Geneva Institute of International Relations

RUSSIA AND CHINA'S JOINT OPERATIONS IN THE ARCTIC: GEOPOLITICAL AND ECONOMIC IMPLICATIONS

May 2025

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Introduction

The Arctic, which only covers about 6% of Earth's surface, is gaining strategic importance and is emerging as a pivotal region in the 21st century due to its numerous natural resources and its potential as a global trade route with the Northern Sea Route (NSR). It is transforming into a critical frontier for economic, geopolitical, and military activity, with nations competing to influence its governance, resources, and strategic assets. The Arctic region holds an estimated 90 billion barrels of oil and 47 trillion cubic meters of natural gas concentrated in several key Arctic basins (mainly the Amerasian Basin, Arctic Alaska Basin, and East Barents Basin). It accounts for 30% of the world's undiscovered natural gas and 16% of its untapped oil reserves. In addition, significant reserves of rare earth elements and key industrial minerals such as phosphate, bauxite, nickel, copper, iron ore, and diamonds are also located in the Arctic. All of these are indispensable resources for industrialized economies and are mainly located inside Russia's exclusive economic zone (EEZ).

The ongoing transformation of the Arctic is further accelerated by climate change. The rise in temperatures will render previously inaccessible areas rich in natural resources more accessible to extractive industries. Neighboring countries will want to exploit the Arctic's vast reserves to meet growing global demand. Climate change will also enable a shorter and more efficient trade pathway between Europe and Asia with the NSR. The year-round access to this route could reduce transit times by 40% compared to the Suez Canal.[1]

The Arctic is becoming a stage where the world powers compete for access and control over resources, regional governance, and control over strategic trade routes. Two key players, Russia and China, have formed a strategic partnership to leverage their mutual interests in reshaping regional geopolitics and economic dynamics. With its extensive Arctic coastline and resource-rich EEZ, **Russia** wishes to reinforce its position as a leading Arctic power. It sees the Arctic as essential not only for its economic growth but also for its strategic security. **Russia**, through its partnership with **China**, seeks to mitigate the impact of Western sanctions following its role in the armed conflict in **Ukraine**. and limit its geopolitical isolation.

China's interest in the Arctic has steadily increased since the early 2000s. It sees the Arctic as a unique opportunity to diversify energy imports, secure vital resources, open trade channels, and expand its Belt and Road Initiative (BRI), particularly under the "Polar Silk Road" concept. In 2013, it was admitted as a permanent observer in the Arctic Council, and in

[1] Lasha Gamjashvili, *"The Arctic Region: A Source of Conflict or Potential for International Cooperation ?"*, Foraus, 07 December 2022, https://www.foraus.ch/posts/the-arctic-region-a-source-of-conflict-or-potential-for-international-cooperation/, Haiyu Xie, *"China's Oil Security in the Context of Energy Revolution: Changes in Risks and the Hedging Mechanism," American Journal of Industrial and Business Management* 11, no. 09 1, 01, January 2021: 984–1008, https://doi.org/10.4236/ajibm.2021.119060.

2018, with the publication of its White Paper on Arctic policy, it declared itself a "near-Arctic state", a concept that has been met with resistance from Arctic nations.

China wishes to fortify its economic ties with Arctic countries, especially **Russia** and has also been investing in Arctic infrastructure and scientific research. It uses its observer status in the Arctic Council and its economic and diplomatic influence to try to increase its voice in Arctic decision-making and expand its role in shaping global governance in the region. The goal is to establish itself as a key player in Arctic governance. These policies aim to safeguard its economic and energy security by securing access to the region's abundant natural resources. The growing presence of **China** in the Arctic has raised concerns, particularly from **the United States**, which views this as a potential means by which **China** can expand its military influence.

The alliance between **China** and **Russia** underscores the strategic, geopolitical, and economic dynamics influencing the Arctic's future as it develops into a globally integrated region. Their partnership highlights the Arctic's growing importance as a critical frontier in world geopolitics.

This paper examines the geopolitical, economic, and security dimensions of **Russia** and **China**'s cooperation in the Arctic. By analyzing their shared goals, joint ventures, and strategic implications, it explores how their alliance reshapes global power dynamics.

