

# CHINA-RUSSIA COOPERATION IN THE ARCTIC

PATTERNS, CONSTRAINTS, &  
POLICY IMPLICATIONS



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**ICAS**  
Institute for China-America Studies



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## Executive Summary

The Arctic is undergoing rapid transformation as climate change accelerates sea-ice retreat, expands seasonal navigability, and increases global interest in the region's energy resources, shipping routes, and strategic significance. In this evolving environment, cooperation between China and Russia has attracted growing international attention. While Russia is an Arctic coastal state with extensive jurisdiction and infrastructure in the region, China has gradually expanded its Arctic engagement through investment, scientific research, and participation in regional governance mechanisms.

This report examines the scope, drivers, and constraints of China–Russia cooperation in the Arctic and evaluates its implications for regional governance and security dynamics. The analysis finds that bilateral cooperation is best understood as a pragmatic, project-based alignment rather than a fully integrated Arctic strategy. Russia remains the dominant actor in this partnership because it controls the territory, regulatory authority, and infrastructure underpinning most of the commercially significant projects in the Russian Arctic. China's role is most significant where it can contribute financing, market demand, industrial capacity, and selective technological inputs, particularly in large-scale energy and logistics projects.

At the same time, this partnership is shaped by several structural constraints. Sanctions, technology restrictions, financial uncertainties, environmental risks, and differences in long-term strategic priorities all limit the depth and pace of cooperation. As a result, China–Russia engagement in the Arctic is likely to remain selective and pragmatic, expanding where economic incentives are strong while staying cautious in politically sensitive sectors.

Beyond bilateral relations, the growing interaction between China and Russia carries broader implications for Arctic governance. Increased infrastructure development, shipping activity, and resource extraction are likely to raise the demand for stronger environmental safeguards, safety standards, and predictable regulatory frameworks. Meanwhile, heightened strategic attention from the United States and its allies is reshaping the geopolitical environment in which Arctic cooperation unfolds.

Overall, China–Russia cooperation will remain an important factor in the evolving Arctic landscape. However, it should not be interpreted as a unified strategic bloc in the region. Its future trajectory will depend on the interaction of economic incentives, geopolitical pressures, environmental constraints, and the continued evolution of Arctic governance institutions.

**1. China–Russia cooperation in the Arctic is primarily pragmatic and project-driven.**

Rather than forming a unified strategic alliance in the Arctic, the partnership is centered on specific projects—particularly in energy development, shipping logistics, and infrastructure. Economic incentives remain the primary driver of cooperation.

**2. Russia remains the agenda-setter in Arctic development.**

As the largest Arctic coastal state, Russia controls access to key resources, infrastructure, and regulatory frameworks along the Northern Sea Route. China’s participation depends largely on Russia’s willingness to open projects to external investment and cooperation.

**3. Sanctions and technological constraints significantly shape the trajectory of cooperation.**

Western sanctions on Russia have increased Moscow’s interest in Chinese investment and technology. At the same time, Chinese firms remain cautious due to concerns about secondary sanctions, financial risk, and project viability.

**4. Expanding economic activity in the Arctic will increase pressure on governance frameworks.**

Growing infrastructure development, shipping activity, and resource extraction will require stronger environmental safeguards, safety regulations, and clearer operational standards in a fragile Arctic ecosystem.

**5. Arctic governance will increasingly involve both regional and extra-regional actors.**

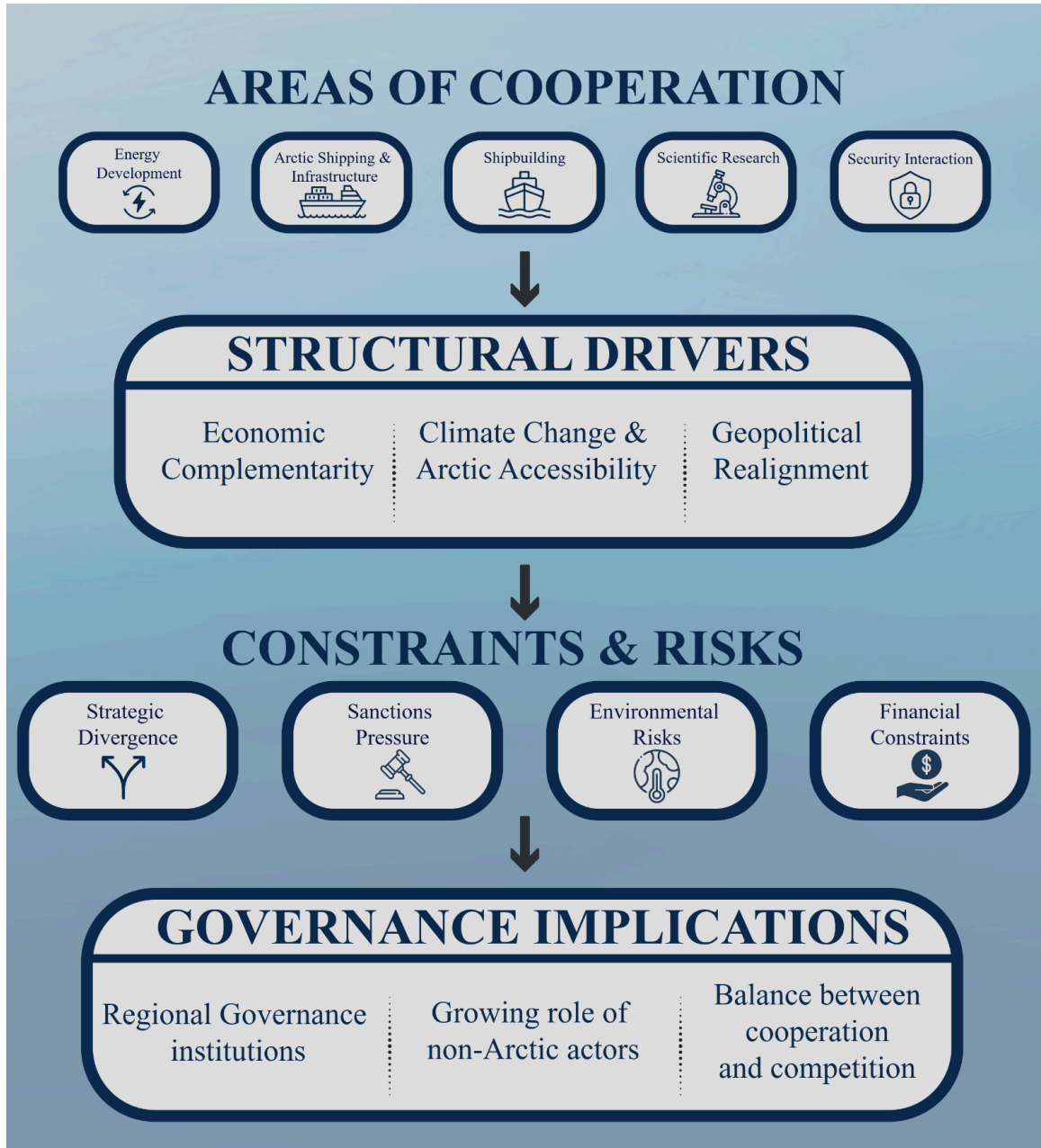
The participation of non-Arctic stakeholders such as China is becoming more prominent, particularly in scientific research, infrastructure investment, and maritime operations. Managing the balance between Arctic state authority and broader international participation will remain a central governance challenge.

