ASIA PACIFIC FOUNDATION OF CANADA
FONDATION ASIE PACIFIQUE DU CANADA

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Canada–South Korea Co-operation on ARTIFICIAL INTELLIGENCE

BACKGROUND NOTE

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CANADA–SOUTH KOREA CO-OPERATION ON ARTIFICIAL INTELLIGENCE

Canada, a leader in scientific research and policy governance in artificial intelligence (AI), is a natural partner for South Korea, a global frontrunner in AI legislation, adoption, and commercialization. Canada-South Korea bilateral relations have deepened over the years: the two signed the Canada-Korea Free Trade Agreement in 2014 and upgraded their relationship to a Comprehensive Strategic Partnership (CSP) in 2022. The release of the CSP Action Plan in 2024 has enabled more co-ordinated and institutionalized joint initiatives across academia, industry, and government, leading to a Memorandum of Understanding (MOU) on Cooperation in Critical Mineral Supply Chains, the Clean Energy Transition and Energy Security (May 2023), and an inaugural foreign and defence ministerial meeting (2+2) in November 2024.

As the 2025 G7 Chair, Canada led the 2025 G7 Leaders' Statement on AI for Prosperity, which emphasized AI adoption as opposed to regulation. Backing away from language on AI safety, the G7 Statement highlighted the need for innovation and future co-operation for public service, encouraging AI adoption by SMEs, energy challenges for AI, and support for AI in developing economies. As the APEC 2025 Chair, South Korea designated AI co-operation a top priority for discussion at the APEC Economic Leaders' Meeting in November 2025. In line with APEC 2025's theme of "*Building a Sustainable Tomorrow: Connect, Innovate, Prosper*," Korea is promoting successful AI transformation, AI capacity-building at all levels of state and society, and the development of sustainable and robust AI infrastructure.

1 The State of Canada-South Korea Co-operation on AI

CANADA'S AI STRATEGY

Canada's AI strategy is built on three pillars: 1) commercialization, 2) standards, and 3) talent and research. The strategy is co-ordinated by Innovation, Science and Economic Development Canada (ISED) and administered by the Canadian Institute for Advanced Research (CIFAR). Since launching the world's first national AI strategy in 2017, Canada has expanded its efforts through major investments in national AI institutes, including the Alberta Machine Intelligence Institute (AMII), the Montreal Institute for Learning Algorithms (MILA), and the Vector Institute in Ontario. The federal government has also advanced Canada's AI-Powered Supply Chains Cluster (Scale AI) and legislative measures such as the *Artificial Intelligence and Data Act* (AIDA). In 2024, Ottawa reinforced this approach with a C$2.4-billion investment in AI infrastructure and safety, including in the new federal Canadian AI Safety Institute (CAISI).

SOUTH KOREA'S AI STRATEGY

South Korea's AI Strategy is built on four pillars: 1) securing a technological edge through national AI computing infrastructure and semiconductor capability, 2) advancing next-generation AI models with innovation-driven R&D and talent development, 3) accelerating AI-driven transformation across industry and society, and 4) strengthening AI ethics, safety and global standards leadership. These priorities are grounded in the country's National AI Strategy (2019), and led by the Ministry of Science and ICT (MSIT) and National Information Society Agency (NIA) through co-ordinated efforts such as the National AI Computing Center, the AI Framework Act, and international standards-setting.

HOW CANADA AND SOUTH KOREA COMPLEMENT EACH OTHER

Canada and Korea complement each other's strengths in AI, augmenting the case for co-operation. Canada leads in world-class foundational research and has a rich talent pool and private investment, but has been limited in commercialization and lagging in developing information and communications technology (ICT) infrastructure. South Korea, meanwhile, excels in rapid commercialization and patents thanks to its AI ecosystem, which allows for fast-paced deployment of technology but with less global visibility of its research compared to Canada. Recent outcomes from collaboration, such as NAVER, dubbed 'Korea's Google,' Wattpad, and the University of Toronto working together on natural language processing (NLP), as well as the Seoul-Quebec IVADO partnership, show that these synergistic strengths lead to deep cross-border innovation and can deliver mutual benefits for the global AI ecosystem.

