

Data Centres Are the New Critical Infrastructure – Does Canada Want Its Own?

July 2026

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AI infrastructure will be one of the most consequential assets of the next decade, and the world is not going to build enough of it. The deficit is a function of long lead times, constrained power and land in dense markets, and an appetite for compute capacity that is outrunning supply.

For Canada, that gap is not a threat. It is a market.

Canada is positioned to be among the countries that address this shortfall, if it moves with purpose. Competitive energy cost, abundant land, a stable investment climate, and deep institutional capital give it the means to compete in the global AI infrastructure market as an owner and exporter of compute capacity.

Global supply for GenAI compute capacity is on track to grow sixfold by 2030, from roughly 20 gigawatts to almost 120. Even with the United States on track to build significant capacity, and the UK, Germany, the UAE, and Japan all scaling aggressively, up to 15% of demand could go unmet. (See Exhibit 1.)

The stakes are high. Like roads, bridges, and fibre networks, AI data centres are critical infrastructure that economies and governments increasingly depend on to function. Quebec City is already implementing AI-controlled traffic lights, with similar deployments in high-stakes systems underway across the

country. As AI becomes integral to power grids, financial systems, healthcare, and national defence, a country that cannot run sensitive workloads on domestically owned and governed compute is exposed. Questions of where workloads run, where data resides, and under whose legal jurisdiction will only grow in consequence.

From AI Sovereignty to Resilience

AI sovereignty spans infrastructure, software, data and security, and cross-cutting enablers. (See Exhibit 2.) Full-stack sovereignty – the ability to exercise meaningful control across all layers – is out of reach for most countries. A recent **BCG Institute** study across more than 30 nations found that even well-resourced countries have struggled to sustain control over individual layers, let alone the whole stack. The infrastructure layer is particularly challenging because the semiconductor supply chain is deeply globalized, creating dependencies that few nations can fully eliminate. For example, Germany’s effort to anchor advanced semiconductor manufacturing domestically, backed by nearly €10 billion in government subsidies, ultimately collapsed under global cost pressures and supplier dependencies.