## 1. Introduction

The Arctic has become an increasingly important arena where environmental change, economic development, and geopolitical competition intersect. As sea ice retreat gradually increases the accessibility of Arctic waters and global interest in the region's energy resources and shipping routes grows, the Arctic is attracting greater attention from both Arctic and non-Arctic actors. Among these developments, the evolving interaction between China and Russia has emerged as one of the most closely watched dynamics shaping the region's political and economic landscape.

China and Russia approach the Arctic from different positions but with increasingly overlapping interests. Russia, as the largest Arctic coastal state, views the region as central to its national development strategy, energy export strategy, and security posture. China, although not an Arctic state, has gradually expanded its involvement through scientific research, infrastructure investment, and participation in Arctic governance mechanisms as an observer to the Arctic Council. These parallel interests have created opportunities for cooperation across several sectors, including energy development, Arctic shipping routes, shipbuilding, scientific research, and selected security-related activities.

This report examines the evolving scope of China–Russia cooperation in the Arctic and evaluates its broader implications for regional governance and geopolitical dynamics. It first analyzes the key areas of bilateral cooperation, then explores the structural drivers that have encouraged closer engagement between the two countries, and finally assesses the challenges and constraints that may shape the future trajectory of this partnership. In doing so, the report also considers how expanding China–Russia interaction may influence ongoing debates about Arctic governance, the role of non-Arctic actors, and the balance between cooperation and competition in the region.



**Figure 1. Analytical Framework of China-Russia Cooperation in the Arctic.**

The figure illustrates the reports' analytical structure, linking sectoral cooperation between China and Russia in the Arctic to underlying structural drivers, key constraints, and broader governance implications.

### 2.1 Historical Context

China–Russia cooperation in the Arctic has evolved gradually over the past two decades, shaped by shifting geopolitical conditions, economic interests, and changing environmental realities. Early interactions between the two countries in Arctic affairs were relatively limited and primarily focused on scientific research and exploratory exchanges. China’s engagement in polar research expanded during the 1990s and early 2000s through participation in international scientific programs and the establishment of Arctic research institutions, while Russia remained primarily focused on maintaining its sovereignty and economic interests in its Arctic territories.

A more substantive phase of cooperation began to emerge in the early 2010s, when Russia increasingly sought external investment and markets to support large-scale Arctic energy development. Western sanctions imposed on Russia following the Ukraine crisis in 2014 further reinforced Moscow’s interest in diversifying its economic partnerships, including closer engagement with China. During this period, China also intensified its interest in Arctic economic opportunities, particularly in energy development and shipping routes, viewing the region as a potential extension of its broader global connectivity initiatives.

The announcement of China’s “Polar Silk Road” concept in 2018 marked another important milestone in the evolution of bilateral Arctic engagement. Framed as part of the Belt and Road Initiative, the Polar Silk Road emphasized cooperation in Arctic shipping, infrastructure development, and resource exploration. This policy framework provided greater political support for Chinese participation in Arctic-related projects and facilitated deeper economic collaboration with Russia, particularly in sectors where Chinese financing, industrial capacity, and market demand could complement Russian resource endowments.

At the same time, the development of the Northern Sea Route (NSR) and large-scale liquefied natural gas (LNG) projects in the Russian Arctic created concrete opportunities for cooperation. Russian authorities sought foreign investment, technology partnerships, and long-term energy buyers to advance these projects, while Chinese state-owned enterprises and financial institutions demonstrated growing willingness to participate. These dynamics laid the foundation for the current phase of China–Russia Arctic cooperation, characterized by pragmatic project-based collaboration rather than a fully institutionalized strategic framework.

## 2.2 Energy Cooperation

The Arctic is rich in oil and natural gas resources, with an estimated 13% of the world's undiscovered oil and 30% of its undiscovered natural gas, making it a key frontier for energy development. As the country with the largest territorial presence in the Arctic, Russia has leveraged its geographical position to expand energy cooperation with China. Notably, the Yamal Liquefied Natural Gas (Yamal LNG) project and the Arctic LNG 2 project serve as flagship initiatives of this collaboration.

These projects capitalize on the complementary strengths of both countries: China's technological innovations in LNG transportation and its strong financial capabilities complement Russia's extensive experience in polar resource extraction and Arctic energy operations. This partnership has contributed to the modernization of Arctic energy infrastructure while also supporting the diversification of global LNG supply chains.

### *Joint China–Russia Energy Projects*

A cornerstone of China–Russia energy collaboration, the Yamal LNG project exemplifies the integration of financial, technological, and operational synergies. Located on the Yamal Peninsula in northwest Siberia, this facility taps into vast natural gas reserves to produce LNG for global markets. By 2024, Yamal LNG was shipping approximately 19.6 million tons of LNG annually, reinforcing its role as a major contributor to global energy supplies.<sup>1</sup> China National Petroleum Corporation (CNPC) holds a 20% stake in the project, while China's Silk Road Fund owns an additional 9.9%, bringing China's total ownership to nearly 30%.<sup>2</sup> These investments reflect China's strategic interest in securing long-term energy supplies and diversifying its energy portfolio. Yamal LNG's reliance on Chinese financing and engineering support highlights the mutually beneficial nature of this partnership.

Building on the success of Yamal LNG, Arctic LNG 2 represents the next phase of Russia-China energy collaboration. Located on the Gydan Peninsula, the project aims to produce 19.8 million tons of LNG annually across three liquefaction trains.<sup>3</sup> China's involvement includes a 20% stake, split equally between CNPC and China National Offshore Oil Corporation (CNOOC), ensuring continued access to Arctic energy resources.<sup>4</sup>

The Arctic LNG 2 project has achieved significant technological breakthroughs, particularly through its adoption of the Gravity Base Structure (GBS) liquefaction platform. This technology reduces the environmental footprint of traditional offshore platforms while improving operational efficiency. Despite facing Western technological restrictions and financial sanctions, the project has maintained steady progress, illustrating the ability of the China–Russia partnership to adapt to external constraints.

As the project operator, Russia's Novatek has made notable advances through independent research and development. Its innovative "Arctic Cascade" mid-scale liquefaction technology has been successfully implemented in the fourth production line of the Yamal LNG project, with an annual capacity of one million tons. In April 2023, Novatek further introduced the "Arctic Cascade Modified" technology, marking a continued improvement in Russia's LNG production capabilities. This development provides new technological support for the sustainable development of Arctic energy resources.<sup>5</sup>



The Vladimir Rusanov, an LNG tanker ship, is seen following its arrival at the LNG terminal in Nantong city, eastern China's Jiangsu province on July 19, 2018, following its journey from Russia's Arctic Yamal peninsula. (Photo by CN-STR / AFP via Getty Images)

### *Challenges and Impact of Western Sanctions on Arctic LNG 2*

Arctic LNG 2 faces persistent obstacles, including harsh environmental conditions, high production costs, and mounting international sanctions, all of which necessitate innovative solutions to sustain progress. Western sanctions have severely disrupted the project, particularly by restricting ship construction and procurement, delaying the delivery of essential icebreaking LNG carriers and pushing back initial shipments originally slated for early 2024.<sup>6</sup> The uncertainty surrounding these setbacks raises concerns about the project's long-term viability.

Beyond logistical delays, sanctions targeting Russia's energy sector have constrained access to advanced technology and financing, posing broader challenges for Arctic energy development. Restrictions on subsea and Arctic drilling equipment and Western financial support have forced companies to seek alternatives. Similar constraints previously affected Yamal LNG, leading to delays and cost overruns. Arctic LNG 2 now faces comparable hurdles, particularly in securing European equipment suppliers.

