THE
PLOUGHSHARES MONITOR
VOLUME 47 | ISSUE 2
SUMMER 2026

Canada's Moon Moment
Our responsibility in a new lunar era

ARMS TRADE
Ottawa Eyes Fifty Percent Arms Sales Surge

EMERGING TECH
Military AI, Middle Powers, and the Dual-Use Challenge

NUCLEAR WEAPONS
A Dangerous Fantasy Resurfaces

"They shall beat their swords into plowshares and their spears into pruning hooks; nation shall not lift up sword against nation; neither shall they learn war any more." Isaiah 2:4

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The Ploughshares Monitor is the quarterly journal of Project Ploughshares, the peace research institute of The Canadian Council of Churches. Ploughshares works with churches, nongovernmental organizations, and governments, in Canada and abroad, to advance policies and actions that prevent war and armed violence and build peace. Project Ploughshares is affiliated with the Kindred Credit Union Centre for Peace Advancement, Conrad Grebel University College, University of Waterloo.

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From the Director's Desk

50 Years of Turning Swords into Ploughshares

Written by Paul Heidebrecht

Over the past five months I have met with a wide range of Project Ploughshares' stakeholders, including partners from networks, universities, and churches, government policymakers, and donors. I have learned that avid readers of The Ploughshares Monitor can be found in all of these groups!

I have also learned that our mission is becoming more urgent and compelling every day. At a time when the world is racing to beat ploughshares into swords, when there is a profound rupture in the international rules-based order, an alternative approach to peace and security is needed more than ever. Our partners and supporters are convinced—as am I—that the voice of Project Ploughshares is needed now more than ever.

Project Ploughshares Director Paul Hediebrecht speaks at an anniversary reception in Winnipeg on May 25, 2026.

As evident in this issue of the Monitor, our researchers are working hard to keep abreast of key peace and disarmament issues, including new developments in outer space, the arms trade, responsible investing, nuclear proliferation, and artificial intelligence. They provide creative, insightful, and principled analysis of the issues of the day to decision makers and concerned citizens alike.

I think the research and analysis of Project Ploughshares makes an impact not only because it is timely and thoughtful, but because it builds on 50 years of accumulated trust and credibility. We will be taking the opportunity to celebrate this legacy in 2026, and I hope you can join us in this effort.

In May, I was able to meet with supporters at events in Winnipeg and Ottawa, and additional events are in the works in other parts of the country in the coming months. In June we will be launching a commemorative exhibit entitled "50 Years of Turning Swords Into Ploughshares" in the Grebel Gallery, located right next to our offices in the Kindred Credit Union Centre for Peace Advancement in Waterloo. Items from this exhibit, and other highlights, will be featured in the next issue of the Monitor. And this exhibit will still be on display on September 21, the International Day of Peace, when we will be hosting a fundraising dinner at Federation Hall in Waterloo. More information about these initiatives can be found on the back cover of this issue of the Monitor.

Canada's Moon Moment Comes with Responsibility

Written by Jessica West

The moon is back in the public imagination.

With Artemis II now complete, four astronauts — including Canada's Jeremy Hansen — have travelled around the Moon and returned safely to Earth. For the first time in more than half a century, a crewed lunar mission has brought the Moon close again: not as a distant symbol, but as a place humans are preparing to return, stay, and build.

Artemis is the U.S.-led effort to return humans to the Moon and build the basis for a longer-term presence there. It is not a single mission, but a campaign involving international partners, commercial companies, new technologies, and a growing focus on lunar infrastructure.

For Canada, Artemis II was a moment of pride and possibility. Hansen's journey made Canada part of a historic mission and gave Canadians a visible place in the next chapter of lunar exploration.

But the return to the Moon is not only about going back. It is about what comes next: what we build there, how we behave there, and who gets to help decide. What responsibility comes with having a place in that future?

Why Does the Moon Matter Again?

The Moon has always mattered.

It shapes life on Earth in ways both practical and poetic. It pulls the tides, marks time, anchors calendars, and appears across cultures as a source of story, ritual, navigation, wonder, and reflection. Long before it became a destination for spacecraft, the Moon was part of how people understood their place in the world.

That is part of why the return to the Moon carries such power. But today's return is different from the first era of lunar exploration. It is not only about astronauts, science, or national prestige. It is about building the systems that could support a more sustained human presence: communications, navigation, landing sites, logistics, research facilities, commercial partnerships, and resource activity.

Those systems will shape who can operate on and around the Moon, who benefits, what is protected, and what kinds of activity become normal.

So the question is not simply whether returning to the Moon is worthwhile. It is how we return, and what kind of relationship with the Moon we choose to build.

What is Canada's Role in Artemis?

Canada's most visible role in the Artemis program so far was Jeremy Hansen's seat on Artemis II. As the first Canadian — and the first non-American — to travel around the Moon, Hansen gave Canada a prominent place in the first crewed lunar mission in more than half a century.

But Canada's role is broader than one astronaut. It rests on space robotics, close partnership with NASA, and participation in the political framework being developed to guide lunar activity.

Canada's contribution has been tied to Canadarm3, a next-generation robotic system originally planned for Gateway, the lunar outpost once central to Artemis. With NASA's architecture now shifting toward a lunar base, the exact future of that contribution is uncertain.

Canada is also one of the original signatories of the Artemis Accords, which are meant to guide how countries return to the Moon and expand activity in deep space. The Accords are not a treaty, but a set of political commitments that establish shared expectations around peaceful purposes, transparency, safety, coordination, and the use of space resources. As more countries sign on, they are becoming one of the main frameworks shaping how future lunar activity is understood and organized.

So Canada's role is not only symbolic. It is technical, diplomatic, commercial, and political. That gives Canada more than a seat on a mission. It gives Canada a role in shaping what responsible lunar activity should look like.

Is This a New Space Race?

Not exactly. But competition is clearly part of the picture.

The first race to the Moon was dominated by the United States and the Soviet Union. Today's lunar activity involves space agencies, private companies, science institutions, and coalitions of states. Artemis is one major coalition. China and Russia are advancing another through the International Lunar Research Station (ILRS), with China aiming to land astronauts on the Moon by 2030 and to develop a basic model of the ILRS by 2035.

This is not only a race to arrive. It is a race to build and normalize new forms of activity on and around the Moon.

The competition is sharpened by geography. Not every part of the Moon is equally useful for sustained human activity. Much attention is focused on the lunar south pole, where permanently shadowed craters may contain water ice and nearby areas may offer access to sunlight for power. Water could support astronauts, produce oxygen, and potentially be converted into fuel.

That makes some locations more valuable than others, and raises the stakes around who arrives, builds, coordinates, and sets expectations first.

Isn't the Moon Already Governed?