I. Background on Arctic Geopolitics

A. The Arctic's Geopolitical Landscape

1. Territorial Claims and Maritime Boundaries

The Arctic region, strategically important for the five neighboring states, is governed by overlapping territorial claims under the **United Nations Convention on the Law of the Sea (UNCLOS)**. Under this framework, the **U.S.**, **Canada**, **Russia**, **Norway**, and **Denmark** each have an exclusive economic zone (EEZ) of 200 nautical miles and the legal right to exploit resources. **UNCLOS** also allows countries to claim, up to ten years after ratification, an extended continental shelf of up to 350 nautical miles if they can prove that the area is a natural prolongation of the continent's landmass under the ocean. The claims do not extend a state's EEZ as it only gives exclusive rights to the sea bottom and resources below[2]. Four of the five Arctic states (**Canada**, **Denmark**, **Norway**, and **Russia**) have made claims to an extended continental shelf. **Russia**, **Canada**, and **Denmark** have submitted competing claims, particularly the Lomonosov Ridge, a crucial underwater feature extending near the North Pole. In 2001, **Russia** submitted a claim to the **U.N. Commission on the Limits of the Continental Shelf** (**CLCS**), which claimed a large portion of the Arctic, including the Lomonosov Ridge

[2] Ragnhild Groenning, "*Exploring Continental Shelf Claims in the Arctic – Infographic*", The Arctic Institute, 27 June 2017, https://www.thearcticinstitute.org/continental-shelf-claims-arctic-infographic/

and Mendeleev Ridge. According to Russia, these are natural extensions of its continental shelf. In 2007, **Russia** symbolically planted a flag on the seafloor near the North Pole to assert its claim.[3] In 2015 and 2021, **Russia** submitted updated claimed areas, which now reach approximately 1.2 million square kilometers. **Canada** and **Denmark** have also submitted claims linking the Lomonosov Ridge to their territories.

The role of the **CLCS** is limited as it can only provide recommendations on the scientific validity of claims without adjudicating disputes. States must resolve border issues between each other. These territorial disputes underscore the geopolitical importance of controlling undersea resources, which include oil, natural gas, and minerals.

Russia has the largest Arctic coastline, and this region is the cornerstone of its economic and strategic priorities. The area is estimated to hold 30% of the world's undiscovered natural gas reserves and 13% of its undiscovered oil. The region also accounts for over 80% of **Russia**'s natural gas exports and around 20% of its total oil production. In addition to oil and natural gas, the Russian arctic region holds vast deposits of diamonds, nickel, apatite, niobium, and copper, cobalt, tin, tungsten, and mercury. These resources collectively contribute 15-20% of **Russia**'s GDP, with non-energy exports comprising over 10%.

2. International Forums

Established in 1996, the **Arctic Council**[4] is the main intergovernmental forum for promoting cooperation, coordination, and interaction among Arctic states, indigenous communities, and other Arctic inhabitants. It comprises eight Arctic states (**Canada**, **Denmark**, **Finland**, **Iceland**, **Norway**, **Russia**, **Sweden**, and the **United States**), six Permanent Participants representing Indigenous peoples, and observer states. This observer status is open to non-Arctic states without voting rights in the council. There are currently thirteen non-Arctic states that have observer status.[5] It focuses on environmental protection, sustainable development, and scientific research and has addressed issues related to climate change, biodiversity conservation, and emergency response mechanisms. The **Arctic Council** has been instrumental in adopting environmental agreements, such as the **Stockholm Convention** and the **Minamata Convention,** as well as international maritime regulations like the **Polar Code**.

Russia, which controls 45% of the Arctic's territory and resources, has historically played a central role in the council's work in areas related to climate monitoring, shipping, and resource extraction. The country's 2021–2023 chairmanship coincided with the invasion of

[3] Tom Parfitt,"*Russia Plants Flag on North Pole Seabed"*, The Guardian, April 12, 2017 https://www.theguardian.com/world/2007/aug/02/russia.arctic
[4] Arctic Council. "*The Arctic Council*," n.d. https://arctic-council.org/
[5] "*Arctic Council*," Wikipedia, February 12, 2025, https://en.wikipedia.org/wiki/Arctic_Council.

Ukraine, which resulted in the other seven members suspending **Russia** in 2022. This decision raised issues regarding the future of regional cooperation and governance and the efficacy of international agreements as the **Arctic Council** functions on a consensus-based model. Due to the absence of **Russia**, the ability to address regional issues such as maritime safety, environmental protection, and cross-border resource management has been significantly weakened. Another problem raised by **Russia**'s suspension has been funding the **Arctic Council**, as it solely relies on voluntary contributions from member states. The country was a significant financial contributor, and its withdrawal has created funding issues, especially for cross-border cooperation projects. The **Arctic Council** faces an uncertain future and will struggle to maintain its relevance without **Russia**'s participation.