Despite these difficulties, Russia has adapted by turning to non-Western suppliers and accelerating domestic production of critical technologies, reflecting a broader shift in its energy strategy.<sup>7</sup> However, recent developments, such as the withdrawal of China's Wison New Energies from certain Russian projects, further complicate Arctic LNG 2's construction and supply chain, adding another layer of uncertainty to its future.<sup>8</sup>

### *China's Role in Russian Arctic Energy Projects*

Against the backdrop of Western sanctions, China has provided critical support to Russia's Arctic energy projects through multiple channels. Financial institutions such as the Silk Road Fund have played a key role by filling the funding gap left by Western capital withdrawals through equity investments and other means, ensuring the continued progress of landmark projects like Yamal LNG. Notably, the Silk Road Fund holds a 9.9% stake in the Yamal LNG project, making it a vital strategic investor.<sup>9</sup> Beyond financial support, Chinese enterprises have also supplied essential equipment and construction materials for these projects.

China's participation has helped sustain Arctic LNG projects while also expanding its economic presence in the region. This engagement serves China's broader goals of diversifying energy sources and transitioning from coal to gas consumption. Additionally, China's expertise in large-scale infrastructure development and its focus on renewable energy integration could contribute to enhancing the sustainability of Arctic energy projects.

However, as geopolitical dynamics evolve, this cooperation also faces new challenges. Western sanctions have led to delays in equipment deliveries, complicating project operations. Additionally, China's involvement in Russia's Arctic energy sector has drawn widespread international scrutiny and debate. Critics raise concerns from three main perspectives. First, this collaboration could undermine the effectiveness of Western sanctions on Russia, potentially affecting the international community's unified stance on the Ukraine issue. Second, deep Chinese involvement poses the risk of secondary sanctions—such as in the case of Wison New Energies, which continues supplying power plant equipment for the Arctic LNG 2 project and could face U.S. sanctions.<sup>10</sup> Reports also indicate that Chinese firms have been linked to equipment deliveries for Russian Arctic projects, despite the challenges posed by sanctions. Finally, this partnership could heighten geopolitical tensions and impact China's relations with Western countries.

As geopolitical tensions escalate and sanctions tighten, the future of China–Russia energy cooperation in the Arctic remains uncertain. Moving forward, striking a balance between energy security, managing sanction risks, and promoting sustainable development will be a critical challenge for China–Russia energy cooperation in the Arctic.

## 2.3 Shipping Routes and Infrastructure

### *Development of the Northern Sea Route*

The melting of Arctic sea ice has increased interest in the NSR, which offers a direct maritime link between Asia and Europe and can reduce shipping distances by up to 40 percent compared with traditional routes via the Suez Canal, potentially lowering transportation costs and shortening transit times.<sup>11</sup> Both China and Russia have therefore recognized the strategic significance of the NSR and have gradually expanded cooperation to develop its commercial and logistical potential.

China has identified the NSR as an important component of its Polar Silk Road, an extension of the Belt and Road Initiative aimed at promoting new Arctic shipping corridors. This strategic orientation is reflected in China's 2018 Arctic Policy White Paper<sup>12</sup> and its 14th Five-Year Plan<sup>13</sup>, both of which emphasize international cooperation in Arctic development. Russia, in contrast, regards the NSR as a key national asset and has prioritized its development through state-led investment, regulatory frameworks, and infrastructure construction. The Russian government has introduced a range of policies to strengthen port facilities, expand icebreaker support, and establish legal mechanisms to regulate increasing maritime traffic along the route.

China and Russia have also undertaken initiatives to improve navigational safety and logistical reliability along the NSR. One example is the growing participation of China COSCO Shipping Corporation Limited, which has conducted multiple commercial voyages through the route in recent years.<sup>14</sup> These voyages demonstrate the route's growing technical feasibility and provide practical tests of its commercial viability.

The Russia–Ukraine conflict has significantly reshaped shipping patterns along the NSR. International transit cargo volumes declined sharply from over 2 million tons in 2021 to approximately 41,000 tons in 2022, reflecting the withdrawal of many Western shipping companies due to sanctions, legal uncertainty, and reputational risks associated with operating in Russian waters.<sup>15</sup> However, despite the collapse in international transit traffic, the overall cargo volume along the NSR continued to increase, largely driven by Russia's domestic energy exports and resource shipments. Total cargo volumes reached approximately 34 million tons in 2022, increased to 36.3 million tons in 2023, and rose further to a record 37.9 million tons in 2024<sup>16</sup>, although still below Russia's long-term strategic targets.<sup>17</sup>

This growth coincided with the launch of new infrastructure projects aimed at improving the route's operational capacity and logistical efficiency. At the same time, the composition of cargo has changed significantly, with transit shipments declining while domestic and energy-related shipments have expanded. These

trends suggest that while the NSR’s potential as an international transit corridor remains debated, the route is increasingly functioning as a logistical backbone supporting Russia’s Arctic resource development.

### *Collaborative Infrastructure Initiatives*

Beyond maritime infrastructure along the NSR itself, China and Russia have also expanded broader connectivity projects linking Arctic development with Eurasian energy and transportation networks. Port construction and icebreaker development remain central to these efforts. Russia currently operates the world’s largest fleet of nuclear-powered icebreakers and continues to expand this fleet to ensure year-round navigation along the NSR. Major port infrastructure projects, such as Sabetta Port, have become key hubs for Arctic LNG exports and form critical nodes within Russia’s broader Arctic logistics system.<sup>18</sup>



China’s expertise in large-scale infrastructure construction complements Russia’s operational experience and geographic access in the Arctic. In addition to maritime projects, China and Russia have also expanded cooperation in cross-border energy and transportation infrastructure. One prominent example is the Power of Siberia natural gas pipeline, which became operational in December 2019. Stretching nearly 4,000 kilometers, the pipeline transports natural gas from eastern Siberian fields to China, strengthening China’s energy security while providing Russia with a major export market. In November 2024, China completed its section of the pipeline ahead of schedule, allowing Russian gas to reach Shanghai by the end of the year. Discussions on the proposed Power of Siberia 2 pipeline are also continuing, which could further expand long-term energy trade between the two countries.

Transportation connectivity has also improved through projects such as the first cross-border railway bridge over the Amur River, which connects northeastern China with Russia’s Far East. This bridge reflects growing economic integration between the two countries and supports broader regional logistics networks that complement Arctic development strategies.<sup>19</sup>

## *Challenges to Infrastructure Development*

Despite these developments, large-scale Arctic infrastructure projects face a range of structural challenges that may affect their long-term viability. Geopolitical pressures remain a key factor. Western sanctions on Russia, particularly those targeting Arctic energy projects, financial transactions, and technology transfers, have raised concerns about access to capital, equipment, and specialized technology required for large-scale infrastructure development. Restrictions on advanced equipment and engineering services could slow the progress of projects such as Arctic LNG facilities and associated transport networks.

The geographical and environmental conditions of the Arctic also present significant operational challenges. Extreme temperatures, shifting sea ice, and the remoteness of many construction sites increase both construction costs and operational risks. Even with substantial technical expertise, infrastructure projects in the Arctic require specialized engineering solutions and long-term logistical planning.

Financial sustainability represents another critical constraint. Infrastructure development in the Arctic—including ports, pipelines, icebreakers, and transport corridors—requires large upfront investment and long implementation timelines. Although both China and Russia have committed significant resources to Arctic development, the long-term profitability of these investments remains uncertain due to fluctuating global energy markets, evolving shipping demand, and the seasonal nature of Arctic navigation.

