towards national GDP between 2016 and 2020.²⁶ Despite their substantial contributions to Canada’s economy and employment landscape, SMEs in Canada face significant hurdles to adopting advanced digital technologies like AI. Barriers include financing, affordable access to AI compute, a lack of trained staff capable of implementing AI solutions, and low awareness of how to adopt and leverage AI technology to solve practical business problems and deliver in-demand products and services.²⁷

Canada must align its AI research excellence with its industrial and commercial landscape, helping

Canadian businesses, including SMEs, adopt AI technology into their operations. This will accelerate the rate of adoption of advanced AI use-cases, while also developing and delivering leading AI products and services to domestic and international markets.

To achieve this, Canada could take steps to align public procurement and regional economic development programs to drive commercial AI adoption amongst a wider range of industrial applications:

- › **Streamlining Government Procurement Systems:** Canada should enhance its federal procurement initiatives to intentionally stimulate the industrialization, commercialization, scaling, and new market formation of promising domestic AI innovations. Canada can leverage its newly formed Defence Investment Agency to align defence investments with Canadian AI technology applications for major national defence capital projects, while supporting dual-use functionalities with large commercial and industrial applications.
- › **National AI Commercialization Fund:** Canada should launch a national AI commercialization fund to help domestic AI companies scale both in Canada and internationally to new markets. International examples, such as the United Kingdom’s AI Opportunities Action Plan,²⁸ the Netherlands’ AiNed program,²⁹ and Finland’s AI Business program,³⁰ can be referenced as models for a Canadian commercialization program.
- › **Establish Regional AI Commercialization Clusters:** Canada should establish regional AI commercialization clusters, embedded around existing AI research institutes and postsecondary institutions, to connect AI research to local enterprise. Regional AI commercialization clusters can partner with regional SMEs to co-develop AI technology adoption pilot projects, enabling

²¹ Valerie Bryan, Shivani Sood, and Chris Johnston, “Analysis in Brief: Analysis on artificial intelligence use by businesses in Canada, second quarter of 2025,” Statistics Canada (Government of Canada), June 16, 2025, <https://www150.statcan.gc.ca/n1/pub/11-621-m/11-621-m2025008-eng.htm>.

²² Bryan, et al., *ibid*.

²³ *Ibid*.

²⁴ Rannella Billy-Ochieng, Anusha Arif, Daniella Garcia, “Artificial Intelligence Technologies Can Help Address Canada’s Productivity Slump,” TD Economics, May 28, 2024, <https://economics.td.com/ca-AI-tech-can-help-productivity-slump>.

²⁵ See: Next Generation Manufacturing (NGen), NGen Productivity Report 2024, <https://www.ngen.ca/hubfs/Productivity-Report-2024.pdf>, 4-6.

²⁶ Innovation, Science and Economic Development Canada (Government of Canada), “Key Small Business Statistics 2023,” last update November 21, 2024, <https://ised-isde.canada.ca/site/sme-research-statistics/en/key-small-business-statistics/key-small-business-statistics-2023#t11>.

²⁷ ventureLAB, “Enhancing Canadian AI Commercialization,” September 5, 2025, <https://www.venturelab.ca/news/enhancing-canadian-ai-commercialization>.

²⁸ “AI Opportunities Action Plan,” Department for Science, Innovation & Technology (Government of the United Kingdom), January 13, 2025, <https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan>.

²⁹ “AiNed,” Dutch Research Council (Government of the Netherlands), accessed October 31, 2025, <https://www.nwo.nl/en/researchprogrammes/national-growth-fund/ained>.

³⁰ “AI Business Program (Finland),” OECD.AI Policy Navigator, Organisation for Economic Co-operation and Development (OECD), last update July 9, 2025, <https://oecd.ai/en/dashboards/policy-initiatives/ai-business-program-1080>.

them to be responsive to regional economies and industry needs. To ensure inclusive innovation, regional AI commercialization clusters should embed programs to support diverse innovators and entrepreneurs, enabling the full spectrum of Canadian society to benefit from AI.

