# ICE PACT Unpacked

### **Event Report**

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## ICE PACT Unpacked Unpacking the Discussions

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On November 13, 2024, representatives from the Government of Canada, Government of the Republic of Finland, and Government of the United States of America signed a Memorandum of Understanding (MoU) "Regarding a Trilateral Framework for the Production of Arctic and Polar Icebreakers and other Capabilities." Formalizing an agreement first announced on July 11, 2024, the MoU elucidates the three nations' "mutually developed framework to enhance their collective capacity to design, produce, and maintain arctic and polar icebreakers, as well as other capabilities, by collectively increasing information exchange, industrial collaboration, and operational know-how." This trilateral partnership is referred to as the Icebreaker Collaboration Effort or ICE Pact.

In support of this initiative, representatives from academia, industry, and government gathered in Ottawa on December 9, 2024 for ICE Pact Unpacked. Organized by the Canadian Maritime Security Network (CMSN) and the North American and Arctic Defence and Security Network (NAADSN), the one-day event sought to facilitate an exchange of expertise to inform the process by which the governments will build upon the current statement of intent and flesh out what the ICE Pact can and should look like as it is translated into practice. The resulting discussion offered a range of insights, touching on how to build the requisite economies of scale, as well as the specific kinds and elements of cooperation needed to visualize the end state of this cooperation – including future opportunities and potential hurdles that could hinder the ICE Pact's operationalization.

### The ICE Pact Intent and Importance

The details of the ICE Pact are still under negotiation. To date, it remains a statement of intent, laying out the general principles under which the specific details of this trilateral pact will be determined and operationalized. At the core of the pact sit polar icebreakers.

#### The Threat

ICE Pact Unpacked highlighted icebreakers' importance to Canada, Finland, and the U.S. in the current era of escalating geopolitical tensions, evolving adversarial threats, and increasing great power competition and competitive activity in the Arctic. The summer of 2024 witnessed the highest level of Chinese and Russian activity ever seen in the Arctic. Russia, for which the Arctic contributes over 20% of the national GDP, maintains the

largest icebreaking fleet in the world. It is also constructing six Polar Class 4 (PC4) Ivan Papanin-class icebreakers that will enable it to maintain a sustained military presence in the Arctic, even outside of Russian waters. Meanwhile, China now boasts the largest shipbuilding industry internationally, and its forays into icebreaker construction have been benefiting from Russian assistance. Its Arctic presence is increasing in tandem with its icebreaker construction: Not only does China express interest in using the polar sea routes, but it operated five icebreakers in North America's Arctic in the summer of 2024. This presence is significant, especially given concerns regarding the ability – or inability – of Canada and the U.S. to muster a

#### **ICEBREAKERS**

According to the International Association of Classification Society (IACS) Standard, an icebreaker is a ship "specifically designed to operate aggressively in ice, which may include ramming of heavy ice features and close maneuvering in ice."

Icebreakers and icebreaking ships are usually categorized into ice classes to denote their general capabilities, such as the IACS's Polar Classes.

counter-presence. Participants in ICE Pact Unpacked thus framed the pact as an effort to challenge Chinese metanarratives of the outpaced, outcompeted, and "declining West" by advancing each nation's capabilities and restoring their ability to counter activities that do not abide by the international rules-based order.

Activity in the Arctic is also broadly increasing. The growing demand for Arctic resources and minerals, the burgeoning cruise tourism industry, and fishing fleets' operation further and further north are elevating the region's exposure to unconventional and hybrid threats. This activity will only increase as shipping grows in the Northwest Passage – potentially as a solution for the problems facing today's shipping routes. Security concerns in the Red Sea, low water levels in the Panama Canal, and geopolitical issues surrounding Russia's Northern Sea Route are driving demands for an alternative shipping route.

The experience with the Northern Sea Route has fuelled confidence that the Northwest Passage could present a viable and reliable alternative. The gradual reduction in the region's ice volume and extent as climate change progresses will only elevate the accessibility of Arctic waters. In such a changing environment, and at such a critical geopolitical juncture, the West's ability to maintain presence and domain awareness in the Arctic is imperative.