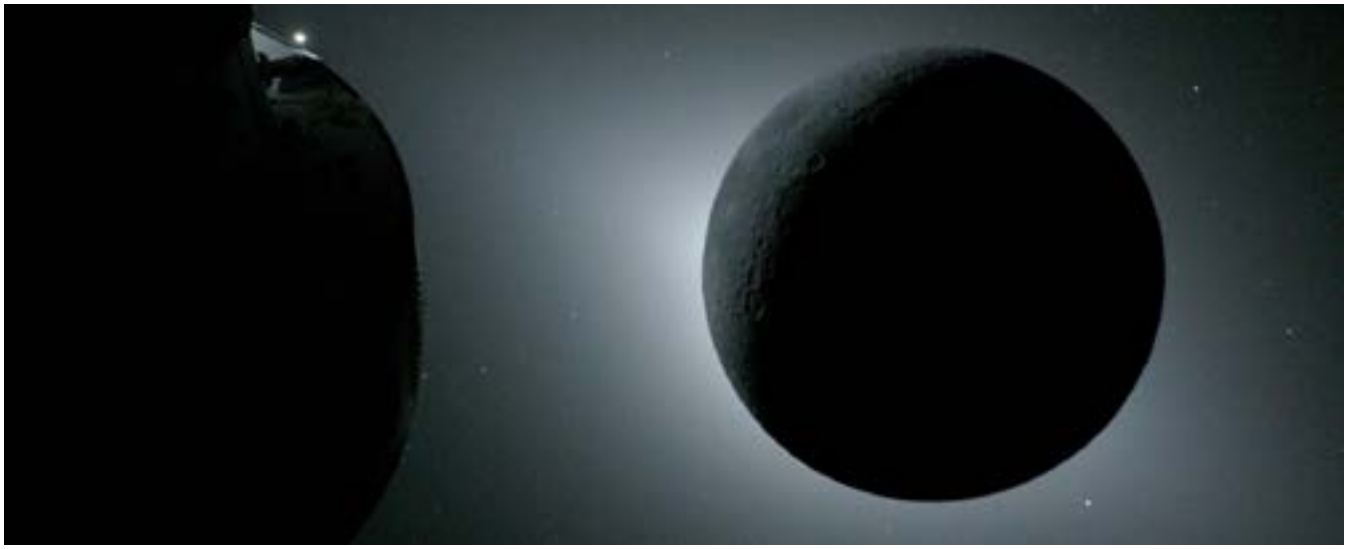
Yes. The Moon is not a legal free-for-all.

The core rules come from the 1967 Outer Space Treaty. Outer space, including the Moon and other celestial bodies, cannot be claimed as national territory. The Moon and other celestial bodies are also to be used exclusively for peaceful purposes. Military bases, weapons testing, and military manoeuvres are prohibited there.

Those rules matter. But they were written before today's lunar plans came into view: long-term infrastructure, commercial services, resource activity, safety zones, communications systems, and more sustained human presence. The treaty provides a foundation. It does not answer every practical question now emerging.

This matters because strategic interest in the Moon is growing. The concern is not that weapons or military bases are about to appear openly on the lunar surface. But the wider region around the Moon — often called cislunar space — is becoming important for communications, navigation, tracking, logistics, surveillance, and situational awareness.

A 2020 memorandum of understanding between NASA and the U.S. Space Force notes that, as U.S. public and private operations extend into cislunar space, the Space Force's sphere of interest will extend to "272,000 miles and beyond," creating a much larger surveillance task for space domain awareness. A subsequent Air Force Research Laboratory primer framed cis-



The Moon, backlit by the Sun during a solar eclipse, is photographed by NASA's Orion spacecraft on April 6, 2026, during the Artemis II mission. Image credit: NASA

lunar space as an area requiring military space professionals to develop plans, capabilities, expertise, and operational concepts.

None of this means the Moon is being weaponized. But it does show that the line between peaceful, commercial, protective, and strategic activity is already becoming difficult to draw.

That is why governance matters now. The issue is not that the Moon is ungoverned. Existing rules provide an important foundation. But countries need to translate them into practical expectations, clarify what they leave unresolved, and address gaps before the basic patterns of lunar activity are set.

What Responsibility Does Canada Have Now?

Canada does not need to be the biggest actor in lunar exploration to take responsibility for what comes next. Its role in Artemis gives it a stake — and a voice — in how lunar activity is organized, justified, and governed.

The lesson from Earth orbit is that "peaceful use" does not become meaningful on its own. Space has long been described as peaceful, even as it became embedded in military operations, strategic competition, and dual-use infrastructure. The problem is not peace as a principle. The problem is peace treated as a label broad enough to cover almost anything.

If everything is peaceful, nothing is.

Canada can help prevent that ambiguity from being carried to the Moon. It can use its role in Artemis, its work through the United Nations, and its relationships with partners to push for clearer expectations around transparency, coordination, safety, resource activity, environmental protection, non-interference, and shared access.

That means asking practical questions now. How can safety zones be used for safety without becoming claims of control? How should scientific, cultural, and environmental sites be preserved? How should lunar infrastructure support shared access rather than exclusion? And when a system has both peaceful and strategic uses, how can its effects be assessed, not only its stated purpose?

Artemis II gave Canada a visible place in humanity's return to the Moon. The responsibility now is to use that place well: not only to help build the next lunar era, but to help ensure it is governed by restraint, shared access, and a practical commitment to peace.

If Canada is going to help build the next lunar era, it should help make peaceful use more than a promise. The point is not only to go farther. It is to go more wisely.

Jessica West is a Senior Researcher at Project Ploughshares. She can be reached at jwest@ploughshares.ca.

Duality in space is no longer just a technology problem

In mid-May, Ploughshares Senior Researcher Dr. Jessica West participated in a RAND workshop on "duality in space," focused on one of the central challenges in space security: how to understand activities that can support peaceful, commercial, civil, or defensive purposes, while also enabling military advantage, coercion, or harm.

Recent work, including Secure World Foundation's *Global Counterspace Capabilities Report* and the Vienna Centre for Disarmament and Non-Proliferation's *Space Norms Atlas,* shows both sides of the problem: capabilities are becoming more operational while shared expectations remain uneven.

Duality in space is not new. Satellites have long served both civilian and military purposes. Communications, navigation, Earth observation, weather monitoring, and space surveillance all blur simple distinctions between peaceful and military use.

But the challenge is changing. The issue is no longer only that a single technology can have multiple uses. It is that military-relevant space capabilities are increasingly being commercialized as services.

That matters because commercialization can make these capabilities easier to access, procure, scale, and integrate into military operations. It can also make them harder to interpret. When capabilities are delivered through commercial services, the line between routine activity, military support, strategic signalling, and coercive behaviour becomes harder to see.