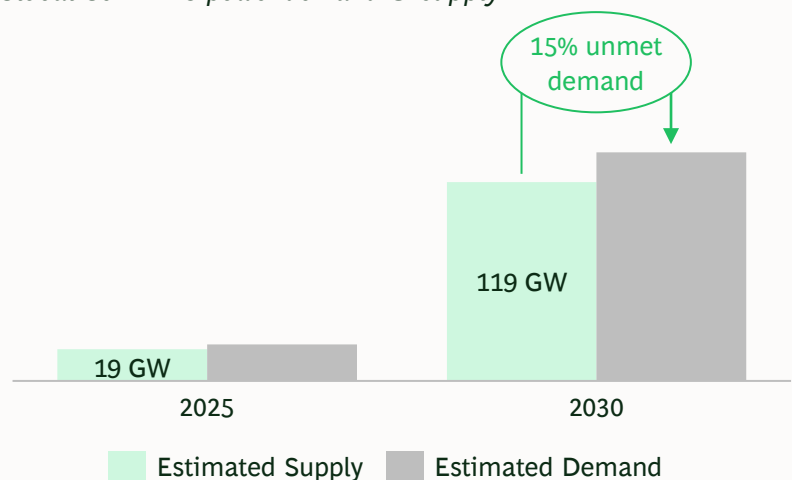
EXHIBIT 01

Opportunity for Canada to increase global share of compute

Up to 15% of global demand on track to be unmet by 2030

Data Centre supply expected to grow 6X from 2025 to 2030

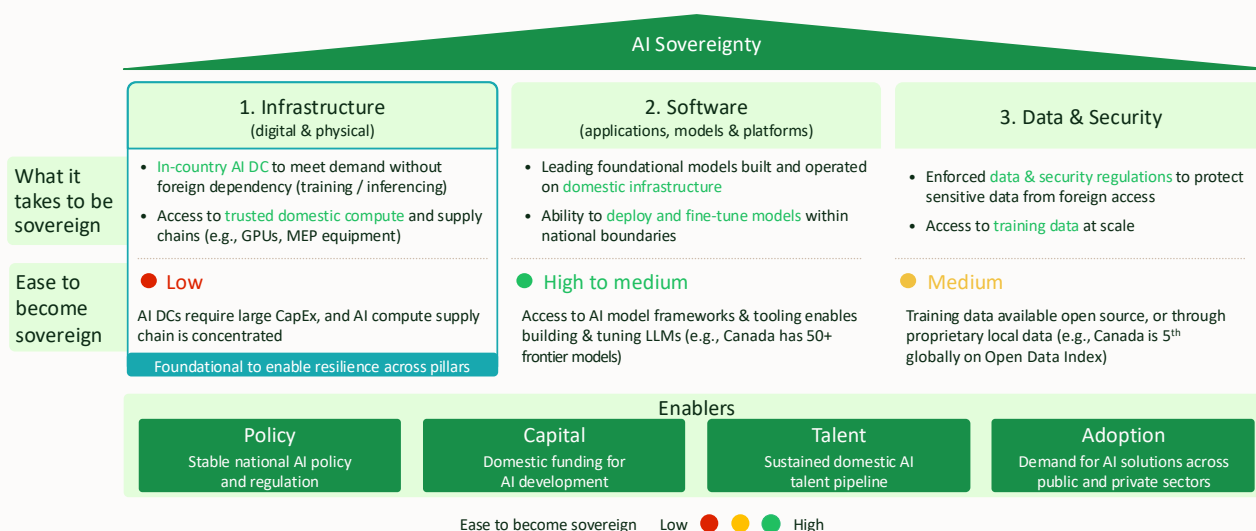
Global GenAI DC power demand & supply



Source: BCG Demand Model as of March 2026; Excludes China and Crypto

EXHIBIT 02

Three pillars of AI Sovereignty, supported by cross-cutting enablers



Source: BCG analysis

The more achievable and durable goal is resilience. Understanding where national competitive advantages are strongest – and owning a position built on those strengths – helps to secure the layers a country can hold while managing its dependencies in the rest. Canada is unlikely to build chips but could play an important role in the resources they require, creating resilience where sovereignty is impossible. Countries that coordinate with trusted partners across different layers of the AI stack can achieve more resilience together than any could independently.

Domestic compute capacity is the foundation of resilience, because control of compute underpins every other layer of the AI stack and determines a nation's ability to operate through disruption. Domestically controlled compute that operates under local legal frameworks and protects local data from foreign compulsion is foundational to national and economic security. Strong domestic infrastructure also drives AI innovation: The ecosystem of startups, researchers, and enterprises that generate IP and economic value needs reliable, affordable, and locally governed compute to grow. The good news is that Canada has ready access to the inputs from which such infrastructure is built.

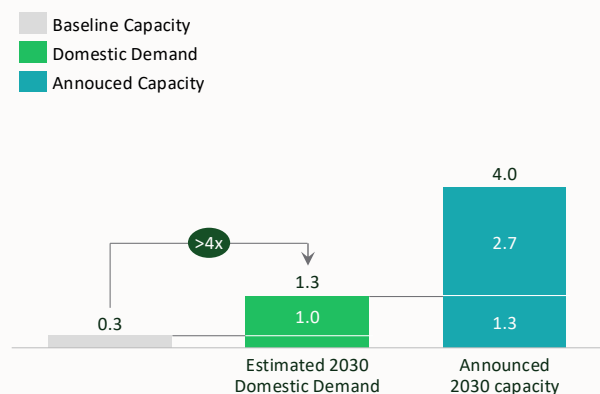
Canada's Position: Domestic Capacity Within Reach, Export Opportunity Beyond

Canada has 0.3 GW of AI data centre capacity today. Serving Canadian workloads domestically requires roughly 1.3 GW by 2030. Plans for 3.5 to 4 GW are already on the books, and governments are moving behind them: the 2025 Sovereign AI Compute Strategy and 2026 AI for All Strategy include billions in funding, including for domestic AI infrastructure. That pipeline, if executed under Canadian ownership and governance frameworks, covers domestic demand with room to spare. The larger prize is export: an estimated 1.7 GW in the conservative case, rising to 6.7 GW in the high case. To capture this opportunity in full, Canada would need an incremental 4 GW beyond everything currently announced. (See Exhibit 3.)