2 Challenges and opportunities for Canada and South Korea in AI

AI ENERGY NEEDS IN CANADA AND KOREA

By 2030, global electricity demand from AI-intensive data centres is forecast to more than quadruple, and Canada is on track to invest C$16.3 billion in new data-centre capacity by 2030. These numbers highlight why Ottawa and Seoul both view energy and hardware security as a strategic imperative for AI. Korea recognizes that rapid AI expansion must be matched by cleaner power and smart energy management – an area in which Canada's experience in sustainable data infrastructure and renewable integration can offer practical partnership opportunities. To avoid straining its power sources, Korea is relocating data centres away from Seoul to Busan and nearby Ulsan. Busan has been designated a Distributed Energy Specialized Zone with large-scale battery storage, while the SK Group–AWS AI data centre in Ulsan was built next to an LNG power plant to help ensure a stable energy supply. SK Telecom's AI Infrastructure Superhighway envisions multiple hyperscale centres nationwide, requiring even more robust power and grid support.

OPPORTUNITIES FOR CANADA–SOUTH KOREA ENERGY CO-OPERATION FOR AI

Given the complementarity of Canada and South Korea's AI strengths, there are significant opportunities to jointly address the interlinked priorities of AI innovation and energy security. LNG Canada's new export terminal in Kitimat, B.C. – the first direct LNG link from North America's west coast to Asia – is slated to ship its first cargo in July 2025, marking Canada's entry into the Asian LNG market. This project, which will eventually export 14 million tonnes of LNG per year, significantly shortens supply lines to Northeast Asia. Korea Gas Corporation (KOGAS), South Korea's government-owned gas company and the partner in this C$40-billion project, holds a stake in LNG Canada (5%), giving Korea a clear interest in the project's success.

Beyond LNG, Canada is a top hydrogen producer, and South Korea has a national hydrogen strategy. Co-operative projects could focus on carbon capture and storage at gas-fired plants to offset emissions from the increased fuel use driven by AI computing. Canada's leading expertise in small modular reactors (SMRs), renewable energy integration, and grid management could also benefit Korean provinces aiming for high-tech 'smart grid' zones, while Canadian firms specializing in green data centre design and battery technology might find partnership opportunities in South Korea's push for sustainable AI data centres. These collaborations promise mutual benefits: Korea gains diversified energy inputs and research allies, while Canada deepens its engagement in Asia's digital economy and finds new markets for its natural gas and research outputs.

OPPORTUNITIES FOR CANADA–KOREA CO-OPERATION ON AI HARDWARE

South Korea's drive to develop AI chips and high-bandwidth memory, backed by its U$7 billion AI investment plan, could benefit from Canada's advanced research in areas like AI algorithms, photonics, and materials. In advanced semiconductors, there is a joint chip-design pathway between Korea's Samsung Foundry's 5nm AI chiplets and its US$693-million Series D investment in Toronto-based Tenstorrent – a Canadian AI computing startup. In the field of AI accelerators, both Hyundai and Kia have taken equity stakes in Tenstorrent, using Canada's autonomous vehicle and smart mobility testbeds in Ontario and B.C. These industrial linkages can diversify and secure Korea's supply chain and fulfill Canada's desire to increase its high-tech manufacturing footprint.

Canada's cold climate has a natural free-cooling advantage and can provide strong expertise in immersion-cooling startups. As an example, joint demonstration sites that can integrate Korean companies LG and Samsung's liquid immersion systems with Québec's winter free-air economization are being developed. In wind power, the CS Wind Windsor plant in Ontario – the largest wind-tower exporter in North America – provides a secure supply of Korean-made towers for new wind farms in Alberta and Saskatchewan. These projects are supported by Canada's federal renewables auction pipeline of 5 GW per year, ensuring that the clean energy needed to power AI campuses and data centres remains both reliable and scalable.

3 Expanding Partnerships in the Indo-Pacific Region

CANADA-SOUTH KOREA AI PARTNERSHIP AS A HEDGE AGAINST U.S.-CHINA RIVALRY

Canada–South Korea AI co-operation can serve as a foundation for additional multilateral AI initiatives and inclusive digital development in the Indo-Pacific region. The most concerning dynamic is related to U.S.-China competition in AI dominance, against which middle-power states such as Canada and South Korea face a choice of either aligning with the U.S. to prevent China from gaining dominance or pursuing sovereign AI that relies less on either the U.S.'s or China's AI technology. As advanced economies capable of innovation but at the same time vulnerable to overdependence on both the U.S. and China, Canada and South Korea face similar concerns within this dynamic. Crucially, working together also helps both countries uphold shared values, such as maintaining AI innovation in line with democratic norms and sustainability.

The co-development of open-source large language models that combine Canada's research strengths with South Korea's agile manufacturing base would create a credible alternative to the proprietary ecosystems in Washington and Beijing. The meteoric rise of China's DeepSeek platform has convinced Seoul that resource-efficient innovation remains possible, spurring interest in working with Canadian institutes on training methods that rely on smaller datasets and sovereign compute resources. Ottawa and Seoul's July 2024 Action Plan to co-operate on "governance, norms, and standards of AI" provides a basis for a future joint framework that can safeguard datasets, model weights, and safety protocols beyond the regulatory reach of either Washington or Beijing.