This is already visible in Earth observation and intelligence, surveillance, and reconnaissance. It is also emerging in proximity operations, satellite inspection, on-orbit servicing, space situational awareness, cyber operations, and electronic interference. These activities may be described as protective, stabilizing, or routine. Under different circumstances, they can enable military operations, generate strategic advantage, or be read as threatening or coercive.

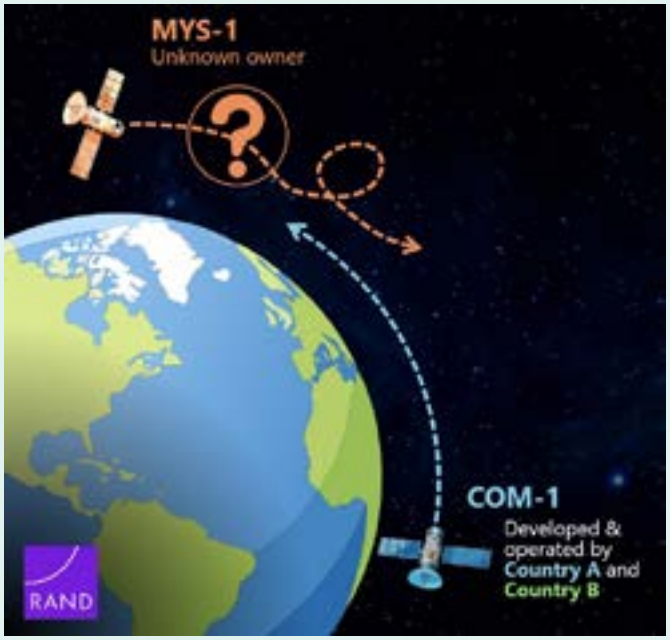


Image adapted from RAND Duality in Space Workshops. To learn more visit www.rand.org/pubs/presentations/PTA4003-1.html

That makes context essential. A satellite approaching another object may be inspecting debris, servicing a client, protecting an asset, or preparing to interfere. The action itself may not reveal its meaning. Was there consent? Was advance notice provided? Was the manoeuvre coordinated? How close did it come? Was there a reliable point of contact?

Existing legal and policy frameworks provide important foundations, including peaceful use, due regard, non-interference, transparency, and responsible behaviour. But many of these concepts remain underdeveloped in practice.

Working through scenarios at the RAND workshop made clear to West that duality is not simply a technical condition. It is a governance problem that becomes most difficult under pressure. As commercial and military space activities become more deeply entangled, the question is not only what systems can do, but how their actions are interpreted before mistrust or fear fills in the gaps. For Project Ploughshares, this is where space governance becomes a peace and security issue: ambiguity must be managed before it becomes a pathway to mistrust, escalation, or harm.

Canada's Growing Arms Exports Face Diminishing Accountability

Written by Kelsey Gallagher

Canada's February 2026 Defence Industrial Strategy (DIS) commits to a staggering 50 per cent increase in arms exports, marking what is likely the country's largest expansion into the global arms trade in modern history. Much of this growth, if realized, is likely to be directed toward the U.S., Canada's dominant and most deeply integrated defence market.

Yet the strategy seeks to dramatically increase arms exports without strengthening oversight. Canada's export control regime remains unchanged, including longstanding gaps in the regulation of U.S.-bound transfers, even as such exports can be re-transferred onward with limited visibility and with the risk of contributing to serious human rights violations. As U.S. arms control safeguards are themselves being dismantled, Canada's planned expansion risks proceeding along a pathway where controls are already weak and becoming weaker.

Without parallel reforms to its export control framework, Canada risks enabling a substantial increase in arms transfers to the U.S. that lack adequate oversight of their eventual end-use.

A 50 per cent Increase: What it Means in Practice

What a 50 per cent increase actually means in practice depends on the current scale of Canada's arms exports.

Canada is already exporting more military goods abroad than at any point in recent history. In the most recent reporting year, Canada exported $2.5 billion* in military goods, marking the third-highest annual total on record, surpassed only by $4.4 billion in 2019 and $3.1 billion in 2021.

These figures, however, do not include exports to the U.S. Although the U.S. is consistently the largest destination for Canadian military goods, most of those transfers are exempt from case-by-case human rights assessments conducted by Global Affairs Canada and, as a result, are not fully reported by the federal government. Findings published by the Canadian Association of Defence and Security Industries, which represents Canadian defence manufacturers, suggest that Canadian arms exports to the U.S. reached as much as $4.4 billion** in 2022.

Taken together, if the federal government's objective of increasing military exports by 50 per cent is realized, Canada's annual military exports could plausibly approach or exceed $10 billion in peak years. Yet despite the scale of this planned increase, the new Defence Industrial Strategy offers little indication that Canada's export control system will be strengthened in parallel, despite

** All dollar values are expressed in constant 2024 CAD unless otherwise specified.*
*** Expressed in current CAD.*

the demonstrable human rights risks posed by arms transfers.

Expansion without Safeguards

The strategy mentions Canada's export control regime only in passing, and only in the context of streamlining permit approvals and overcoming "regulatory hurdles" to integrate Canadian military goods into foreign supply chains. This framing should raise concern.

The export permitting process for controlled goods, particularly those regulated under Export Control List Group 2, is the cornerstone of Canada's conventional arms control regime and the primary mechanism through which Canada implements its international obligations, including those under the legally-binding Arms Trade Treaty. Expediting the process intended to mitigate human rights risks could have serious consequences for civilians abroad.

More significantly, the strategy's shortcomings are most acute where oversight is already weakest. Despite the DIS's emphasis on diversifying defence trade relationships, the path of least resistance will almost certainly channel a disproportionate share of any export increase toward the U.S., scaling arms transfers precisely where Canadian oversight is nearly non-existent.

This gap is particularly significant because, in many cases, Canadian military goods exported to the U.S. are not destined for American stockpiles, but instead are subsequently retransferred to third countries after being incorporated into U.S. weapons systems or included in American arms transfer programs.

Consequences of Unchecked Arms Transfers to the U.S.

The U.S. is by far the world's largest arms exporter, and many Canadian military goods transferred south of the border are ultimately destined for third countries, including through the U.S.-administered Foreign Military Sales (FMS) program.