3. New Actors and Increased Competition

The **Arctic Council** has been the main organ that manages disputes and fosters dialogue among Arctic states. This only concerns member states, as non-Arctic observer states are excluded from decision-making. Non-Arctic observer states and organizations, such as **China** and the **European Union** (**EU**), have argued that due to their interests in global trade, scientific research, and environmental issues, they should have a say on the problems related to the Arctic. Their growing involvement is reshaping the region's dynamics. Other observer States, such as **India**, **South Korea**, and **Japan**, also favor a more inclusive **Arctic Council** that grants them a role in deciding policies related to the Arctic's climate change impact on global ecosystems and maritime safety. [6]

China has adopted an assertive Arctic strategy with its BRI and the "Polar Silk Road". It sees this area as a vital commerce route that links Europe and Asia. It aims to become a major Arctic stakeholder through bilateral agreements with Nordic nations, infrastructure investments, and cutting-edge scientific research. Its cooperation with **Russia** on energy projects such as Yamal LNG and Arctic LNG-2 also enables **China** to establish strategic and financial footholds in the region.

The **European Union** has been trying to be more involved in Arctic affairs as it recognizes its significance to global climate policy and natural resources. It has even applied for observer status in the **Arctic Council** but was rejected in 2013. Even though it is not an observer, it participates indirectly through its member states (**Denmark**, **Sweden**, and **Finland**).

The influx of actors, notably **China** and the **EU**, is reshaping the dynamics of Arctic governance and creating tensions with traditional Arctic states. Arctic states have been wary of external interference in regional matters and have been pushing back on the strategic positioning of the new actors as they see it as a challenge to their control over regional

[6] Guo, Peiqing. "*An Analysis of New Criteria for Permanent Observer Status on the Arctic Council and the Road of Non-Arctic States to Arctic"*, KMI International Journal of Maritime Affairs and Fisheries 4, no. 2 01 December 2012, https://doi.org/10.54007/ijmaf.2012.4.2.21.

governance. **China**'s growing presence in the region and its alignment with **Russia** have notably raised concerns among Arctic states.

As the Arctic region continues to gain strategic importance, it is becoming a place for increased economic and geopolitical competition. Structures such as the **Arctic Council** and international agreements such as **UNCLOS** will probably need to adapt to these evolving dynamics. Balancing the interests of traditional Arctic states with those of emerging players will be essential to ensure sustainable development and maintain regional stability.

B. Russia's Arctic Strategy

Russia views the Arctic as a strategic region essential to its geopolitical, security, and economic goals. The region has vast oil, natural gas, and minerals reserves and is a key component of Russia's energy-driven economy. **Russia** also seeks to extend its continental shelf claims under the **UNCLOS** to secure rights over vast resource-rich areas. Climate change makes the Arctic more accessible, opening untapped regions rich in natural resources crucial for **Russia**'s economic stability, especially as it faces Western sanctions and seeks to diversify its energy export markets. Moscow is investing massively in the region and building vital infrastructure such as ports, pipelines, floating nuclear power stations, icebreakers, and energy extraction facilities.

One of the critical aspects of **Russia**'s economic and military strategy in the Arctic is the development of the Northern Sea Route (NSR), which runs along the country's northern coastline. This route is a shorter and potentially more lucrative alternative to traditional maritime trade routes such as the Suez Canal. The NSR is essential for **Russia** to export LNG to cement **Russia**'s dominance over Arctic trade and maintain itself as a global energy leader. Western sanctions related to **Russia**'s involvement in the armed conflict in **Ukraine** have significantly impacted the operation of the NSR as they have restricted crucial financing, technology, and foreign investments. Numerous Western companies, notably shipping and energy firms, have also withdrawn from Arctic projects. **China** has strengthened its economic cooperation with Russia and is filling the gap left by Western companies through its state-owned enterprises, such as **China National Petroleum Corporation** (**CNPC**) and **China National Offshore Oil Corporation** (**CNOOC**). Both countries have combined their efforts to increase natural gas production and exports to Asian markets and cooperate on the Yamal LNG and Arctic LNG-2 projects.

Initially, **Russia** was active in multilateral Arctic organizations like the **Arctic Council**. Still, it has shifted toward bilateral agreements, and its 2023 amendment to its Arctic policy removed references to multilateral cooperation. The war in **Ukraine** has isolated **Russia** as Western countries have restricted access to foreign investment, technology, and expertise. As a result, **Russia** focuses on consolidating its regional influence through economic and military self-sufficiency.