CANADA-SOUTH KOREA AI PARTNERSHIP AND ASEAN

Co-operation on AI hardware likewise cushions both economies from the turbulence in the U.S.–China rivalry over chips. Toronto-based Tenstorrent's Series D funding round led by Samsung Securities, and its joint 'Eagle-N' chiplet with South Korea's BOS Semiconductors, are examples of building supply chain resilience. Samsung's forthcoming Mach-1 inference ASIC will further reduce reliance on U.S. export-controlled parts while also drawing on Canadian critical-mineral inputs and low-carbon power. Together, these moves give both countries the ability to scale advanced AI services and hardware without becoming over-reliant on the U.S. or China.

Canada-South Korea AI co-operation can also lead to a stronger presence in the Association of Southeast Asian Nations (ASEAN) through capacity-building initiatives in education and infrastructure building. Canada recently

announced plans to expand the AI for Development (AI4D) initiative to Southeast Asia and the Indo-Pacific, with initial projects beginning in 2025. Relatedly, Canada has already begun an investment of nearly C$4 million in partnership with BlackBerry and Toronto Metropolitan University, towards enhancing cybersecurity in Malaysia.

The Korea-ASEAN Digital Innovation Flagship (KADIF) project, a five-year, US$30-million initiative, focuses on jointly building a robust digital and AI ecosystem across Southeast Asia, advancing high-performance computing capabilities, and fostering local AI talent through tailored digital academies.

4 A Roadmap of Strategic Considerations for Industry and Policymakers

A decade ago, Canada–South Korea trade centred on beef, canola, and automobiles. In the AI age, the comparative advantage has shifted to bits, electrons, and the steel and silicon that bind them. By pairing Canada's clean energy endowments and world-leading AI algorithms with South Korea's unmatched depth in power-electrical and semiconductor manufacturing, both countries can contribute to de-risking supply chains, attract greenfield investment, and accelerate the deployment of trustworthy, energy-efficient AI infrastructure across the Pacific.

BALANCING INNOVATION WITH SUSTAINABILITY

South Korea's electricity generation is still heavily fossil fuel-based, and while importing Canadian LNG can improve its energy security and reduce its coal use, long-term climate neutrality will require a shift to renewables and/or nuclear. Both governments must balance short-term needs with decarbonization efforts, which may involve embedding clean energy projects into AI infrastructure plans and investing in energy-efficient AI hardware to curb consumption. Co-operation on CCUS, hydrogen, and SMRs will be critical to ensure that meeting AI's power needs does not undermine climate objectives. Electricity pricing and supply stability will affect the economics of AI infrastructure. The two countries might even explore a distributed cloud arrangement whereby Canadian data centres handle some of the load, which could both improve resiliency and reduce the carbon footprint.

POLICY CO-ORDINATION AND NEXT-GENERATION TALENT IS KEY

As signatories to the Digital Economy Partnership Agreement (DEPA), Canada and South Korea still need better alignment in AI standards, digital trade, and cybersecurity regulations. Harmonizing policies on cloud security or AI liability would lower the barriers for companies to collaborate and expand into each other's markets. Both Canada and Korea face shortages of AI engineers, data scientists, and skilled trades workers for building high-tech infrastructure, and must continue developing and retaining the talent needed to fuel AI innovation. Bilateral initiatives could include expanding research exchanges, scholarships, and joint training programs to build a cohort of professionals comfortable working in both ecosystems. As both countries have also identified quantum computing and sensing as priority sectors, partnerships can accelerate progress in AI-adjacent fields to ensure that new solutions are jointly owned and tailored for global markets.

SUGGESTED READINGS

AI IN KOREA'S ECONOMIC AND FOREIGN POLICY

U.S.-China Competition Looms Large at Seoul Summit on Use of AI in Military

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CANADA-KOREA RELATIONS AND AI

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AI IN EAST ASIA

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Artificial Intelligence Policies in East Asia: An Overview from the Canadian Perspective

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AI Asia: Canadian Startup Heartbeat AI Finds Success in Japan and South Korea

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The Artificial Divide: Canada's Role in the East-West Clash Over Machine Intelligence

https://www.asiapacific.ca/blog/artificial-divide-canadas-role-east-west-clash-over-machine

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ASIA PACIFIC FOUNDATION OF CANADA

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