Differences in national priorities and strategic objectives may also shape the trajectory of cooperation. China's engagement in Arctic infrastructure is closely linked to securing energy supplies and exploring alternative trade routes, while Russia places greater emphasis on regional development, export revenues, and strengthening its strategic presence in the Arctic. These differing priorities could create challenges in aligning long-term investment strategies.

Finally, infrastructure development in the Arctic often intersects with the interests of local and Indigenous communities. Large-scale construction projects may affect fragile ecosystems and traditional livelihoods, raising governance challenges related to environmental protection, community engagement, and sustainable development. Addressing these concerns will remain an important factor in ensuring the long-term stability and legitimacy of Arctic infrastructure projects.

## 2.4 Shipbuilding

Operating in the Arctic demands specialized vessels capable of navigating ice-covered waters, enduring extreme temperatures, and adhering to stringent environmental regulations. These vessels require reinforced hulls, advanced ice-breaking capabilities, and compliance with the Polar Code—a regulatory framework developed by the International Maritime Organization (IMO) to ensure safety and environmental protection in polar waters. The demand for such vessels has spurred significant advancements in Arctic shipbuilding technology, contributing to advancements in innovation and collaboration.



"Nuclear-powered Icebreaker Lenin in Murmansk" by Sergey Tchernyakov, CC BY-ND 2.0

In recent years, China and Russia have deepened their cooperation in shipbuilding, targeting both the commercial and military sectors. This collaboration combines China's shipbuilding capacity with Russia's expertise in Arctic navigation to strengthen their maritime presence and capabilities in one of the world's most challenging environments.

### *Complementary Expertise*

China–Russia shipbuilding cooperation is rooted in the complementary strengths of the two countries. Russia's extensive experience in designing and operating icebreakers aligns well with China's manufacturing capacity and technological innovation. For instance, Chinese shipyards have played an important role in constructing ice-class LNG carriers, such as the Christophe de Margerie-class vessels that are integral to Russia's Yamal LNG project.<sup>20</sup> Equipped with reinforced hulls and advanced propulsion systems, these ships reflect the combination of Chinese manufacturing expertise and Russian operational

requirements. This division of roles reflects a broader pattern in China–Russia Arctic cooperation, in which Russia provides operational experience and geographic access, while China contributes manufacturing capacity, financing, and industrial scale.

Institutional restructuring within Russia’s shipbuilding sector has also created new opportunities for cooperation. In August 2023, Russia transferred control of the state-owned United Shipbuilding Corporation (USC) to VTB, the country’s second-largest bank. VTB has proposed a strategic partnership with China, the world’s leading shipbuilder, to address challenges facing Russian shipbuilders, including Western sanctions, limited access to foreign components, and workforce shortages. Such cooperation could facilitate the integration of Chinese technologies and production capacity into Russia’s shipbuilding sector, with implications for its modernization and industrial competitiveness. It may also strengthen both countries’ capabilities in Arctic maritime navigation and related shipbuilding activities.<sup>21</sup>

### *Research, Development, and Future Plans*

Moreover, China’s state-owned enterprises, including COSCO Shipping, are heavily invested in research and development to improve the performance and efficiency of Arctic vessels. Joint ventures between China and Russia are underway to produce next-generation ice-class tankers, supply ships, and icebreakers. These ventures are intended to strengthen both countries’ capabilities in Arctic maritime technology, which is increasingly important for supporting Arctic resource extraction and emerging trade routes.<sup>22</sup>

Looking forward, China and Russia are exploring additional joint ventures in shipbuilding, particularly in constructing vessels specifically tailored for Arctic conditions. These ships would not only facilitate resource extraction but also enhance trade via the Arctic’s emerging shipping corridors. This aligns with China’s broader "Polar Silk Road" strategy, which seeks to create a new trade route connecting China and Europe via Arctic passages.<sup>23</sup>

### *Challenges To Shipbuilding*

Despite the potential of this collaboration, there are several significant challenges that could impede the success of this cooperation. Geopolitical tensions, particularly from Western countries, may create diplomatic and economic pressures. For example, the United States has expressed concerns about China’s rapid naval expansion, which could impact global security. This could lead to further scrutiny and possibly sanctions targeting the shipbuilding sector, complicating the collaboration between China and Russia.<sup>24</sup>

Furthermore, integrating China’s advanced shipbuilding technologies with Russia’s existing infrastructure poses its own set of challenges. The technical differences between the two countries’ systems and processes will require significant investment and adaptation, especially considering Russia’s reliance on older shipbuilding facilities and technology. Addressing these technical gaps is likely to require substantial investment in modernization and new facilities.

Another challenge lies in the construction of vessels for Arctic operations, which demands compliance with stringent environmental standards and international regulations. The Arctic environment is one of the most sensitive ecosystems on Earth, and any maritime project must account for potential environmental impacts. Additionally, both countries must adhere to the IMO’s Polar Code, which mandates high standards for vessel design and operation in polar waters. These regulatory hurdles could add complexity to joint shipbuilding efforts, requiring careful planning and international cooperation.

The ongoing sanctions against Russia also pose a significant challenge to the collaboration. These sanctions hinder Russia’s ability to acquire necessary materials, technologies, and components from Western markets, which could delay or increase the costs of shipbuilding projects. Russia’s access to high-tech equipment and specialized materials crucial for Arctic shipbuilding, such as icebreaking technology, could be severely restricted, further complicating the process.<sup>25</sup>

## 2.5 Scientific Research

**Figure 2.**

### **China and Russia: Icebreakers and Arctic Research Stations**

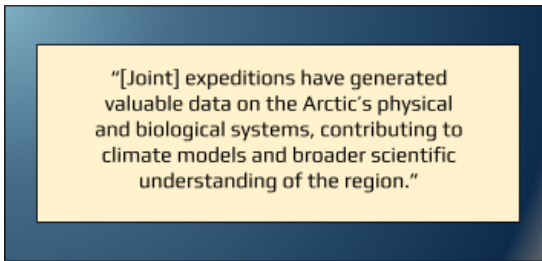
Comparative overview for report use

Category	China	Russia
<b>Icebreakers (number and names)</b>	2 polar research icebreakers: Xuelong; Xuelong 2	8 nuclear icebreakers in operation: Arktika; Sibir; Ural; Yamal; 50 Let Pobedy; Taymyr; Vaygach; Yakutia
<b>Traditional / non-nuclear icebreakers</b>	No comparable large state-operated Arctic icebreaker fleet; China’s main polar-capable vessels are its two research icebreakers	33 non-nuclear icebreakers used by Rosmorport for icebreaking services
<b>Arctic research station(s)</b>	Arctic Yellow River Station, Ny-Ålesund, Svalbard	3 major AARI Arctic scientific observatories/stations: Ice Base Cape Baranova; Tiksi Hydrometeorological Observatory; Russian Scientific Center on the Spitsbergen archipelago

Scientific cooperation has become an increasingly important component of China–Russia engagement in the Arctic. Both countries share an interest in understanding the region’s environmental transformation, resource potential, and

broader geopolitical significance. This cooperation is supported by complementary strengths: Russia provides extensive Arctic territory, long-standing polar expertise, and research infrastructure, while China contributes financial resources, technological capabilities, and growing polar research ambitions. As a result, bilateral scientific initiatives have expanded across multiple areas, including joint expeditions, environmental monitoring networks, and technological cooperation.