Russia's broader geopolitical ambition in the region can be seen in the increased militarization of the Arctic. It has expanded its Northern Fleet and deployed advanced missile

systems to defend its Arctic interests and deter external interference. These developments have raised concerns among Arctic and **NATO** states about protecting their own strategic assets and maintaining a deterrent against potential threats. This has prompted closer security cooperation between the Northern European countries and **NATO**, with **Finland** joining in April 2023 and **Sweden** in March 2024.[7]

C. China's Arctic Interests

China sees the Arctic as an area of vital importance for its larger geopolitical goals. Beijing has attempted to position itself as a "near-Arctic state," a self-proclaimed term introduced in a 2018 Arctic Policy White Paper. This designation is not an internationally recognized legal or geopolitical designation. **China** uses it to try and increase its involvement in Arctic affairs despite its geographical distance from the region. **China** wants to become a significant force in Arctic governance through diplomatic involvement, scientific research, and economic development. It argues that the Arctic region has global implications regarding shipping routes and resource access.

China is involved in multilateral forums, such as the **Arctic Council**, that discuss sustainable resource development and environmental protection. The country showcases itself as an environmentally responsible actor. Still, its main interest rests in the vast reserves of oil, natural gas, and rare earth minerals crucial for **China**'s long-term economic and industrial growth.

China has deepened its economic cooperation with **Russia** on Arctic energy projects, such as the Yamal LNG and Arctic LNG-2 plants, to diversify its energy imports and reduce dependence on vulnerable maritime routes like the Strait of Malacca. These projects also serve as a way for the country to strengthen its foothold in the Arctic while reinforcing its strategic partnership with **Russia**. Both countries seek to dominate the Arctic route.

China also incorporated in 2017 the NSR into its Belt and Road Initiative (BRI) through its Polar Silk Road. This route significantly shortens shipping times between **China** and European markets. As 90% of **China**'s goods are transported by sea, the NSR presents significant economic benefits**.** It also helps avoid congested trade routes and regional tensions, such as the Persian Gulf and the South China Sea. The goal is also to secure its supply of energy resources, lower shipping costs and transit times, and expand its geopolitical influence. Harsh environmental conditions and seasonal limitations make these routes challenging, but Chinese

[7] Janis Kluge and Michael Paul, "*Russia's Arctic Strategy Through 2035: Grand Plans and Pragmatic Constraints"*, SWP Comment, 01 January 2020, https://doi.org/10.18449/2020c57, Eugene Rumer, Richard Sokolsky, and Paul Stronski, "*Russia in the Arctic, A Critical Examination*", Carneigie Endowment for Internaional Peace, 2021, https://carnegieendowment.org/files/Rumer_et_al_Russia_in_the_Arctic.pdf

companies have been venturing through the Arctic routes, such as the Northwest Passage and the NSR, since 2013.

China has invested heavily in advanced icebreakers such as the **Xue Long 2** (**Snow Dragon)**, built in under three years, to support its long-term objectives in the Arctic region. In 2024, **China** deployed three icebreakers—**Xue Long 2, Zhong Shan Da Xue Ji Di,** and **Ji Di**—for Arctic research, securing access to key regions such as the Chukchi and Beaufort Seas.

Through scientific expeditions, such as its annual Arctic Ocean expeditions, **China** has been steadily expanding its Arctic research initiatives. Chinese scientists primarily focus on climate change, sea-level rise, and extreme weather patterns. **China** also uses scientific research to serve its strategic interests, such as mapping mineral-rich areas like the **Gakkel Ridge**. **China**'s scientific presence in the Arctic includes the Yellow River Station in Svalbard, **Norway**, established in 2003 to study climate change, the Aurora Borealis, and Arctic microbiology.