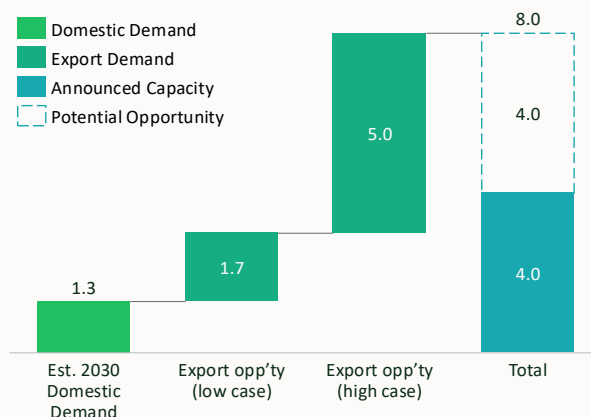
EXHIBIT 03

Opportunity for incremental export capacity above announced supply

Serving domestic demand could require >4x today's capacity by 2030, well within the announced supply ...



... but there may be an incremental ~4GW opportunity by capturing high share of global exports



Building this capacity by 2030 would require close collaboration between the private and public sector to ensure availability of critical inputs: capital, chips, affordable energy, available land, demand for compute capacity, and support from stakeholders including First Nations.

Understanding Canada's Opportunity

Canada's advantages are the hardest ones to replicate. It has competitive power, available land, capital with the scale and patience for long-duration assets, and a stable geopolitical risk profile. Its weaknesses are in execution, where permitting and speed to market lag peer markets. (See Exhibit 4.) These advantages sit in different hands – utilities, telcos, institutional funds, governments – and no one of them can build this market alone.

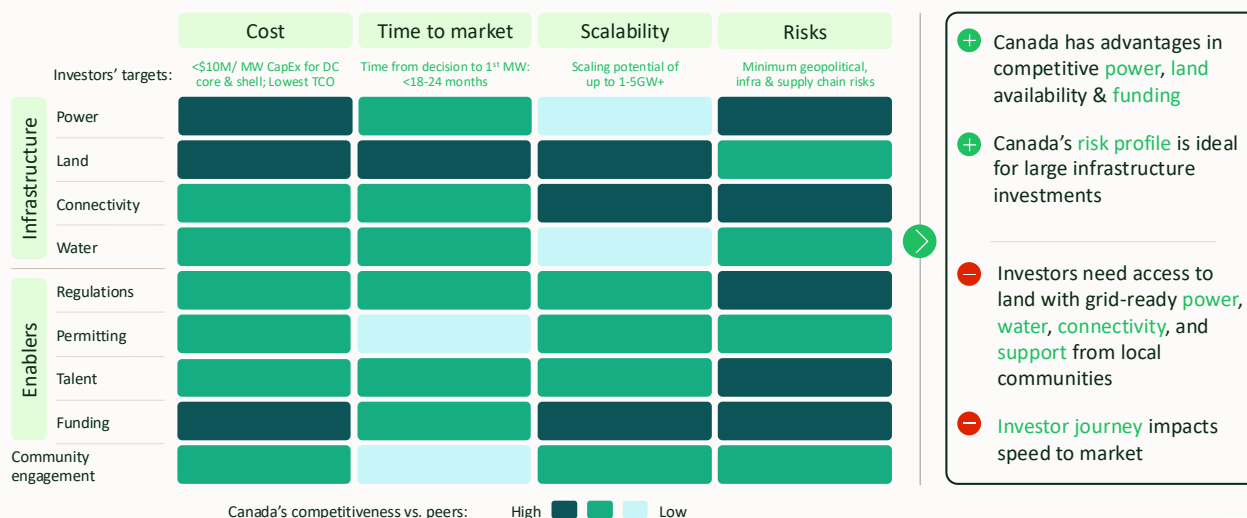
- **Telcos:** AI buildout creates demand for purpose-built, high-capacity networks linking large AI campuses. In the US, Lumen Technologies has signed ~\$13B USD in hyperscaler agreements to build exactly these networks. Canadian

telcos, with deep connectivity assets and national reach, are already positioning themselves for a comparable role serving domestic and export demand.