### *Joint Expeditions and Field Research*



Joint expeditions represent one of the most visible forms of China–Russia scientific cooperation in the Arctic. Chinese scientists have participated in Russian-led research missions, making use of Russia’s icebreaker fleet and logistical expertise. For example, Chinese researchers joined the Arctic Floating University program organized by Russia’s Northern (Arctic) Federal University (NArFU) to study Arctic biodiversity,

oceanography, and climate change impacts.<sup>26</sup> Similarly, the Polar Research Institute of China (PRIC) has collaborated with Russia’s Arctic and Antarctic Research Institute (AARI) on expeditions aboard the research vessel *Akademik Tryoshnikov*, investigating ice sheet dynamics, marine ecosystems, and carbon cycles.<sup>27</sup>

These expeditions have generated valuable data on the Arctic’s physical and biological systems, contributing to climate models and broader scientific understanding of the region. Joint studies on permafrost thawing, for example, have highlighted the release of greenhouse gases with significant implications for global warming.<sup>28</sup> Beyond their scientific outputs, these expeditions also strengthen institutional connections between Chinese and Russian research communities and expand their role in Arctic knowledge production.

### *Arctic Observation Networks and Data Sharing*

China and Russia have also expanded cooperation in the development of Arctic observation networks, which are essential for monitoring environmental change and predicting future trends. China has established satellite ground stations in northern Russia, including facilities in Arkhangelsk and Murmansk, improving its capacity to monitor sea ice conditions, atmospheric dynamics, and ocean circulation.<sup>29</sup> These stations complement Russia’s existing observational

infrastructure and contribute to a more integrated monitoring system in parts of the Arctic.

Data sharing has become a central feature of this cooperation. The two countries have developed joint databases covering areas such as Arctic hydrology, atmospheric chemistry, and glacier dynamics. This shared knowledge base supports climate modeling and environmental risk assessment while also strengthening the scientific infrastructure through which both countries contribute to Arctic research.<sup>30</sup>



### *Focus on Climate Change and Sustainable Development*

Climate change remains a central theme in China–Russia Arctic scientific collaboration. Both countries view the Arctic as a critical indicator of global climate change and a region particularly vulnerable to rising temperatures. Joint research initiatives have therefore focused on understanding the drivers and consequences of Arctic warming, including its impact on sea-level rise, biodiversity, and regional climate systems. For example, Chinese and Russian scientists have conducted joint research on the Arctic’s role in the global carbon cycle, particularly methane emissions from thawing permafrost and subsea methane hydrates. These studies highlight the potential for feedback mechanisms that could accelerate global warming. At the same time, collaborative projects have explored approaches to sustainable development in Arctic regions, examining how economic activities can be balanced with environmental protection.<sup>31</sup>

## *Technological Innovation and Infrastructure Development*

Technological cooperation has also emerged as an important dimension of China–Russia Arctic research. Chinese companies have provided advanced equipment such as autonomous underwater vehicles (AUVs) and remote sensing technologies to support joint research missions. These technologies enhance data collection capabilities and expand the scope of scientific observation in remote Arctic environments.<sup>32</sup>

Infrastructure development further supports these efforts. China has invested in research facilities in Russia’s Arctic regions, including laboratories and weather stations designed for long-term environmental monitoring. These facilities serve as hubs for joint research programs and training initiatives, strengthening the institutional foundations of bilateral scientific collaboration.<sup>33</sup>

## *Impact of Sanctions*

Western sanctions on Russia—particularly those targeting Arctic energy projects, technology transfers, and financial transactions—have had indirect effects on scientific cooperation between China and Russia. Restrictions on Russia’s access to Western research partnerships and funding have encouraged Moscow to expand cooperation with non-Western partners, including China.

In response, China and Russia have signed multiple agreements promoting Arctic scientific collaboration, including partnerships between the Chinese Arctic and Antarctic Administration (CAA) and the Arctic and Antarctic Research Institute (AARI). Joint expeditions using Russian research stations and icebreakers have become an increasingly prominent component of this cooperation. China’s research icebreaker *Xuelong* has also participated in scientific missions in Russian Arctic waters.

With reduced access to Western research technology and satellite data, Russia has expanded exchanges with China in areas such as climate monitoring, permafrost studies, and marine biodiversity research. China’s financial and institutional support—including initiatives linked to the Polar Silk Road—has helped sustain scientific research activities despite the restrictions facing Russian institutions.

## *Strategic Implications*

Beyond its scientific value, China–Russia Arctic research cooperation also carries broader strategic implications. Joint research activities contribute to Arctic knowledge production while helping both countries support their positions in international forums such as the Arctic Council, where scientific evidence often shapes policy discussions.<sup>34</sup>

Scientific collaboration can also function as a form of soft power. For China, participation in Arctic research strengthens its profile as an emerging Arctic stakeholder and expands its presence in polar governance debates. For Russia, cooperation with China provides an additional channel for sustaining scientific activity and mitigating the effects of Western isolation.

As a result, Arctic scientific cooperation has become not only a platform for research but also a mechanism through which both countries maintain influence, expand institutional networks, and reinforce their broader engagement in Arctic affairs.

## 2.6 Security Dynamics

### *Expanding Military Engagement*

In recent years, China and Russia have expanded their security engagement in the Arctic through joint military exercises, coordinated coast guard activities, and increasingly aligned policy positions. These activities reflect shared strategic interests in Arctic governance and a mutual desire to balance Western influence in the region.<sup>35</sup>

Military cooperation has been particularly evident in joint naval exercises conducted in the Bering Strait in 2022 and 2023. These exercises aimed to enhance interoperability and demonstrate the ability of both countries to coordinate naval operations in Arctic-related waters, signaling closer military interaction in this strategically important region.<sup>36</sup>

In July 2024, China and Russia further expanded their military cooperation through their first joint aerial patrol over the Chukchi and Bering Seas. The operation involved four strategic bombers from both countries and marked the first time Chinese bombers entered the Alaskan Air Defense Identification Zone. Conducted from a shared airbase in northern Russia, the patrol illustrated a growing level of operational coordination between the two militaries in Arctic-adjacent areas.<sup>37</sup>

In October 2024, the coast guards of China and Russia conducted their first joint Arctic maritime patrol.<sup>38</sup> This followed earlier joint patrols in the North Pacific and reflected the two countries' shared interest in protecting expanding activities in northern maritime regions. The patrol also marked a visible increase in China's operational presence in Arctic waters.

### *Strategic Implications of Joint Military Exercises*

Two major exercises, Northern/Interaction-2024 and Ocean-2024, further illustrate the scope of China–Russia military engagement. Northern/Interaction-2024 focused on anti-submarine warfare and air defense coordination, testing the interoperability of their naval forces and improving operational coordination in Arctic-related environments.<sup>39</sup> Ocean-2024 emphasized defensive operations for protecting critical infrastructure as well as amphibious operations in challenging terrain, indicating preparation for a range of potential security contingencies.<sup>40</sup>

These exercises serve both operational and signaling purposes. On the one hand, they improve coordination and interoperability between Chinese and Russian forces in northern maritime regions. On the other hand, they signal to Western countries that both nations are capable of conducting coordinated operations in areas increasingly viewed as strategically contested. This signaling dimension was also evident in the joint coast guard patrol, conducted during China’s National Day celebrations and the 75th anniversary of Sino-Russian diplomatic relations.<sup>41</sup> Operating in Russia’s exclusive economic zone near Alaska’s Bering Sea, the patrol tested vessel performance in challenging Arctic conditions while underscoring both countries’ growing interest in Arctic operations.

Through these activities, China and Russia are gradually expanding their security presence and operational coordination in the Arctic and adjacent regions. Although the scale of this cooperation remains limited compared with their economic engagement, it nevertheless reflects an evolving dimension of their partnership.