#### The Importance of the ICE Pact

In contrast to the steady ship production in Russia and China, shipbuilding – particularly of icebreakers – has largely atrophied in the West in recent decades. Finland is an exception, remaining a world leader in icebreaker design and construction. As such, the ICE Pact, at its core, seeks to redevelop lost expertise, to accelerate icebreaker production through an alignment of three nations with the shared objective of reinforcing their respective – and combined – Arctic capabilities. Such alignment, it is hoped, will allow for more affordable icebreaker procurement than if each nation were to pursue the construction independently.

The ICE Pact thus promises civilian and military benefits. In addition to rejuvenating domestic defence industries, it seeks to facilitate a renewed, physical presence in the North. Such a presence is key for national and NATO sovereignty in the Arctic, and ICE Pact activities, experts suggested, would send "strategic messaging" to competitors of domestic capability in an increasingly contested region. The pact offers a means to augment national security and shared defence interests in the North, to enhance allied domain awareness and NATO allies' capacity to secure the polar regions, and to detect and deter threats while also preparing for the prospect of a conflict spilling into the Arctic.

The ICE Pact's potential extends further. There is, for instance, a humanitarian response element. Since icebreakers often constitute the first responders to climate events like hurricanes, the ICE Pact could enhance disaster response capabilities, for instance facilitating responses to the regular flooding that now occurs in Alaska. So,

too, could it strengthen search and rescue (SAR) responses to incidents in Arctic waters. Participants in ICE Pact Unpacked also noted the potential for significant mutual economic benefits. They pointed to the ability to create thousands of well-paid and highly skilled jobs in Canada, Finland, and the U.S., as well as to enhance the workforces by consolidating expertise and exchanging information and best practices. The agreement also promises to support Blue Economy opportunities and marine industries, advocate for Arctic communities, engender a culture of continuous innovation, produce economic benefits throughout the supply chain, and ensure the security of supply chains for both Arctic residents and global trade. With their increased ability to source their own icebreakers, the three nations would be able to export their innovations, satisfying the global demand for icebreaking capacity by selling icebreakers or other equipment internationally, thereby diverting such purchases from adversaries.

#### The ICE Pact and National Policy Objectives

Beyond its prospective military, humanitarian, and economic benefits, the ICE Pact could also advance key national policy objectives for each nation. **American** representatives at ICE Pact Unpacked noted the American prioritization of a peaceful,

stable, prosperous, and cooperative region. The U.S. seeks to address the strategic competition posed by Russia and China, deter through the development of capabilities (including icebreakers), develop an "enhanced physical presence," bolster ties with NATO allies and regional partners, and expand the homeland's defensive footprint. The end goal of U.S. policy is to protect U.S. citizens, defend the American homeland, ensure the sovereignty of NATO territory, and maintain a free, prosperous, secure, and stable Arctic region that is governed by "internationally agreed-upon rules and norms." Achieving this goal will require improvements to the nation's icebreaking capabilities: Currently, it relies upon USCG cutters to

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maintain a presence in critical Northern regions like the Bering Sea and Beaufort Sea. USCGC *Healy* is overtaxed with its variety of presence, diplomacy, monitoring, and scientific duties. Participants identified America's need for eight or nine icebreakers to meet current requirements. Finland and Canada are seen as "trusted partners" to aid in their design and construction.

**Finnish** representatives pointed to Finland's geography when discussing its potential contributions. Finland is surrounded by the Baltic Sea and relies on navigating those

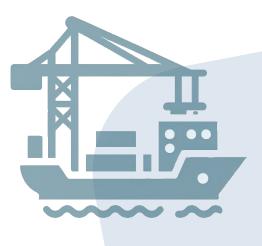
icy waters to maintain its ties with the West. Since its ports freeze in the winter, Finland relies extensively on icebreaking capabilities, especially since more than 95% of its imports and exports are moved by sea. This has fuelled the growth, over the last century, of a booming shipbuilding industry, supported by a maritime ecosystem of more than one thousand companies. With its first icebreaker constructed domestically in 1939, Finland has cultivated an extensive tradition and world-leading expertise in their production, with Finnish shipyards having constructed 60% and designed 80% of the icebreakers now plying the world's waters (according to Finnish participants). As such, Finland is uniquely positioned to construct the vessels and enhance cost effectiveness, with this vigorous shipbuilding industry serving as a key driver in the nation's interest in the ICE Pact.