China's growing influence in the Arctic raises concerns among Arctic states as they fear that its economic and scientific investments and infrastructure investments may mask broader strategic ambitions. Arctic states also fear that **China**'s infrastructure projects may not align with environmental sustainability and their commitment to protecting the fragile Arctic ecosystem. **China**, nonetheless, tries to balance its Arctic ambitions with diplomatic engagement carefully as it wishes to maintain stable relations with Arctic nations while expanding its influence in the region.[8, 9]

II. Economic Cooperation in the Arctic

A. LNG cooperation between Russia and China

Russia and **China**'s collaboration in LNG projects in the Arctic represents a transformative shift in global energy dynamics. Since 2022, European countries have reduced their energy imports from **Russia** while at the same time, **China** saw record-high imports of LNG. The country is currently the world's largest LNG importer, surpassing **Japan**, and receiving the most LNG shipments from **Russia**'s Yamal LNG project.[10]

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[8] Jeff G. Gilmour, *"China in the Arctic",* Canadian Naval Review, 10 February 2024, https://www.navalreview.ca/2024/02/china-in-the-arctic/, Simone McCarthy, "*China's Coast Guard claims to have entered the Arctic Ocean for the first time as it ramps up security ties with Russia", CNN,* 03 October 2024, https://edition.cnn.com/2024/10/03/china/china-russia-coast-guard-arctic-ocean-intl-hnk/index.html, Rush Doshi et al., "*Northern Expedition: China's Arctic Activities and Ambitions"* Brookings, April 2021, https://www.brookings.edu/wp-content/uploads/2021/04/FP_20210412_china_arctic.pdf

[9] Global Georgetown, "*China's Arctic Interests"*, Georgetown University, *29* January 2024, https://www.youtube.com/watch?v=CLN1l4Bvrfw&t=1s

[10] Malte Humpert, "*China Receives Late-Season LNG Deliveries From Russian Arctic Capping off Record-Breaking Year" High North News*, 02 January 2023, https://www.highnorthnews.com/en/china-receives-late-season-lng-deliveries-russian-arctic-capping-record-breaking-year.

1. The Yamal LNG Project

The Yamal LNG Project, located on the Yamal Peninsula in **Russia**'s Arctic region, is a major natural gas project for the country's Arctic development and a significant milestone in the Sino-Russian energy cooperation. The project has been declared a project of national interest by the Russian Government as the Yamal peninsula is currently estimated to hold the largest gas reserves in the world. It includes natural gas production, liquefaction, and shipping and taps into the massive natural gas reserves of the South Tambey field. This LNG plant, with an output capacity of around 16.5 million tons, strengthens **Russia**'s position as a leading energy exporter.

The Yamal LNG project is a joint venture with Russian company **Novatek**, which oversees the project through its subsidiary Yamal LNG. The company currently holds a 50.1% interest in the project, **Total Energies** holds a 20% stake, the **China National Petroleum Corporation** (**CNPC**) has another 20% stake, and the **Silk Road Fund** holds around 9.9% after **Novatek** sold a stake for $1.1bn. **Novatek** signed an agreement with **Gazprom** to distribute LNG produced from the site. **China** has been involved since the beginning in the financing and development of the project. The Chinese industrial sector provided steel, equipment, materials, construction, and ships. Chinese companies undertook 85% of the workload for constructing all modules and exported products worth around $10 billion. In 2016, the **Export-Import Bank of China** and **China Development Bank** signed two 15-year loans worth more than $12 billion to help finance the $27 billion Yamal LNG project.[11] This joint venture is **China**'s most significant investment in **Russia** and its first overseas megaproject since the launch of the Belt and Road Initiative. The Yamal LNG project is also crucial for China's energy diversification strategy as it enables the country to reduce its dependence on traditional shipping routes. **China** relies on ice-class LNG carriers to ensure year-round transportation through the challenging Arctic. This collaboration strengthens **China**'s energy security and geopolitical influence and allows both countries to bypass Western sanctions and enhance their position in the global energy market. During the first half of 2024, 83% of Yamal LNG shipments were directed to Europe, and the remaining 17% were sent to Asia through the NSR, indicating the increasing role of the Arctic in global LNG trade.

The Yamal LNG Project is crucial for **Russia** due to its economic benefits for the region. It also helps diversify export routes as **Russia** faces sanctions due to the armed conflict in **Ukraine**. The partnership with **China** also helps provide financial support and technological expertise and helps Russia maintain its global energy leadership. This project benefits both countries by allowing them to remain or become prominent energy actors worldwide. It is also an example of strategic international collaboration in harsh environments like the Arctic.