### *International Reactions and Geopolitical Implications*

The growing security interaction between China and Russia in the Arctic has attracted increasing attention from Western governments. The United States views the partnership as a potential challenge to its strategic interests in the region. U.S. Arctic Ambassador Michael Sfraga has expressed concern about joint military activities such as aerial patrols and naval exercises, arguing that these developments could influence the evolving security dynamics of the Arctic.<sup>42</sup>


Some analysts note that while these exercises and patrols remain consistent with international law, they may be interpreted as demonstrations of strategic signaling and responses to increased U.S. and allied activities in the region. The expanding military engagement between China and Russia has therefore been viewed by some Western officials as a growing security concern.<sup>43</sup>

## 2.7 Structural Drivers

While China–Russia cooperation in the Arctic spans multiple sectors—including energy development, shipping routes, infrastructure construction, scientific research, and security interactions—its expansion is also shaped by several broader structural drivers. These drivers help explain why cooperation between the two countries has continued to grow despite the region’s challenging environment and evolving geopolitical landscape.

One important driver lies in the complementary nature of the two countries’ economic interests. Russia possesses extensive Arctic territory and significant reserves of natural resources, while China represents one of the world’s largest energy consumers and investors in global infrastructure. This combination creates incentives for cooperation in resource development and long-term supply arrangements. For Russia, partnerships with external investors can support the development of remote Arctic regions, while for China, Arctic cooperation provides opportunities to diversify sources of energy and participate in major infrastructure projects.

A second factor relates to the diversification of transportation and connectivity. Climate change and technological developments have gradually increased attention toward Arctic shipping routes, particularly the Northern Sea Route. For Russia, the development of Arctic transport corridors forms part of its broader strategy to promote economic



“Russia possesses extensive Arctic territory and significant reserves of natural resources, while China represents one of the world’s largest energy consumers and investors in global infrastructure.”

development in the Russian Far North and to expand maritime traffic along its northern coastline. For China, engagement with Arctic shipping routes reflects a broader interest in diversifying global trade networks and exploring alternative transport corridors that could complement existing maritime routes.

Geopolitical developments have also contributed to closer economic engagement between China and Russia in recent years. Shifts in global economic relations and changes in international political dynamics have encouraged both countries to strengthen bilateral cooperation in certain sectors. In this context, Arctic cooperation has become one of several areas where the two countries have explored opportunities for pragmatic collaboration, particularly in fields such as infrastructure investment, energy development, and logistics.

Finally, shared scientific interests and growing attention to climate change have also supported cooperation in the Arctic. As the region experiences some of the fastest environmental changes in the world, scientific research related to climate

monitoring, oceanography, and polar ecosystems has become increasingly important. Joint research initiatives and scientific exchanges provide opportunities for both countries to expand their understanding of the Arctic environment while contributing to broader international knowledge about climate change.

These structural factors help explain the continued expansion of China–Russia engagement in the Arctic. At the same time, their influence should not be overstated. The sustainability of this cooperation will depend on how both countries navigate a range of economic, environmental, and geopolitical challenges, which are discussed in the following section.

## 3. Challenges and Risks

### 3.1 Diverging Strategic Interests

While China and Russia share interests in Arctic development—including resource extraction, infrastructure expansion, and expanded maritime access—their long-term strategic priorities are not identical. Russia, as the largest Arctic state with extensive territorial claims and established infrastructure in the region, places strong emphasis on sovereignty, national security, and control over natural resources. China, by contrast, approaches the Arctic primarily through economic engagement, scientific research, and its broader vision of expanding connectivity through initiatives such as the Polar Silk Road.

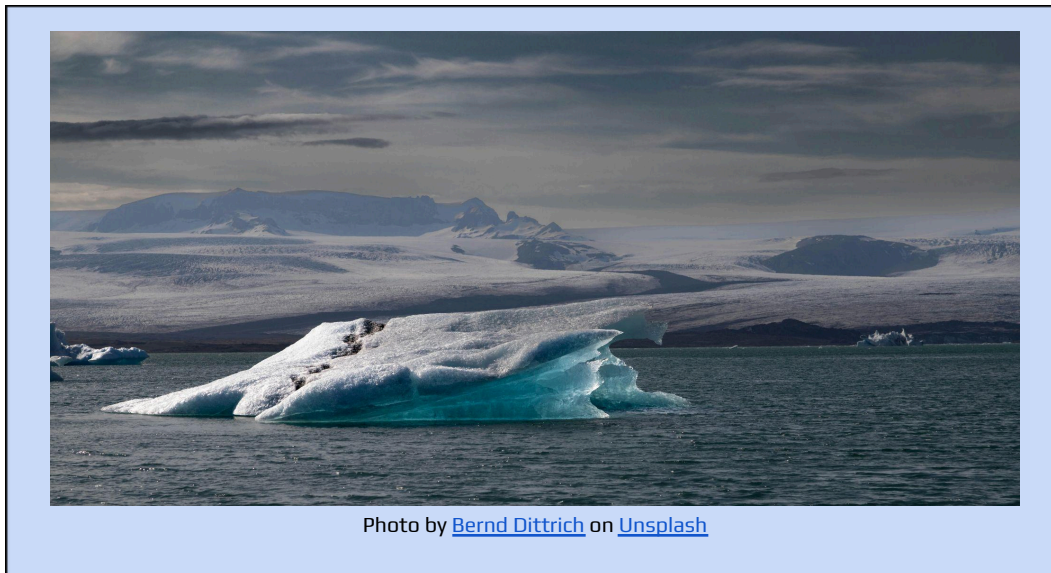
These differing priorities occasionally generate friction in negotiations over resource development and infrastructure projects. Russia has traditionally maintained a cautious approach toward foreign participation in its Arctic economy, particularly regarding ownership and control of strategic assets.<sup>45</sup> In major projects such as Yamal LNG and Arctic LNG 2, foreign partners—including Chinese firms—have generally held minority stakes. Similarly, while China views the Northern Sea Route (NSR) as a potential corridor for diversifying global shipping routes, Russia prioritizes regulatory control over the route, including navigation rules and transit fees.<sup>46</sup>

At the same time, expanding economic engagement between China and Russia in the Arctic reflects broader strategic alignment between the two countries, particularly in energy development and infrastructure investment. Cooperation in these areas has supported Russia's efforts to develop Arctic resources while allowing China to diversify energy supplies and explore alternative trade routes. However, Russia's emphasis on sovereign control over Arctic resources may continue to shape the scope and structure of Chinese participation in future projects.<sup>47</sup>

Geopolitical developments have also added complexity to the relationship. Western sanctions on Russia following the conflict in Ukraine have accelerated Moscow's economic engagement with Asian partners, including China. While this has created new opportunities for bilateral cooperation, it has also prompted discussions within Russia about potential long-term dependence on Chinese capital and technology.<sup>48</sup> Although both governments emphasize cooperation, underlying differences in economic interests and strategic priorities may influence how their Arctic engagement evolves in the coming years.

## 3.2 Environmental and Climate Considerations

The Arctic's fragile ecosystem presents significant environmental challenges for China–Russia collaboration, particularly in oil and gas exploration. The extraction and transportation of hydrocarbons in this sensitive region heightens the risk of oil spills, which could have catastrophic effects on local wildlife and marine habitats. The Arctic's harsh conditions and remote locations further complicate spill response efforts, potentially leading to long-lasting environmental damage. Moreover, increased industrial activity contributes to greenhouse gas emissions, exacerbating global climate change and accelerating Arctic ice melt. These environmental risks not only threaten global climate goals but also attract criticism from environmental organizations and indigenous communities, potentially hindering project approvals and international support.