- **Power and utilities:** Energy is emerging as the binding constraint on global buildout, and Canadian energy, power, and utilities companies sit at a critical chokepoint. [BCG research](#) finds gas generation paired with carbon capture best placed to meet data centre demand at scale. With abundant natural gas and deep expertise in carbon capture, Canada is well placed to build generation for this demand.
- **Institutional investors:** Projects routinely exceed one billion dollars, and institutional capital already backs more than half the volume in most large global builds, as co-developers, construction equity providers, and anchor investors from the start. Canadian funds play these roles internationally. This is an opportunity to do it at home, as lead developers with controlling ownership rather than passive capital.

EXHIBIT 04

Canada well-positioned to compete on AI infrastructure



Source: BCG analysis

These players build the opportunity, but government and community stakeholders are critical for successful execution. Their support depends on the trade-offs being faced squarely. The 3.5–4 GW already announced will require \$80 to 110 billion in capital investment for data centres alone, excluding grid upgrades. That capital has alternatives. Stakeholders should weigh data centre investment against other priorities and ensure that economic value accrues within Canada.

Data centres are high-productivity assets, but they are not labour-intensive once built, and their environmental footprint on energy, water, and land is significant. Communities hosting these facilities should have realistic expectations about both long-term employment and local environmental impact. Every gigawatt directed to compute capacity is a gigawatt not available for housing, industrial development, or electrification, unless matched with new generation. Large new loads connecting to the grid risk driving up costs for existing ratepayers, but where new generation is incremental the benefits of a larger, more reliable grid flow broadly. The question is not whether to pursue AI infrastructure, but whether Canada can do so in a way that builds new capacity, distributes benefits broadly, and promotes domestic returns.

What Needs to Happen Now

Global best practices for accelerating AI infrastructure buildout highlight four themes:

- **Coordinate national efforts.** Investors want a single process – from project proposal through to approval – with defined stage gates, committed timelines, and clear accountability. By streamlining the investor journey and giving agency and accountability to decision makers, Canada can create the conditions for rapid infrastructure buildout.
- **Turbocharge investment.** The long-term economic returns from this infrastructure (tax base, jobs, data flows) accrue when domestic entities hold ownership and governance of the assets, not just exposure to their returns. Structuring opportunities for institutional investors to enter as lead developers and controlling owners, rather than late-stage equity, can be an important enabler. Deal structures that preserve local decision-making rights over assets and data flows are as important as the volume of capital deployed in securing domestic AI capacity and economic growth.

- **Secure critical inputs.** Creating domestic compute capacity requires access to the hardware that runs AI workloads. Access to cutting-edge chips, long-term offtake commitments, and localized supply chains (for example, semiconductors for optical transceivers) are critical. Obtaining access requires direct engagement with chip manufacturers, strategic procurement frameworks, and investment in the logistics and supply chain infrastructure that supports large-scale builds. Grid and energy investment is the enabling infrastructure for everything else and cannot be deferred.
- **Drive broad adoption.** AI infrastructure that sits unused does not deliver economic or strategic value. Locally owned capacity builds domestic value when it powers a thriving national ecosystem of startups, researchers, and enterprises generating domestic IP and economic activity. Creating this ecosystem requires deliberate demand-side investment, including AI adoption programs, researcher access, procurement preferences, and skills development.

A Call to Action

Domestic compute capacity protects Canada from geopolitical disruption. Export-oriented AI infrastructure positions Canada as a global leader in the compute economy. Canadian ownership and a thriving AI ecosystem create lasting productivity and economic growth.

The world will not build enough compute capacity in this decade. Canada has an opportunity to build more than it needs. The inputs are in hand, the pipeline is on the books, and the capital exists.

What the moment will not supply is time. Generation and transmission lead times run in years, so the export positions of 2030 are being decided now. The window is open for Canada to secure a resilient domestic compute supply while exporting capacity to the world.



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Acknowledgments

Thank you for significant contributions from
Kate Banting, David Oliver, and Hamza Najmi

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