Finland is also clearly interested in enhancing its strategic partnerships with key allies like Canada and the U.S. and aims to promote Finnish companies and strengthen their standing in the North American supply chain. At the strategic level, Finland also seeks an Arctic region that is cooperative, prosperous, and peaceful, making its participation both pragmatic and ideological.

**Canadian** government representatives tied the ICE Pact to the recently released Arctic Foreign Policy, as well as to the Trade Commissioner Service's objectives of expanding Canadian companies' international footprint and developing economies of scale. In the ICE Pact they see an opportunity to coordinate on safety and security, boost collaboration and innovation, enhance relationships with partners and allies with similar polar interests, and reconceptualize industrial development and collaboration. Canadian participants framed the ICE Pact as centring on the safety and security of the Arctic, enhancing national capabilities in the region, supporting Indigenous peoples, boosting domestic capacity for icebreaker construction and associated technologies, and promoting innovation, knowledge building, and skill development. All three nations have a similar desired end state for the region, and the ICE Pact promises to advance that end state.

#### **Industry Perspectives and Insights**

The ICE Pact remains an aspiration, a framework for collaboration that will require a plan for real execution. Industry will be integral to this operationalization. For their part, industry representatives at ICE Pact Unpacked highlighted the great promise of what the pact can achieve. One participant noted the opportunity to develop a new "centre of gravity for icebreaking excellence." There was optimism about the



possible impact on national industries, noting the pact's potential to develop mature designs, a skilled workforce, a quality supply chain, and advanced infrastructure, as well as the opportunity for shipyards to share knowledge and expertise, thereby enhancing their workforces, productivity, and efficiencies.

The possibility for extended contracts is also encouraging, offering shipbuilders and designers the long-term guarantees needed to maintain their workforces and reduce the knowledge gap. The ICE Pact could establish a niche capability and market that only the West can fulfill, given that Chinese shipbuilding activities are primarily commercial. Icebreakers may not be the only capability involved either. The MoU also includes research, development, and innovation in support of "future activities in the Arctic and polar regions," as well as "other capabilities." This represents a particular interest for industry.

#### Where Canadian Industry Can Benefit and Contribute

Canadian industry is poised to contribute significantly to the ICE Pact. It possesses shipyards on both the Atlantic and Pacific Coasts, as well as along the Great Lakes, that

Made-in-Canada systems and subsystems, as well as the national supply chains, represent the real opportunity for Canada. could offer ice-class maintenance or refits, and its shipbuilding industry has benefited from substantial investments under the National Shipbuilding Strategy (NSS). These investments have developed the national supply chain, as well as the capabilities and competitiveness of Canada's shipyards.

For instance, **Davie Shipbuilding** intends to be a strategic partner in the ICE Pact and is uniquely positioned to contribute to its success. It is the only shipbuilder with a presence in all three nations (with its impending expansion into the

U.S., announced in July 2024), and it is currently undertaking the delivery of the West's largest orderbook of heavy icebreakers. Its \$8 billion Newbuild Orderbook includes flagship polar icebreakers, program icebreakers, and ice-capable ferries. This presence and experience positions the shipbuilder with a skilled workforce, knowhow, and the mature designs and processes required to deliver on the ICE Pact, especially since Davie owns Helsinki Shipyard. Offering "world-class knowhow" and excellence in project management, design, and engineering, Helsinki Shipyard has constructed 54% of the world's icebreakers. It is also "fully embedded in the local icebreaking ecosystem," offering a model for emulation in North America.

Representatives from **Seaspan Shipyards** noted the complexity of the project, cautioning that "this is not your average shipbuilding activity." Still, their shipyard has much to offer in the ICE Pact's operationalization. Seaspan is currently engaged in designing and constructing an offshore oceanographic science vessel, a PC2 icebreaker for the Canadian Coast Guard, and up to sixteen PC4 multipurpose vessels. Equipped with mature designs, capable plants, and a strong workforce that will have excess capacity as national programs wax and wane, Seaspan also boasts in-house design capabilities, shortening the feedback loop between those designing and those constructing. Its construction of Polar Class vessels offers the yard the ability to export elements of those projects to Finland and the U.S., with Seaspan's engineering capabilities representing an element that shipyards in all three nations could exploit.