The Arctic Council, an intergovernmental forum that promotes cooperation in the region, emphasizes sustainable development and environmental protection as core principles of Arctic governance. However, geopolitical tensions and differing national priorities can complicate collaborative environmental initiatives. In recent years, disruptions in environmental data exchanges among Arctic stakeholders—including Russia’s suspension of certain data-sharing arrangements with Western partners—have raised questions about the continuity of international climate monitoring and research in the region. These developments highlight the challenges facing multilateral environmental governance in the Arctic and may affect the ability of the international community to address environmental issues collectively.<sup>49</sup>

Furthermore, the increased use of shipping routes, including those used to transport Russian crude oil to China via the Arctic Ocean, increases risks

associated with Arctic shipping. As traffic grows, so does the likelihood of accidents, including oil spills, posing potential threats to the sensitive Arctic environment. The remoteness and extreme conditions of the region make emergency response operations particularly challenging, potentially resulting in significant and long-term ecological consequences.<sup>50</sup>

### 3.3 Third-Party Pressures and Global Scrutiny

Geopolitical tensions have increasingly influenced the development of Arctic economic activities, particularly the NSR. Following the outbreak of the Russia–Ukraine conflict, Western sanctions and broader political tensions significantly reduced international transit traffic along the route. Many Western shipping companies withdrew from Arctic operations due to legal uncertainties, financial risks, and reputational concerns associated with operating in Russian waters. While overall cargo volumes along the NSR have continued to grow—largely driven by Russia’s domestic energy exports and resource shipments—the sharp decline in international transit traffic illustrates how geopolitical developments can reshape the operational environment of Arctic shipping. In response to these pressures, Russia has increasingly turned toward Asian partners, including China, to sustain Arctic logistics networks and maintain momentum in energy export projects.

At the same time, the deepening cooperation between China and Russia in the Arctic has attracted growing global scrutiny, particularly from Western governments concerned about the strategic implications of expanding Sino–Russian engagement in the region. Western policymakers increasingly interpret this cooperation not only as economic collaboration but also as part of a broader geopolitical alignment that may reshape existing patterns of Arctic governance. Concerns frequently focus on potential shifts in energy supply chains, infrastructure development along Arctic transport corridors, and the possible emergence of new logistical networks that may reduce Western influence in regional economic activities.<sup>51</sup>

For the United States and its allies, the Arctic has become an increasingly important arena for strategic planning and security policy. In addition to its natural resource potential and emerging maritime routes, the region is now viewed as part of a wider geopolitical landscape shaped by intensifying competition. Against the backdrop of expanding China–Russia cooperation, Washington has strengthened its Arctic policy focus, including greater emphasis on maritime domain awareness, icebreaker development, and operational capabilities in polar environments.<sup>52</sup> The United States has also expanded policy and security coordination with NATO allies such as Canada, Norway, and Denmark, increasing strategic dialogue related to Arctic security.

Although China is not an Arctic state, its growing involvement in Arctic infrastructure and investment has drawn increasing attention in Washington. U.S. policymakers have increasingly interpreted China's Arctic activities through the lens of strategic competition, viewing them as part of Beijing's broader effort to expand its global influence.<sup>53</sup> This framing has encouraged stronger diplomatic and economic responses aimed at limiting China's long-term strategic presence in the region.

More broadly, the Arctic is increasingly being drawn into wider geopolitical competition, particularly between Russia and the United States. Russia's military modernization in the region—including upgrades to Northern Fleet facilities and the deployment of advanced weapons systems—has added to security concerns among NATO members.<sup>54</sup> In response, the United States and its allies have strengthened their military coordination, increased the frequency of Arctic exercises, and placed greater emphasis on operational capabilities in the region. As a result, intensifying strategic competition is exerting a growing influence on both the security environment and the governance dynamics of the Arctic.

### 3.4 Western Responses and Sanctions

In response to Russia's actions and the resulting implications for global energy markets, Western institutions have adopted a range of policy measures. The European Union (EU) has played a central role in implementing sanctions against Russia, including restrictions targeting the Arctic LNG sector as part of its broader strategy to respond to the Ukraine crisis and strengthen European energy security. Since 2014, the EU has implemented progressively stricter sanctions on Russia, expanding these measures to include the Arctic LNG sector. These sanctions aim to restrict Russia's access to critical technology and financing for Arctic oil and gas development, particularly restricting the transfer of equipment required for deep-water drilling and Arctic resource extraction.<sup>55</sup> The EU's objectives are twofold: reducing Russia's geopolitical leverage and promoting energy diversification among EU member states to enhance energy security.<sup>56</sup>

Alongside sanctions enforcement, the EU has also accelerated efforts to diversify its energy supply. This includes increasing investment in renewable energy, strengthening energy connectivity across Europe, and expanding cooperation with alternative suppliers in order to reduce dependence on Russian energy. The EU has also engaged in diplomatic efforts to strengthen cooperation with Arctic states and other international partners, supporting initiatives that promote the sustainable development of the region.

Although NATO does not impose sanctions directly, its member states have broadly supported these measures and aligned their policies with the wider Western response. NATO's primary role lies in the security domain, focusing on maintaining regional stability and addressing concerns related to Russia's growing military presence in the Arctic. In recent years, the alliance has increased military

coordination and joint exercises among member states to enhance preparedness and situational awareness in the region.<sup>57</sup> NATO also coordinates with the EU and other international partners to promote a more unified approach to Russia's Arctic activities, including intelligence sharing and defense coordination. It has also taken part in broader discussions on Arctic governance and regional security.<sup>58</sup> Western policy responses to Arctic developments increasingly extend beyond sanctions alone to include energy diversification, security coordination, and broader efforts to shape the regional balance of influence.

### 3.5 Economic and Financial Constraints

Large-scale Arctic development projects require substantial financial investment and long implementation timelines, which create significant economic and financial constraints for China–Russia cooperation in the region. Arctic infrastructure—including LNG terminals, ice-class vessels, port facilities, and transport corridors—often involves higher construction and maintenance costs than comparable projects in other regions due to extreme weather conditions, remote locations, and specialized technological requirements. These structural factors increase the financial risks associated with Arctic projects and complicate long-term investment planning.

Financing has become an increasingly important challenge for Arctic development. International sanctions on Russia's financial sector have limited access to Western capital markets, increasing reliance on alternative financing arrangements. While Chinese financial institutions and investment funds have supported several Arctic projects, many Chinese companies remain cautious about expanding large-scale investments due to concerns about commercial viability, regulatory uncertainty, and potential exposure to secondary sanctions. As a result, financing structures for Arctic projects have become more complex, often involving a combination of state-backed funding, bilateral financial arrangements, and long-term supply agreements.

Insurance and shipping finance also present additional constraints. Arctic shipping operations require specialized vessels capable of navigating ice-covered waters, which significantly increases both construction and operating costs. At the same time, restrictions affecting maritime insurance and logistics services have created uncertainties for shipping companies operating along Arctic routes. Limited availability of insurance coverage and higher risk premiums may reduce the attractiveness of Arctic transport corridors compared with more established maritime routes.

Market uncertainty further complicates economic planning for Arctic development. Global energy markets, shipping demand, and long-term commodity prices remain volatile, making it difficult to assess the long-term profitability of major Arctic infrastructure projects. In addition, the seasonal nature of Arctic shipping routes and the relatively limited capacity of existing

regional infrastructure may constrain the scale of commercial activity in the near term.

These economic and financial factors underscore the structural constraints shaping China–Russia cooperation in the Arctic. While both countries continue to explore opportunities in energy development, infrastructure investment, and maritime transport, the pace and scale of future cooperation will ultimately depend on the commercial viability and financial sustainability of these projects.