RECOMMENDATION 6:

ADOPT A COMPREHENSIVE RISK-BASED AI GOVERNANCE FRAMEWORK

Canada should modernize its AI governance framework by enacting a proportionate, risk-based legislative approach that promotes regulatory interoperability with international partners, while safeguarding innovation, public trust, and responsible AI development.

Despite having established the world's first national AI strategy in 2017,³¹ Canada currently lacks a comprehensive AI-specific legislative framework. The proposed Artificial Intelligence and Data Act (AIDA), introduced as part of Bill C-27 and subsequently terminated with Parliament's prorogation in January 2025, marked an important step towards comprehensive AI governance in Canada.³²

However, as a result of Bill C-27's termination, AI governance in Canada is predicated on a patchwork system of privacy and data protection laws and voluntary instruments, such as the Personal Information Protection and Electronic Documents Act (PIPEDA), the Directive on Automated Decision-Making, and the Voluntary Code of Conduct for Generative AI.³³ These frameworks provide ethical guidance but lack enforceable, sector-wide conventions concerning oversight, transparency, and accountability.

The absence of a comprehensive AI legislative framework presents serious risks for interoperability, talent mobility, and business competitiveness with peer nations. Without a clear and enforceable governance structure, Canadian firms face uncertainty regarding compliance and have limited regulatory uniformity in other jurisdictions. This

regulatory gap undermines interoperability and limits full participation in transatlantic data and innovation partnerships, including Horizon Europe and the EU-Canada Digital Partnership.³⁴ Moreover, Canada's limited interoperability and unclear regulatory frameworks may deter foreign investment and hinder talent mobility, as researchers and companies may opt to work in other jurisdictions with clearer standards, compliance guidance, and accountability mechanisms that provide a measure of predictability and stability.

Establishing a comprehensive AI governance framework would position Canada as a trusted and interoperable jurisdiction for AI development and trade. A risk-based approach, like the EU's AI Act would strengthen cross-border collaboration, streamline compliance for businesses, and align Canada's regulatory environment with like-minded democracies. To address Canada's need to modernize its AI governance framework, ICTC recommends:

- ▶ **Leverage Proportionate Obligations Based on Risk and Role:** Canada should build on AIDA's risk-based foundation and align its comprehensive AI legislative framework with the tiered model exemplified by the EU AI Act. AI systems should be categorized according to the potential harm they pose, with corresponding obligations proportionate to each category.
- ▶ **Ensure Regulatory Interoperability with the EU AI Act:** As highlighted in ICTC's joint analysis with ADRA, aligning Canadian AI regulation with the EU AI Act will be key to maintaining trade alignment, safeguarding data adequacy under the GDPR, stimulating new market development, and ensuring cross-border market access.³⁵ Harmonization of privacy standards, transparency requirements, and model documentation obligations will reduce compliance burdens for Canadian firms and strengthen consumer trust.
- ▶ **Empower the Office of the Privacy Commissioner (OPC) to Oversee AI Compliance:** Oversight of AI should be assigned to an independent and well-resourced authority. The OPC should be formally empowered to oversee AI regulation, supported by a

³¹ "Government of Canada launches AI Strategy Task Force and public engagement on the development of the next AI strategy (press release)," Innovation, Science and Economic Development Canada (Government of Canada), September 26, 2025, <https://www.canada.ca/en/innovation-science-economic-development/news/2025/09/government-of-canada-launches-ai-strategy-task-force-and-public-engagement-on-the-development-of-the-next-ai-strategy.html>.

³² Amaya Garmendia, Todd Legere, and Noah Lubendo, "Sovereignty and Economic Growth: Strengthening Transatlantic Leadership Between the EU and Canada," AI, Data and Robotics Association (Adra)/ Information and Communications Technology Council (ICTC), May 8, 2025, <https://ictc-ctic.ca/reports/ai-sovereignty-and-economic-growth>.