Recent FMS notifications demonstrate how Canadian-made components and full systems are routinely transferred through the U.S. to foreign security forces:

Select recipients of Canadian military goods via U.S. FMS Program (2018-2024)

L3Harris WESCAM	2018	Iraq	5 MX-15DI EO/IR sensors for 5 armed Bell 407GX helicopters
Bell Helicopter Textron	2018	Iraq	Airframes for 5 armed Bell 407GX helicopters
Pratt & Whitney Canada	2019	Israel	7 PT6B-37A turboshaft engines for 12 AW119Kx helicopters
Bell Helicopter Textron	2020	Guyana	2 Bell 412EPi & 2 Bell 429 Light Utility Helicopters, 2 Wescam MX-10 EO/IR sensors
Pratt & Whitney Canada	2020	Israel	5 PT6B-37A turboshaft engines for 7 AW119Kx helicopters
Pratt & Whitney Canada	2021	Tunisia	8 PT-67A turboprop engines for 8 T-6C Texan II trainer aircraft
CMC Electronics Inc	2021	Tunisia	8 CMC Cockpit 4000 Avionics Suites for 8 T-6C Texan II trainer aircraft
General Dynamics Land Systems - Canada	2022	North Macedonia	54 Stryker light armoured vehicles
Pratt & Whitney Canada	2022	Israel	PT6B-37A turboshaft engines for AW119Kx helicopters
Pratt & Whitney Canada	2023	Belize	1 PT6A-140 turboprop engines for Cessna Grand Caravan EX
General Dynamics Land Systems - Canada	2023	Bulgaria	183 Stryker light armoured vehicles
General Dynamics Ordnance and Tactical Systems - Canada	2024	Israel	M933A1 120mm High Explosive Mortar Cartridges

These cases illustrate that Canadian military goods transferred to the U.S. do not remain confined to the bilateral Canada–U.S. relationship, but can ultimately reach a wide range of foreign recipients through American transfer chains, including some with deeply problematic human rights records.

The risks are not hypothetical. In September 2024, at the height of Israel's bombardment of Gaza, a Canadian crown corporation signed a contract with the U.S. Department of Defense to supply an unknown quantity of artillery propellant to the Israeli government. Much of the destruction in Gaza in the current conflict has resulted from the use of explosive weapons in populated areas, including artillery shells fired by Israeli forces.

The contract was signed despite Canada having suspended direct arms export authorizations to Israel on the grounds that they could be used in international humanitarian law violations in Gaza, including the very categories of goods being routed to Israeli stockpiles through the U.S. government. The Canadian government reportedly intervened to remove Israel from the contract, but questions remain about where these goods were ultimately transferred.

Dismantling of U.S. Controls

On February 6, 2026, U.S. President Donald Trump signed an executive order introducing sweeping reforms to the U.S. conventional arms control regime under the "America First Arms Transfer Strategy" (AFATS). The reforms substantially alter how the U.S. government approaches oversight and transparency in conducting arms transfers while removing key human

The Power of Many: Investors Navigate Climate and AI Risk

At this year's SHARE Investor Summit, held April 8–9 in Toronto, Senior Researcher Branka Marijan participated in a panel on defence technologies, with a particular focus on AI and investing.

Two issues dominated discussion at the conference: climate change and artificial intelligence. While often treated separately, both were framed as fundamentally about governance, accountability, and long-term systemic risk. Investors increasingly see themselves not simply as allocators of capital, but as stewards of complex systems facing technological, geopolitical, and environmental disruption. The idea of investors as empowered actors in shaping these systems emerged as a central theme, captured well by the conference title, The Power of Many.

Senior Research Branka Marijan (right) speaking at the 2026 SHARE Investor Summit in Toronto.

On climate, speakers emphasized that the debate has shifted beyond "green investing" toward protecting economies and portfolios from systemic shocks. On AI, discussions focused on practical questions of transparency, explainability, and maintaining meaningful human judgment as AI tools become embedded in investment analysis and proxy voting. Participants repeatedly stressed that accountability must remain human, even as AI accelerates decision-making and reshapes governance processes. The latter requires careful consideration and proposed a human agency impact assessment as one mechanism for ensuring that meaningful human judgment and control remain central to decision-making processes.

A common thread across both discussions was clear: the next phase of responsible investing will depend less on speed or branding and more on institutional resilience, credible governance, and the ability to navigate an increasingly uncertain technological and geopolitical landscape.

A Stryker light armored vehicle at Fort Irwin National Training Center, California, USA. Image credit: By Jarek Tuszyński / CC-BY-SA-3.0, https://commons.wikimedia.org/w/index.php?curid=17724239

rights safeguards.

The new strategy will shape not only how the U.S. conducts arms sales abroad, but also the operating environment for countries that supply military systems to the U.S. government, including Canada.

Under the AFATS, decisions approving U.S. arms transfers to foreign governments, including those conducted through the Foreign Military Sales program, must bolster American defence production and advance the objectives of the November 2025 National Security Strategy.

The National Security Strategy follows an April 2025 executive order rescinding the 2023 Conventional Arms Transfer policy, reducing what the current U.S. administration characterized as "red tape" in foreign arms sales. A central feature of the rescinded policy had been its stated objective of preventing arms transfers that risked facilitating violations of international humanitarian law. These considerations have now been removed from the American authorization process.

As noted by the Stimson Center, a nonpartisan U.S. think tank that analyzes issues related to global security, the April 2025 executive order curtailed "rules and regulations involved in developing and executing foreign defense sales," particularly within the Foreign Military Sales program, one of the primary mechanisms through which the U.S. government provides military goods to foreign states. These changes have also coincided with reductions in Congressional oversight, including the curtailment of advance notification to congressional committees of proposed arms transfers, as well as the U.S. government's disengagement from the UN Register of Conventional Arms.

Taken together, these developments heighten concerns that Canadian arms exports will be retransferred through the U.S. to problematic end users. This risk is compounded by both the limited oversight Canadian officials apply to U.S.-bound transfers and the increasingly reckless approach the U.S. government is taking to the human rights risks posed by its own arms sales.

A Problematic Path Ahead

Whether the new Defence Industrial Strategy will achieve its goal of significantly boosting Canadian arms exports remains to be seen. What is already clear are the risks the strategy introduces.

Barring a significant recalibration, the volume of Canadian arms flowing south is likely to increase substantially, even as the guardrails meant to prevent those weapons from contributing to serious human rights violations continue to deteriorate. The likely result is that Canadian military goods will reach an increasingly problematic set of end-users, with diminishing accountability for how they are used.

Kelsey Gallagher is a Senior Researcher at Project Ploughshares. He can be reached at kgallagher@ploughshares.ca.

Climate, Peace, and Security: What Role for Canada?