## 4. Governance Implications

Beyond sectoral cooperation, China and Russia increasingly frame their Arctic engagement within broader governance narratives that link the region to wider global policy agendas. Both countries emphasize that Arctic development should be guided by the principles of peace, stability, and cooperation, and that the region should remain a space for dialogue rather than confrontation.

For China, Arctic governance is increasingly linked to its broader global governance agenda. In its 2018 Arctic Policy White Paper, Beijing described the Arctic as a “community with a shared future for mankind” and introduced the concept of the “Ice Silk Road” as an extension of the Belt and Road Initiative. The initiative aims to expand connectivity through infrastructure development, scientific cooperation, and environmental protection, while encouraging participation from both Arctic and non-Arctic states in regional governance discussions. From China’s perspective, participation in Arctic governance also reflects its broader effort to contribute to the management of global commons and to engage in multilateral dialogue on issues such as climate change, maritime safety, and sustainable development.

Russia, by contrast, approaches Arctic governance through a sovereignty-focused framework. While Moscow supports cooperative mechanisms under institutions such as the Arctic Council and the International Maritime Organization (IMO), it consistently emphasizes that governance in the region should remain primarily under the jurisdiction of Arctic states. In this sense, Russia supports multilateral engagement but within a framework that preserves the central role of coastal state authority. This position reflects Moscow’s long-standing view that Arctic governance should remain regionally anchored rather than globally institutionalized.

Recent geopolitical developments have nevertheless raised broader questions about the functioning of Arctic governance institutions. The Arctic Council has historically served as the central forum for regional cooperation, particularly on environmental protection and sustainable development. However, the deterioration of relations between Russia and Western Arctic states following the Ukraine conflict has complicated the Council’s activities and temporarily disrupted several cooperative mechanisms. In policy discussions across Europe and North America, some analysts have noted that effective Arctic governance may be difficult to sustain without Russia’s participation, given the country’s extensive Arctic coastline, infrastructure, and scientific presence in the region.

These debates highlight the structural reality that Russia remains a central actor in Arctic affairs despite broader geopolitical tensions.

At the same time, evolving governance dynamics have also brought increased attention to the role of non-Arctic states. China, which obtained observer status in the Arctic Council in 2013, has gradually expanded its participation in Arctic research, environmental monitoring, and scientific cooperation. Chinese research icebreakers, joint scientific expeditions, and investments in polar research infrastructure have contributed to the growing body of international Arctic research. While China's Arctic activities initially generated skepticism among some Arctic states, particularly regarding the long-term strategic implications of its presence, interactions through scientific cooperation and multilateral institutions have gradually provided opportunities for dialogue and confidence-building.

As a result, some Arctic states increasingly view the participation of non-Arctic states as a potential complement to regional governance rather than a direct challenge to it. In areas such as climate research, maritime safety, and environmental monitoring, broader international participation can contribute additional resources, scientific expertise, and financial support. Nevertheless, debates continue regarding the appropriate scope of non-Arctic involvement in regional governance frameworks, particularly when it comes to strategic infrastructure development and shipping regulation.

Against this backdrop, China–Russia cooperation in the Arctic may influence governance discussions in several ways. On the one hand, their cooperation in energy development, shipping, and scientific research could contribute to economic activity and knowledge production in the region. On the other hand, closer coordination between the two countries also raises questions among some policymakers about how emerging partnerships may reshape the balance between regional and global governance mechanisms.

More broadly, the evolving Arctic landscape illustrates the growing intersection between regional governance and global geopolitical dynamics. Climate change, expanding shipping routes, and resource development are drawing increasing international attention to the region. As more actors become involved, Arctic governance will likely continue to evolve through a combination of regional institutions, bilateral partnerships, and issue-specific cooperation mechanisms.

In this context, maintaining a balance between cooperation and competition will remain a central challenge for Arctic governance. While geopolitical tensions may continue to influence diplomatic interactions, areas such as environmental protection, maritime safety, and scientific research still provide opportunities for pragmatic collaboration among Arctic and non-Arctic stakeholders alike.

## 5. Conclusion

This report has examined the evolving scope of China–Russia cooperation in the Arctic across several interconnected domains, including energy development, Arctic shipping routes, infrastructure construction, shipbuilding, scientific research, and security dynamics. Taken together, these areas of engagement indicate that the Arctic has become an increasingly important space in China–Russia relations. For Russia, the region remains central to its national security, resource development, and long-term economic strategy. For China, the Arctic represents a growing area of interest in terms of energy diversification, scientific research, and future connectivity.

The report also shows that China–Russia cooperation in the Arctic is neither uniform nor unlimited in scope. While the two countries have expanded practical cooperation in a number of sectors, their partnership continues to be shaped by asymmetries in geography, capabilities, and long-term strategic priorities. Russia, as the principal Arctic coastal state in this relationship, retains a strong preference for sovereign control over Arctic resources, infrastructure, and regulatory authority. China, by contrast, remains an important but external actor whose role in the region continues to depend on access, partnerships, and the broader political environment.

At the same time, Arctic cooperation between China and Russia must be understood within a wider geopolitical context. The war in Ukraine, Western sanctions on Russia, intensifying competition among major powers, and renewed attention to Arctic security have all affected the environment in which bilateral cooperation takes place. These developments have created new incentives for economic and political coordination between Moscow and Beijing, while also introducing additional financial, technological, and diplomatic risks. As a result, the future of China–Russia Arctic cooperation is likely to be shaped not only by bilateral interests, but also by the broader evolution of international politics.

From a governance perspective, the expansion of China–Russia engagement carries implications beyond the bilateral relationship itself. It reflects the growing intersection of Arctic regional governance with global issues such as climate change, maritime connectivity, energy security, and great-power competition. It also raises broader questions about the future role of non-Arctic actors, the functioning of existing institutions such as the Arctic Council, and the extent to which practical cooperation can be sustained under conditions of geopolitical

fragmentation. In this sense, the Arctic is no longer only a regional space; it is increasingly linked to wider debates about global governance and strategic order.

Looking ahead, China–Russia cooperation in the Arctic is likely to continue in selective and pragmatic ways, particularly in areas where the interests of both sides remain aligned, such as energy, shipping, scientific research, and certain forms of infrastructure development. However, the pace and depth of future cooperation should not be overstated. Commercial feasibility, sanctions-related constraints, environmental pressures, and differences in long-term priorities are all likely to influence how this relationship develops. Cooperation may therefore expand in some sectors while remaining limited or cautious in others.

In the longer term, one of the central challenges for all Arctic stakeholders will be how to manage the interaction between economic development, environmental sustainability, and regional stability. The Arctic is undergoing profound physical and geopolitical change, and no single actor can shape its future alone. For this reason, multilateral dialogue, issue-based cooperation, and continued adherence to international legal frameworks—including the United Nations Convention on the Law of the Sea (UNCLOS)—will remain important for reducing tensions and supporting a more stable regional order.

Ultimately, China–Russia cooperation will remain an important factor in the changing Arctic landscape, but it should be viewed as part of a larger and more complex process. Its significance lies not only in the bilateral projects it produces, but also in what it reveals about shifting patterns of power, governance, and strategic adaptation in the polar region. How this cooperation evolves will continue to shape discussions of Arctic development, governance, and international order in the years ahead.

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A wide-angle photograph of a massive glacier flowing into a body of water. The glacier is a mix of white and light blue, with visible crevasses and a jagged edge. The water is a deep blue, and several large icebergs are floating in the foreground. The sky is a pale, overcast blue. The entire image is framed by a dark blue border.

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