Opportunities will not be exclusive to the main shipyards. Canada's supply chain is reportedly "cautiously optimistic" about the ICE Pact, seeing the potential for its deeper integration into the international specialist supply chain. Canada boasts leaders in key innovative technologies, including strong design companies (such as Robert Allan, AMS, Concept Naval, and Genoa), strong niche equipment companies (like Thordon and Bronswerk), a strong high-tech sector (with, for instance, Kraken, Barnacle, and Marine Thinking), and strong international offices (such as those of Vard, BMT, and Hawboldt). Made-in-Canada systems and subsystems, as well as the national supply chains, represent "the real opportunity for Canada," for one participant, especially given Canada's free-trade agreements with the U.S. The potential to establish common supply chains building common parts was seen to have notable value, especially in reducing lifecycle expenses.

#### Industry Concerns, Questions, and Needs

Industry participants cautioned that designing icebreakers is a difficult enterprise. Though the ICE Pact aims to simplify and expedite the process, representatives

identified a variety of issues to confront and needs to meet. They noted the requirement, above all, for a skilled workforce (which has largely atrophied in North America) and the infrastructure required to construct, repair, and maintain the ships. While North America lacks the supply chains needed for icebreaking vessels, those chains exist in Finland. A broader supply chain will thus need to be established to offer access to quality materials throughout the three nations. One representative predicted that the physical shipbuilding under the ICE Pact will occur in Finland, given the existing capability there, as well as

A broader supply chain will thus need to be established to offer access to quality materials throughout the three nations. the critical asymmetry in the three nations' shipbuilding ecosystems. The Finnish industry is more integrated, maintaining a tight bond with government and receiving more national recognition. This offers, for industry, a "great model to look at with how we make this a success."

Operationalizing the ICE Pact will also require mature designs, with which North America has tended to struggle. The dearth of such designs prolongs construction timelines and raises costs. It will be integral, from an early stage, to clarify the icebreakers' missions and systems, since such considerations dictate the vessels' architecture. Proceeding with construction "for the sake of it," without elucidating their intended missions, risks producing vessels that are suboptimal for their ultimate missions. Similarly, one participant noted that it will be key to transfer knowledge, not just information, so the program can begin with the knowledge and experience needed to avoid the long-term costs that arise as yards learn while constructing. Industry will thus need a mechanism to transfer such expertise, skills, capabilities, and processes between institutions and people.

Industry representatives identified a number of questions that will need to be answered as the ICE Pact moves into and through its implementation phase.



#### **Key Questions Identified**

- Would the final agreement involve common parts, and would the development of a common fuel standard be warranted, to allow icebreakers the ability to fuel from anywhere in Canada, the U.S., or Greenland?
- Who are the anticipated clients for the icebreakers, and what is the source of the capital for their construction?
- To what extent can and will the icebreakers be "future-proof," accounting for, for instance, the rise of autonomous shipping, and to ensure their continued relevancy in the face of climate change and ever-evolving technologies?
- How will the concentration of construction that is needed for economies of scale be balanced with the political, economic, and industrial requirement to spread the enterprise between the nations?
- How will the agreement impact existing Canadian programs and be integrated into the work underway under the NSS?
- **D** To what Indigenous or Industrial and Technological Benefits (ITB) Policy requirements may the program be subject?
- Which discussions will have to occure before the ICE Pact can be implemented and operationalized? Who are the main actors, and what vehicles are needed to host these conversations?

Overall, industry representatives highlighted that creating an icebreaker-construction industry will be a complicated and time-intensive process. As such, they reiterated the need to ensure that industry is consulted throughout the process and that there is "a symbiotic relationship between industry and government." This symbiosis is crucial because it is industry – not government – that constructs ships, that possesses the manufacturing expertise, that has

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cultivated the international and inter-industry relationships needed for the ICE Pact to reach its potential, and that can best inform high-level decisions and identify who is capable of undertaking what. In Canada especially, participants perceived that the federal government "could do more to talk to Canadian industry in the design and implementation" of the agreement, calling for the development of a more coordinated "Team Canada" approach. Replacing the currently siloed government support for shipbuilding with an "all-of-government" approach is key to engaging critical departments, as well as their ability to become involved in the maritime sector.