³³ Garmendia, et al., Ibid.

³⁴ Garmendia, et al., Ibid.

³⁵ Ibid.

multi-stakeholder advisory board including industry, academia, civil society, and international observers. This structure would balance risk assessment with democratic accountability and is similar to the collaborative oversight models used under the EU AI Act and the UK's sectoral regulators.

- › **Embed Transparency, Accountability, and Adaptability:** A modern AI legislative framework must be flexible and iterative, capable of adapting to emerging technologies without hindering innovation. It should mandate transparency reporting for AI developers and deployers to ensure responsible use. At the same time, it must safeguard innovation through regulatory sandboxes, testbeds, and proportionate compliance pathways for startups and SMEs to reduce administrative burdens and build public trust in AI.

RECOMMENDATION 7:

EMBED SUSTAINABILITY INTO AI COMPUTE CAPACITY

Canada must accelerate its clean energy generation capabilities to power the exponential increase in demand generated by AI compute infrastructure, prioritizing major projects of national interest, partnerships with provincial governments, innovative energy solutions with large-scale commercialization potential, and regulatory frameworks prioritizing transparency and incentivizing energy efficiency.

Data centres are critical nodes in AI compute infrastructure, housing the servers, storage systems, networking equipment and associated components required to train, host, and process AI applications. In 2024, data centres consumed approximately 1.5% of global electricity consumption, a rate that has increased by 12% per year for the past five years.³⁶ With the rise of AI, countries and industries around the world are investing heavily in building new AI compute capacity, including hyperscale data centres capable of supporting high-performance accelerated servers and the associated networking equipment and cooling systems required to operate these facilities.

The International Energy Agency estimates that electricity consumption by the accelerated servers required for widespread AI adoption will increase by 30% annually to 2030; energy consumption from accelerated servers account for almost half of the global net increase in data centre electricity consumption.³⁷ This increase does not include the forecasted growth in energy consumption due to non-server components, such as cooling systems, which account for between 7% to 30% of total data centre energy consumption.³⁸

Currently, non-greenhouse gas-emitting (GHG) energy sources, such as hydroelectricity, nuclear power, wind, and solar energy, account for 82% of Canada's electricity generation; the remainder is generated mainly by fossil fuels, including natural gas, coal, and oil. The provincial distribution is uneven, with some provinces, such as Alberta and Saskatchewan, relying more heavily on GHG sources than others.³⁹

As Canada builds its domestic AI compute infrastructure and invests in hyperscalers, it must invest in its clean energy generation capacity in tandem to meet increased demand. Boosting investment in the development of innovative clean energy technologies and infrastructure, such as small modular reactors, green hydrogen fuel cells, and renewable energy technology, is essential to not only ensure Canada's AI ambitions have the energy resources they require but also to position the nation as a global destination for clean AI investment. At the same time, investing in domestic clean energy infrastructure can simultaneously boost innovation and growth in this sector, enabling Canadian clean energy firms to develop potent solutions that can be exported to new markets and cementing Canada's leadership as a clean energy superpower.

To address this pressing need, Canada must **embed sustainability into its AI compute strategy:**

- › **Co-invest in clean energy infrastructure with provincial alignment:** Canada must adopt a Team Canada approach to clean energy infrastructure. In addition to its efforts to develop a national energy grid that bridges provincial utility systems, Canada must collaborate with provinces to co-invest in innovative clean energy projects tailored to

³⁶ "Energy demand from AI," International Energy Agency (IEA), accessed October 31, 2025, <https://www.iea.org/reports/energy-and-ai/energy-demand-from-ai>.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Canadian Centre for Energy Information (Government of Canada), "Energy Fact Book, 2024-2025: Clean power and low carbon fuels," last update May 30, 2025, <https://energy-information.canada.ca/en/energy-facts/clean-power-low-carbon-fuels>.

meet the expected regional demand from AI data centers. Strategies can include aligning federal and provincial regulatory and permitting timelines, strategically investing in projects that leverage regional natural resource availability and working with the provinces to develop coordinated planning and investment frameworks.