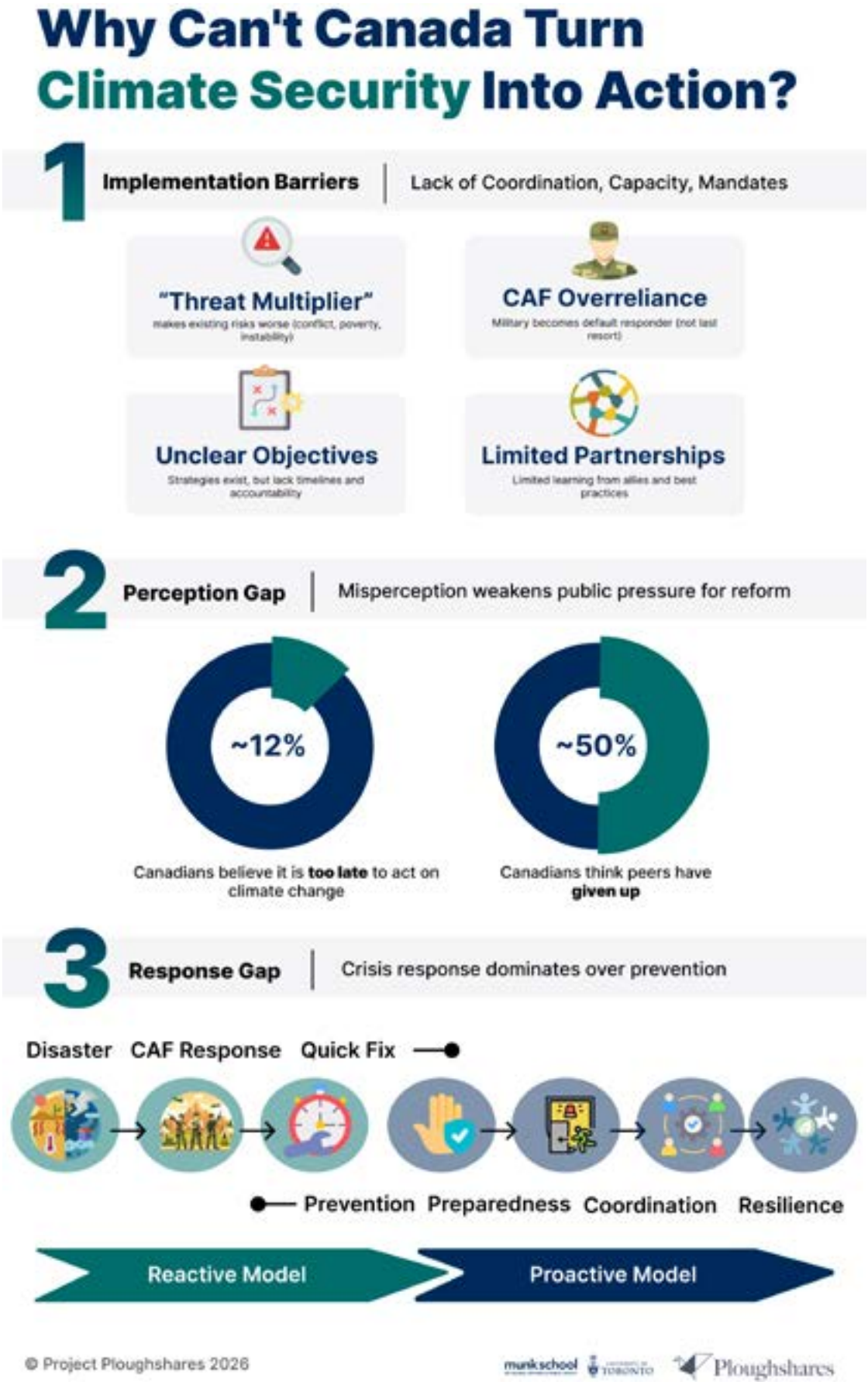
Climate change is no longer a distant environmental concern—it is an immediate and accelerating security challenge. Its impacts are already visible through the melting of Arctic sea ice, increasingly severe domestic disasters, pressures on critical infrastructure, and growing demands on the Canadian Armed Forces. As Minister of National Defence David McGuinty noted at the 2025 Montreal Climate Security Summit in 2025, "if we don't slow or reverse the effects of climate change, the bill will be paid in ever-increasing human suffering and insecurity."

> "[I]f we don't slow or reverse the effects of climate change, the bill will be paid in ever-increasing human suffering and insecurity.

From January to April 2026, Project Ploughshares Senior Researchers Jessica West and Branka Marijan worked with students from the Munk School of Global Affairs & Public Policy at the University of Toronto on a capstone project examining how climate-related security risks are addressed across Canada's foreign, defence, and development policy frameworks. Drawing on both a literature review and insights from a March 2026 stakeholder roundtable, the resulting policy brief explores the implementation barriers, perception gaps, and institutional challenges shaping Canada's climate security response.

The policy brief will be published on the Project Ploughshares website in the coming months. The following infographic highlights several of the project's key findings, including the need for stronger coordination, clearer accountability, and a shift from reactive crisis response toward long-term prevention and resilience.

The capstone project was carried out by: Asma Awan, Emmeline Caplan, Vladyslava Hedz and Will Hicks.


Why Can't Canada Turn Climate Security Into Action?
1
Implementation Barriers
Lack of Coordination, Capacity, Mandates
"Threat Multiplier"
makes existing risks worse (conflict, poverty, instability)
CAF Overreliance
Military becomes default responder (not last resort)
Unclear Objectives
Strategies exist, but lack timelines and accountability
Limited Partnerships
Limited learning from allies and best practices
2
Perception Gap
Misperception weakens public pressure for reform
~12%
Canadians believe it is too late to act on climate change
~50%
Canadians think peers have given up
3
Response Gap
Crisis response dominates over prevention
Disaster
CAF Response
Quick Fix
Prevention
Preparedness
Coordination
Resilience
Reactive Model
Proactive Model
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Canada and the Dangerous Fantasy of Nuclear Security

Written by Jessica West

It is surprising how quickly abnormal things can begin to feel ordinary: wearing masks during a pandemic, or questioning whether your country's sovereignty is secure.

I have been asked more than once this year whether Canada might pursue our own nuclear weapons. The question always catches me off guard. For Canada, the answer still feels obvious: no.

The fact that the question is being asked matters. It signals that nuclear weapons are again being imagined as a credible answer to insecurity. For Canada, that is a dangerous illusion. A national nuclear arsenal would not provide security or strategic independence. It would be a fantasy of control built around weapons that promise mass destruction, including our own.

The danger is not that Canada is on the verge of building a bomb. It is that nuclear weapons are becoming easier to discuss as ordinary instruments of sovereignty and defence. When serious people treat them as plausible answers to insecurity, fantasies of nuclear control begin to look like strategy.

Searching for an Anchor

This shift reflects something deeper than nuclear policy: growing uncertainty about whether existing systems can still provide security. Alliances feel less predictable. Strategic stability feels fragile. Sovereignty seems precarious.