#### The Challenges and Hurdles of Operationalizing the ICE Pact

The ICE Pact has vulnerabilities that could undermine its progress. Politically, it could face complications with the transition to a new protectionist administration in the U.S., as well as the attendant possibility of tariffs and a "Buy America" focus. As the new administration refocuses and reevaluates its priorities, it will be imperative to reinforce the agreement's rationale and value, illustrating how it addresses key strategic concerns. Participants reflected that it will be critical to depict the agreement in language that will maintain interest in the ICE Pact, for instance by framing it as allies sharing the burden and reinforcing the political and economic benefits. Future changes in political leadership in Finland and Canada could similarly have the potential to stall momentum.

ICE Pact Unpacked identified a range of other political hurdles. Attendees noted the possibility of challenges in coordinating production not only between nations – each with their own national barriers, administrative frameworks, and legal speed bumps – but within each nation. In Canada, for instance, regionalism and the influence of political connections could come into play, legal roadblocks like the ITB Policy could delay progress, and it is unclear whether operationalization would require federal or provincial/territorial agreements (or both). Participants pondered if means could be

found within the ICE Pact to shed some of this political baggage and bypass some administrative hurdles.

Another participant pointed to the dangers of siloed political approaches and strategies, noting that broader frameworks offer much-needed coherence and that Canada, for instance, lacks a broad framework like a National Security Strategy. The Canadian procurement system itself has also historically presented challenges.

Another potential impediment to the pact's implementation stems from the U.S. Jones Act, with its "Buy American" requirement. While participants of ICE Pact Unpacked were divided on the extent to which the Jones Act will apply in this case, with some insisting that it has a solely commercial application and would not impact icebreakers, others pointed to the act as restricting America's ability to purchase ships or their components. Given that the U.S. currently lacks the industrial capacity to construct icebreakers – with the one or two shipyards that possess adequate capabilities likely being subject to capacity challenges and timing issues that would necessitate looking to Finland and Canada – this would represent a critical challenge. If legal restrictions do inhibit the external construction of U.S. icebreakers, a whole-of-entity or "total package approach" may be required. This could entail the U.S. physically developing its

icebreakers, while allotting support and maintenance duties for their sustainment and repair – activities not subject to the same legal restrictions – to Canada and Finland. Participants also pointed to the existence or possibility of a presidential exemption waiver for icebreaker construction in the U.S.

#### Strategic Communications

The discussion also revealed potential challenges stemming from perceptions of the ICE Pact. Participants cautioned of Legal and labour mobility issues could similarly arise as companies share intellectual property and proprietary materials. Participants also noted a scarcity of labour, a dearth of young people engaging in such industries, as well as difficulties with crewing vessels, given current challenges with recruitment and retention.

possible issues arising from disinformation and misinformation regarding the agreement's interpretation, as well as the challenge of sustaining interest in the pact while managing expectations. In Canada, the lack of a strong national identity in the marine space was perceived as an issue. While Finland acknowledges the importance of its maritime sector, given its contributions to the national GDP and workforce as well as its geostrategic and geopolitical importance, participants did not perceive a

similar appreciation for the maritime sector within Canada. They questioned whether Canadians are aware of their shipbuilding industry's importance and noted the public's focus on negative news points, such as when a vessel breaks down.

This "maritime blindness" is a problem that must be addressed, with participants suggesting the need for a high-level national champion to sell the endeavour and maintain its momentum. They also reflected on ways to reframe the pact in the public narrative, such as by stressing its economic promise, emphasizing the humanitarian and SAR response element, or depicting it as a collaboration of three allies to "catch up" and protect the Arctic and national interests. Such strategic communications, or StratCom, is inherently difficult, particularly when it involves several intents, industries, and languages.

Internationally, StratCom is already presenting challenges. China's coverage of the pact, in the media and academia, has tended to frame the agreement as "small circle diplomacy," seeking to wall off the Arctic from broader access, and having primarily military and strategic purposes – being essentially another iteration of AUKUS. Noting that certain actors will always see vicious intent, participants indicated that a challenge for the pact will be to frame it more positively on an international scale to counter false narratives and, it is hoped, avoid direct comparisons with AUKUS. StratCom could do so, for instance, by framing the pact as three competitors collaborating for the benefit of all. Overall, attendees noted that StratCom is a pivotal consideration that must be integrated into the pact's implementation plan. They questioned who will bear responsibility for it and what efforts are underway to develop a plan and coordinate endeavours.