- › **Require energy transparency reporting for publicly funded AI projects:** To encourage the responsible and sustainable growth of AI infrastructure, Canada should require energy transparency and reporting for all publicly funded AI projects. This policy would mandate that organizations disclose the energy consumption, carbon intensity, and water usage associated with training and deploying AI models, particularly in data centres. Such transparency would enable better benchmarking, inform policy decisions, and align public investments with Canada's climate goals. The EU offers a compelling model: under the 2023 EU Energy Efficiency Directive, data centres with an IT load above 500 kW must report key sustainability metrics—including total energy use, renewable energy share, and waste heat reuse—to a centralized EU database.⁴⁰ Additionally, the EU AI Act requires developers of general-purpose AI models to maintain technical documentation that includes energy consumption estimates based on computational resources used.⁴¹ Canada can adopt similar standards to ensure that public funds are used responsibly, accelerating both AI leadership and the clean energy transition, thereby improving its global competitiveness and attracting clean AI investment.

- › **Incentivize efficient AI model architecture:** Canada should enhance its R&D tax credit frameworks to incentivize AI architectural efficiency, such as sparsity-aware models, quantization techniques, and modular compute design. Adopting computationally efficient models can significantly reduce environmental impact while maintaining performance. Encouraging the development of custom architectures for sector-specific use cases can further limit undue energy usage.
- › **Expedite approvals for high-efficiency data centre projects:** Canada should expedite the approval process to favour high-efficiency AI compute infrastructure, particularly projects that demonstrate innovative energy optimization strategies, low-carbon design, and advanced cooling technologies. Fast-tracking these projects would align Canada's AI Strategy with Canada's climate commitments and support the growth of responsible AI innovation. Norway offers a compelling model through its support of the Stargate Norway initiative—an AI gigafactory powered entirely by renewable hydropower and designed with closed-loop liquid cooling and heat reuse systems.⁴² The project benefited from streamlined regulatory processes and strategic public-private partnerships, enabling rapid development of one of Europe's largest AI compute hubs. Canada can adopt similar best practices by embedding expedited review pathways into its newly established Major Projects Office and linking them to performance-based sustainability metrics.

CONCLUSION

ICTC's recommendations aim to offer a forward-looking and actionable framework to guide the development of a renewed national AI strategy for Canada. Grounded in decades of expertise and a commitment to inclusive, innovation-driven economic growth, these seven recommendations emphasize the importance of talent development, international collaboration, strategic infrastructure investment, and responsible governance. Together, they aim to ensure that Canada not only keeps pace with global AI advancements but also leads with integrity, resilience, and a clear vision for the future.

By adopting these measures, Canada can strengthen its digital advantage and build an AI ecosystem that benefits all Canadians and Canadian industry for generations to come.

⁴⁰ Agnieszka Widuto, "AI and the energy sector," European Parliamentary Research Service, July 2025, https://www.europarl.europa.eu/RegData/etudes/BRIE/2025/775859/EPRS_BRI%282025%29775859_EN.pdf

⁴¹ "Annex XI: Technical Documentation Referred to in Article 53(1), Point (a) – Technical Documentation for Providers of General-Purpose AI Models," EU Artificial Intelligence Act, <https://artificialintelligenceact.eu/annex/11/>

⁴² Nscale, "Aker and OpenAI to establish Stargate Norway: a 100,000 NVIDIA GPU AI Gigafactory powered by renewable energy in Northern Norway (press release)," Nscale, July 31, 2025, <https://www.nscale.com/press-releases/stargate-norway-nscale-aker-openai>.