In that environment, nuclear weapons can appear as something they are not. They seem to offer strength, certainty, and control, a way to anchor security in a churning world. This is the emotional pull of the nuclear fantasy. It promises that terror can be made orderly, and vulnerability overcome through the capacity for mass destruction.

But that sense of certainty is misleading. Nuclear weapons do not remove uncertainty. They embed it in decision-making, escalation, and the risks imposed on one's own population.

The Nuclear Revival

The shift is already visible internationally. Nuclear weapons are being pulled back toward the centre of security debate. Nuclear-armed states are modernizing arsenals and reaffirming the role of nuclear weapons in national security doctrines.

But this revival is not confined to nuclear-armed states. Among U.S. allies, questions about the durability of U.S. guarantees have fuelled debate about nuclear protection, dependence, and

alternatives, including a stronger role for French nuclear deterrence. Similar discussions have surfaced in Nordic countries and Japan, despite Japan's long-standing non-nuclear principles.

These developments do not point to imminent proliferation. But they do point to a critical shift. Boundaries that once kept nuclear weapons outside mainstream strategic debate are weakening, and the fantasy of nuclear security seems to be gaining respectability.

Speaking the Quiet Part

The Canadian nuclear question is not entirely new. During the Cold War, Canada hosted U.S. nuclear weapons before the last were removed in 1984. Since then, the nuclear question has persisted as a quiet undercurrent in Canadian defence thinking.

Speaking at a defence forum in Ottawa this year, former Chief of the Defence Staff Wayne Eyre suggested that Canada should not entirely rule out nuclear weapons, arguing that true strategic independence may be impossible without them. Others raised the idea that a "small" Canadian nuclear capability might be feasible.

This is how normalization works. It does not begin with a government program to build a bomb. It begins when influential voices present nuclear weapons as a mature response to insecurity, while the horror they entail is pushed out of view.

The government quickly rejected this view, reaffirming that Canada has no intention of pursuing nuclear weapons and remains committed to the Nuclear Non-Proliferation Treaty, under which Canada is recognized as a non-nuclear-weapon state.

There is no reason to think Canada is about to pursue a nuclear capability. But the public return of the question reveals something important. Nuclear weapons are becoming easier to imagine as guarantors of sovereignty, security, and strategic independence.

The Illusion of Normalcy

The nuclear taboo has helped make nuclear use politically and morally unacceptable. But it has done less to challenge the belief that nuclear weapons backstop security. Possession can still be treated as protective or stabilizing, so long as actual use remains almost unimaginable.

That gap matters. It is the space in which nuclear fantasy does its work. It allows nuclear weapons to be treated as symbols of strength or insurance, rather than systems organized around the threat of mass civilian death and environmental devastation. But nuclear weapons are not normal weapons. Credible nuclear deterrence is not simply about possessing a warhead. It depends on the ability to survive an attack, retaliate credibly, communicate under pressure, and manage escalation. Without survivable delivery platforms, early warning, hardened command and control, and secure communications, a nuclear force can become vulnerable and destabilizing.

This matters especially for middle powers like

Two BOMARC missiles at the North Bay Airport during an exercise. North Bay was home to 28 BOMARC surface-to-air missiles equipped with nuclear weapons from 1961 to 1972. Image credit: Department of National Defence

> To "have" nuclear weapons is not simply to possess an asset. It is to enter into a system defined by catastrophic risk.

Canada. A small national arsenal would not create true strategic independence. It would leave Canada dependent on U.S. and allied systems while giving Canada limited control over escalation. It would also alter how Canada is viewed in adversary planning, increasing the country's role as a direct object of nuclear targeting.

To "have" nuclear weapons is not simply to possess an asset. It is to enter into a system defined by catastrophic risk.

Resisting normalization

Preventing nuclear normalization does not mean refusing to engage this debate. It means refusing to let nuclear weapons function as a shortcut answer to insecurity.

The burden of proof must shift. Nuclear weapons should not be treated as symbolic shorthand for sovereignty, resolve, or credibility. Anyone arguing that Canada should move closer to possessing nuclear weapons should have to explain what problem those weapons would solve, what systems they would require, what risks they would impose on Canadian territory and people, and what defence priorities they would displace.

An aerial view of the BOMARC base at North Bay Airport shows its 28 missile bays, called "coffins." Image credit: Doug Newman, Wing Heritage Officer, (retired) Canadadian Forces Base North Bay

Keeping nuclear weapons exceptional

The Government of Canada is right to reaffirm its commitment to the Nuclear Non-Proliferation Treaty and to reject a national nuclear arsenal. That position remains sound, but it is not enough.

Canada should not treat rejection of a national arsenal as proof of nuclear innocence. It remains embedded in alliance structures that rely on nuclear deterrence. That means Canada should not only reject the idea of possessing its own nuclear weapons, but also question arrangements and rhetoric that make nuclear threats seem more usable, justifiable, or central to collective security.

At home, Canada should make the risks and consequences of nuclear weapons visible. Within alliances, it should resist the casual expansion of nuclear roles and nuclear rhetoric. Globally, it should treat nuclear restraint as a political effort to push back against the belief that security ultimately depends on the capacity for mass destruction.

The challenge is not only to oppose nuclear weapons, but to resist their normalization. They are not just another tool of statecraft. They are weapons of catastrophic violence. The fact that serious people are willing to discuss them does not make them serious instruments of security. Canada should have no part in making nuclear fantasies seem ordinary.

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Military AI Puts Middle Powers to the Test

Written by Branka Marijan

The Pentagon is preparing to dramatically expand its investment in autonomous military systems, part of a broader shift that could see tens of billions of dollars flow into AI-enabled warfare over the next few years. The Defense Autonomous Working Group, the office overseeing drone warfare, is set to see its budget explode from $226 million this year to $54 billion in 2027, a more than 240-fold increase. In addition, as Patrick Tucker notes, DARPA, the Pentagon's defence research arm, is pushing the frontier further by developing robotic systems that can operate independently, think more intelligently, and coordinate with one another. As these technologies move from laboratories onto active battlefields, the absence of any agreed international rules is becoming harder to ignore.

The United States is not alone in the increased spending. Defence investment in artificial intelligence is accelerating across the globe, matched by a surge in private capital. Nearly $48 billion of private capital flowed into defence AI in 2025 alone. Recent flashpoints, including American military activity in Iran and a public dispute between Anthropic and the Pentagon over the terms of its contracts, have pushed responsible military AI governance from niche preoccupation to mainstream security concern. What was once treated as a niche arms-control issue is increasingly emerging as a real-world governance challenge, one that will require middle powers to play a more active role in shaping how these technologies are developed, deployed, and constrained.