#### Economic, Environmental, and Industrial

ICE Pact Unpacked revealed a host of other hurdles. One participant questioned the pact's economic sustainability, when the Arctic constitutes a minute share of Canada's and America's GDP, which may deter substantial investments into icebreakers. Others noted environmental concerns. Challenges with implementing the pact were readily identified, both by industry and others reflecting on industry's role in operationalizing it. Industry participants noted challenges in national procurement, discerning realistic timelines, the design process, incentivizing industries to overcome their competitive tendencies, and ensuring efficiency. They pointed to potential interference in ships' requirements and questioned whether professionals will be able to easily cross borders in support of the program, without immigration issues. Legal and labour mobility issues could similarly arise as companies share intellectual property and proprietary materials. Participants also noted a scarcity of labour, a dearth of young people engaging in such industries, as

well as difficulties with crewing vessels, given current challenges with recruitment and retention. Other complications could arise as industry navigates what corporate social responsibility looks like in the shipbuilding context, particularly with Indigenous peoples.

Perhaps the most obvious hurdle, from an industrial standpoint, is the gap that presently exists between the demand for icebreakers and the ability to deliver on that demand. It was widely acknowledged that the U.S. in particular lacks the current capacity to undertake such a complex project. Though Helsinki Shipyard offers an excellent model to emulate in Canada and the U.S., there are certain to be challenges in replicating that shipyard and its ecosystem in other nations. One obvious dilemma is the asymmetrical cohesion among the governments and industries of the three nations. While Finland boasts a strong connection between its government and its industries, Canada and the U.S. lack such bonds, which may prevent the ICE Pact from achieving its potential. Finland also possesses a strong marine ecosystem that has traditionally been able to sustain itself without needing to integrate new elements into its supply chain, which could complicate efforts to integrate Canadian industry and solutions into the supply chain. Moreover, in the event that the bulk of the physical construction occurs in Helsinki instead, participants noted the potential for issues with the European Union, given the distinctive nature of Helsinki's build strategy, in which European blocks are purchased and thereby assembled in Helsinki.

#### **Key Takeaways**

Although the ICE Pact is only a statement of intent, it holds significant promise for its three participating nations. It offers the opportunity for Canada, the U.S., and Finland to enhance their humanitarian, disaster response, and SAR capabilities. It promises opportunities for science diplomacy and scientific research, for Canada to revisit the NSS and share the lessons it has learned during the revitalization of its own shipbuilding industry. It offers the opportunity to create a hub for the development of green and icebreaking technologies for polar or harsh environments, to design and construct new classes and even a new age of icebreakers boasting a reduced environmental impact. Activities under the ICE Pact have the potential to advocate for polar communities, to support Blue Economy opportunities, and, more broadly, to fuel economic growth through exports and the creation of well-paid and highly skilled jobs. Perhaps most critically, it promises the NATO allies the ability to match presence with presence, to bolster domain awareness, and to affirm national and NATO sovereignty in the Arctic in an era of increasing geopolitical tensions and escalating great power competition. Implementing the ICE Pact could add another dimension and element to Arctic cooperation and overall diplomacy, at what appears to be a critical juncture in the history of the Arctic.

#### **Event Hosts**

The Canadian Maritime Security Network is a dispersed research organization, tying together Canadian and international academic and professional organizations engaged in maritime security research. Its purpose is to provide the Government of Canada with timely and relevant policy advice while advancing public understanding of maritime security issues.

The North American and Arctic Defence and Security Network (NAADSN), established in 2019, is a MINDS Collaborative Network conducting cutting-edge research across three scales (circumpolar and international, North America, and Canada) on Defence in the Arctic, Securing North America and Enhancing Continental Defence, and Climate Change and the Environment. Our agile and diverse network, a series of nodes and ties, enables our team to respond efficiently to emerging issues and present relevant and timely advice to the Defence Team.



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