What vision for the middle powers?

The absence of a concrete response from middle powers, states with limited hard power but considerable influence over international norms and institutions, even as these technologies are increasingly deployed in contemporary conflict zones, reflects in part a failure of political will. Yet it also reflects a deeper uncertainty about what middle powers actually share, beyond a broad discomfort with a world increasingly shaped by great-power competition and technological acceleration. The term itself is imprecise, grouping together countries as diverse as Brazil, Canada, the Republic of Korea, Indonesia, and the United Arab Emirates. What, exactly, are the shared norms and strategic objectives that bind these states together? And do they remain meaningful when security, industrial policy, and technological competition are becoming increasingly intertwined?

Much of the current discussion centres on "AI sovereignty," yet the concept itself is difficult to sustain in practice. The infrastructure underpinning advanced AI, from compute and cloud capacity to semiconductors and frontier models, is deeply concentrated and globally interconnected. For many middle powers, genuine autonomy may be more aspirational than achievable. This creates a strategic dilemma. If the United States and China possess both the technological scale and financial capacity to drive the next generation of military AI, are middle powers engaged in a losing game by pursuing fragmented national approaches? Or does their influence depend pre-

cisely on working more closely together, pooling leverage, coordinating standards, and shaping the governance environment collectively?

The answer, increasingly, points toward collective action. The risks associated with military AI are already well understood in policy circles. Greater autonomy can compress decision-making timelines, reduce the space for human judgment, and complicate accountability. Even Washington and Beijing have signalled awareness that AI could trigger crises that escalate beyond control, with both sides quietly exploring potential guardrails. But the harder question is political rather than technical: whether middle powers, Canada among them, are prepared to move beyond rhetoric and define what kind of technological and geopolitical order they are actually trying to preserve or build. For now, many middle powers still appear to be finding their footing in a rapidly changing international system that is pushing them, somewhat unexpectedly, toward the front of the room.

The REAIM Summit in Spain

Still, the need for middle power engagement was visible at the third Responsible Artificial Intelligence in the Military Domain (REAIM) summit, held in A Coruña, Spain in early February. Support for the outcome document, the Pathways to Action, was more limited than at the previous gatherings in The Hague and Seoul in 2023 and 2024. Of the 35 countries that endorsed the text, neither China nor the United States was among them. China's absence among the endorsing states was not entirely unexpected; it also declined to sign the Seoul outcome document, even as roughly 60 countries did so.

More significant was Washington's relative withdrawal, with a much smaller US delegation present in Spain. The United States had until recently played a catalytic role in the process. Consider, for example, that at the conclusion of the inaugural summit in The Hague, the United States released a first draft of its Political Declaration on Responsible Military AI and Autonomy, giving early momentum to the initiative. Under the current administration, that declaration, and American engagement with the process more broadly, appears to have been quietly shelved. REAIM now faces a genuine question about its direction without American backing and how to move forward with an unpredictable US administration.

Yet the initiative has always been, in part, a story of middle-power entrepreneurship. The Netherlands and the Republic of Korea co-hosted the first two summits, and the Dutch in particular have shown a consistent willingness to take on convening and leadership roles where larger powers have hesitated. And, in turn, ensuring that middle powers have a seat at the table in these discussions. That same pragmatism was on display in A Coruña. For example, Dutch academics and officials presented an emerging model of open defence-AI governance built on collaboration among defence authorities, universities, industry, and civil society. The inclusion of civil society alongside industry is noteworthy. While defence departments have long maintained close ties with private contractors, the active participation of non-governmental organisations in shaping military AI governance remains unusual. Asked what distinguishes the Dutch approach, one participant pointed to a national culture of adaptation and a tolerance for managed risk.

The model is not without critics. Some of the panelists discussing trust in military AI acknowledged concerns about creeping militarisation and the risk that scholarly research agendas become too narrowly shaped by defence priorities. The Dutch are aware of the tension, but they note that they are also aware of the broader economic and defence stakes. Whether their model of managed risk proves appealing to other middle powers remains an open question, and arguably the central one for the initiative's next phase.

Spain, as host, sought to position itself as a responsible and measured actor on military AI, emphasising its efforts to integrate these technologies carefully. Ethics was prominent through the two days of discussion. Indeed, several speakers paraphrased the Spanish philosopher, José Antonio Marina, stating that ethics is the greatest technology, a framing that captured the summit's aspiration, even if it left unresolved how ethical commitments translate into enforceable rules. As Michael Horowitz and Lauren Khan argue, one possible path forward lies in advancing the REAIM process. Even without full participation

from the United States or China, the initiative could help develop confidence-building measures and practical rules of the road capable of evolving alongside rapid technological change.

processes, maintaining normative pressure and ensuring that governance discussions remain international rather than exclusively shaped by major-power competition. On the other, they could

HMAS Toowoomba and Royal Canadian Navy Ship HMCS Charlottetown operate side by side in the South China Sea. Image credit: Leading Seaman Zac Dingle, Australian Government Department of Defence

Toward a Dual-track Strategy

What broader multilateral efforts offer middle powers is more contingent. Forums such as the Convention on Certain Conventional Weapons (CCW) face some decisive months ahead, as states weigh whether it remains the central venue for sustained dialogue on lethal autonomous weapons systems. The CCW's consensus-based structure has long frustrated efforts to move from discussion to binding commitment, and its future as a meaningful forum is genuinely uncertain. What is clear is that some multilateral diplomatic space, formal or informal, must be preserved where states can test ideas, clarify positions, and sustain channels of communication amid growing geopolitical fissures.

For middle powers, this suggests a dual-track approach. On one track, they could continue engaging in UN forums and broader multilateral pursue more focused forms of coalition-building outside formal consensus structures, including perhaps in initiatives such as REAIM. For example, they could work on aligning procurement standards, coordinating approaches to accountability across the life cycle of weapons systems, and developing shared operational expectations among like-minded states.

Where middle powers ultimately land on these questions will face its next test in Geneva in mid-June, when informal discussions resume. The agenda is technical, the stakes are not.

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When Everything Becomes Dual-use

Written by Branka Marijan and Jessica Stewart

There is a particular kind of optimism embedded in the phrase "dual-use technology." It suggests that the same ingenuity powering a logistics algorithm or a climate sensor might, with modest adjustment, help a soldier navigate an Arctic blizzard or detect a cyberattack on a power grid. Canada's new Defence Industrial Strategy, released in February 2026, seems to share this optimism.

The bet is not irrational. After all, many technologies have commercial, civilian, and military applications. But the belief is incomplete. Canada increasingly risks treating innovation itself as defence strategy without first deciding what capabilities the country actually needs, what values should constrain their development, or who remains accountable when these systems fail.

In the gap between the strategy's ambitions and its guardrails lies a set of questions Canadians have barely begun to confront. Without clear strategic priorities and robust governance frameworks, today's "smart" innovation could become tomorrow's strategic liability. It could export Canadian-developed technologies to foreign actors better positioned to exploit them, channel public investment into technologies poorly aligned with Canada's actual security needs, or create dangerous diffusions of responsibility when systems fail. More fundamentally, there has been little serious discussion about the implications of the increasingly blurred boundaries between civilian and military infrastructure.

Friendly (and Not-So-Friendly) Competition

Canada is hardly alone in chasing the dual-use benefit. Governments, corporations and innovators across the NATO area and beyond are increasingly turning to dual-use technologies to capture the benefits of rising defence spending. By some estimates, there are roughly 17, 619 dual-use start-ups across NATO countries alone.

The allure of emerging technologies is clear. Invest in firms developing artificial intelligence, quantum sensing or advanced robotics, and policymakers promise a "security dividend." In theory, taxpayers benefit twice: through commercial productivity gains and next-generation military capability, all while easing pressure on government budgets.

Yet this dynamic is also fuelling sharper competition among allies for capital, talent and supply chains. For a country like Canada, ensuring that promising domestic firms are not simply acquired by larger foreign players will be an ongo-

Meta Clonee Data Centre in Ireland. Image credit: Thomas Nugent.

ing challenge. Canada continues to struggle with safeguarding domestic ownership of intellectual property and establishing governance frameworks that enable the country to retain and build upon innovations financed by Canadian taxpayers. Securing reliable supply-chain access for Canadian start-ups and small and medium-sized enterprises presents a further hurdle in a trade environment increasingly shaped by major-power rivalry.

The Dual-use Strategy

Dual-use technology can indeed be constructive. Technological advances that improve situational awareness, strengthens humanitarian response, or fortifies infrastructure against cyberattacks contributes to a safer Canada. But this only works when guided by clear principles, embedded safeguards, and rigorous export controls. Without these guardrails, what looks like smart innovation can enable irresponsible transfers, hollowing out national capability by exporting untethered technologies to adversaries better prepared to exploit them.

The core challenge facing the government of Canada today is strategic ambiguity. Canada's current defence strategies invoke emerging threats and great-power rivalry, but they fail to spell out what the Canadian Armed Forces must credibly do in the coming decade. Does Ottawa prioritize Arctic surveillance and resilient northern communications? Predictive intelligence-sharing within NATO? Or high-intensity deterrence in contested environments? Given mounting geopolitical pressures, an expansive "everything, everywhere, all at once" posture is understandable. What is needed now, however, is clearer prioritization and strategic coherence.

For dual-use innovation to serve the public interest, Canada needs a frank conversation on the purpose and limits of military capability in a volatile world. We cannot simply fund "tech" and hope it assembles itself into a defence strategy. The DIS aims to provide a roadmap for Canadian innovators to have greater clarity about where military demand and public investment are likely to emerge. Greater transparency and sustained dialogue between defence, industry, academia, and civil society are necessary to ensure that technological development proceeds thoughtfully, with clear consideration of ethical, strategic, and societal implications.

On the other hand, some innovations are primarily civilian in application and generate clear economic benefits. Their defence relevance may be less straightforward, but economic resilience is itself a core component of national defence in

today's geopolitical environment. A country that cannot sustain its industries, supply chains and innovation ecosystem cannot defend its interests or values for long. In implementing the DIS, Canada should ensure that innovation policy is not narrowly defined through military utility alone. Supporting technologies that contribute to climate resilience, food security, and broader peacebuilding efforts is equally important to long-term national and international security.

Still, good intentions are not enough. If Canada wants to lead responsibly, it must move beyond slogans about "innovation" and "strategic advantage." It needs a coherent framework that connects economic investment to national security in transparent and accountable ways, ensuring that the technologies it helps generate strengthen its values and long-term stability, rather than creating new vulnerabilities.

Canadian Armed Forces Technical Assessment Team member Sergeant Christopher King at work with a member of the Pimicikamak Cree Nation (Cross Lake) at a power generator in Cross Lake, Manitoba on 14 January, 2026. Photo Credit: Aviator (Avr) Daniel Bartchouk, Imagery Technician, Canadian Armed Forces Combat Camera

When Everything Becomes Dual-use

The deeper risk, however, is not merely that dual-use technologies complicate procurement. It is that this framing is beginning to erode the distinction between civilian and military systems. Artificial intelligence capabilities rely on commercial cloud computing infrastructure, privately owned data centres, civilian satellite networks, and globally distributed supply chains. Technologies initially designed for civilian logistics, communications, or data analysis are now routinely adapted for military and intelligence purposes, reversing the traditional flow of innovation. As governments deepen partnerships with commercial technology firms, civilian infrastructure becomes more deeply embedded in operational defence systems, blurring the traditional divide.

That evolution carries consequences. If everything becomes dual-use, then almost anything can be framed as strategically relevant during conflict. Infrastructure that civilians depend upon is increasingly be viewed as part of the battlespace itself.

Recent events suggest this dynamic is no longer theoretical. On March 1 of this year, three commercial data centres belonging to Amazon Web Services in the Gulf region were reportedly targeted by drones during military operations in the Middle East. As researchers Yasmin Afina and Federico Mantellassi have noted, the incident marked one of the first known attacks on commercial data centres linked to the growing role of digital infrastructure in warfare. Given the increasing dependence of military AI systems on commercial compute infrastructure, it is unlikely to be the last.

This is the conversation Canada and other middle powers need to fully confront. Dual-use innovation is often framed as a pragmatic middle path between economic growth and military capability. But as civilian and military systems become increasingly intertwined, the risks extend to escalation dynamics, civilian vulnerability, and the erosion of long-standing assumptions about what infrastructure should remain outside the battlefield. The challenge now is ensuring that technological competition does not outpace the governance structures needed to prevent civilian infrastructure from becoming part of an increasingly unconstrained battlespace.

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"The systems we were talking about were not futuristic... They were existing platforms that had degrees of autonomy in them, or the capability to select and engage targets based on sensor data and sensor input."

Branka Marijan
"AI Warfare is already here."
The Verge, May 2026

"As humanity continues extending its presence beyond Earth, the Moon is no longer simply a destination. It is **the next layer of systems that already shape life — and power** — on Earth."

Jessica West
"Artemis II and the next phase of space: what we're really building"
The National Observer, May 2026

"The US is not a State Party to the [Arms Trade Treaty] and therefore has significantly weaker safeguards when transferring military systems abroad... **Canadian munitions have been exported to other states through the US that Canadian policy would have barred** if they were exported directly."

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