[11] *"Yamal LNG Project Completed and Put Into Operation," Special Report*, n.d, https://www.cnpc.com.cn/en/csr2014enhms/201807/771c0549950f4420ad6de3972fe27073/files/88c8e515fb734e6984ef3599ab2255c2.pdf

2. Arctic LNG-2 Project

Following the success of the Yamal LNG project, **Russia** and **China** continued to strengthen their bilateral energy ties through the Arctic LNG-2 project. This Sino-Russian joint venture was launched in 2017 and aims to ensure a steady, long-term LNG supply to **China**. The Arctic LNG-2 project is a joint venture between **Novatek**, which holds a 60% stake, the **China National Petroleum Corporation** (**CNPC**) and the **China National Offshore Oil Corporation** (**CNOOC**), each with a 10% stake. The other shareholders included **TotalEnergies** (10%) and **Japan Arctic LNG** (10%). [12]

Through the Arctic LNG-2 project, **Novatek** plans to increase **Russia**'s LNG production capacity by 20% by 2030. The project is comprised of three production gravity-based structure (GBS) platforms that can each produce 6.6 million tons of LNG annually from the Salmanovskoye and Geofizicheskoye gas fields. This would significantly enhance **Russia** and **China**'s status in the global LNG market.[13]

China is playing an essential role in this project as an investor and as a supplier of critical components. Between 2021 and 2022, Chinese yards such as **Wison New Energies**, **Penglai Jutal Offshore Engineering** (**PJOE**), and **Bomesc Offshore Engineering** began manufacturing the prefabricated modules, which were then transported in early 2023 outside Murmansk in **Russia** near the construction site. Despite disruptions from the EU sanctions, the first production modules were completed and transported to the Gydan Peninsula by late 2023 and by 2024 the delivery of the second modules started. In July 2024, the Chinese company **Wison New Energies**, a key supplier for the project, announced it would no longer work on Russian projects due to the risk of secondary sanctions. Nonetheless, in September 2024, the company covertly shipped a critical power plant to the Arctic LNG-2 project. To bypass the sanctions on the project the modules were transshipped in intermediary ports in **China** and transferred between a series of vessels that concealed their identity and location.[14] **Novatek** still aims to begin LNG production from the second train by mid-2025 and to complete the third train in 2026, but these deadlines appear unrealistic due to continued delays and sanctions.

The Arctic LNG 2 project has been significantly disrupted by U.S. and EU sanctions, which aim to strain the project's long-term viability. In April and May 2023, the **EU** adopted sanctions targeting LNG-related goods, technology, and services. This disrupted **Russia**'s Arctic LNG 2 project as Chinese shipyards, which were constructing LNG modules for **Novatek**, had to cease work. This affected the completion of the production lines and made the project's timeline uncertain. **Technip Energies**, which had secured a $7.6 billion contract for the project, also began transferring control to **Novatek** due to the sanctions. Western partners,

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[12] Malte Humpert, *"China Acquires 20 Percent Stake in Novatek's Latest Arctic LNG Project",* High North News, 29 April 2019, https://www.highnorthnews.com/en/china-acquires-20-percent-stake-novateks-latest-arctic-lng-project

[13] "*Arctic GNL 2*," Wkipedia, February 27, 2025, https://fr.wikipedia.org/wiki/Arctic_GNL_2.

[14] Malte Humpert, *"Inside the Elaborate Scheme to Transport a Chinese Power Plant to Russia's Arctic Undetected"*, High North News, 01 October 2024, https://www.highnorthnews.com/en/inside-elaborate-scheme-transport-chinese-power-plant-russias-arctic-undetected

including **Total**, **BP**, **Shell**, and **Linde**, also withdrew from the Arctic LNG 2 project, further jeopardizing the project's completion.[15] Additionally, in April 2023, new **EU** sanctions were adopted focusing on the export of liquefaction and cryogenic equipment to **Russia**. In June 2024, additional sanctions prohibited the provision of goods, technology, and services to complete LNG projects under construction, including Arctic LNG 2. The **EU** imposed further sanctions in September 2024 on vessels intended as transshipment terminals for LNG cargoes from the Arctic LNG 2 project.

Despite these restrictions, European companies continued to supply the project and shipped over $630 million worth of equipment between May 2022 and January 2024. Part of these were routed through **China**, but a significant portion was shipped directly from Europe.[16]

In November 2023, the **U.S**. sanctioned the Arctic LNG 2 project by barring all financial transactions with U.S. entities and pressuring international partners to reconsider their involvement. In February 2024, expanded sanctions targeted icebreaking LNG tankers critical for Arctic LNG 2 logistics. in January 2025, the U.S. extended sanctions to additional Chinese firms, including **Wison New Energies**, for their role in covertly shipping a power plant for the LNG-2 project.

The **EU** and **US** sanctions on selling, supplying, and exporting LNG-related goods and services have several implications for **China** and **Russia**. They have further isolated **Novatek** and restricted its access to Western technology, forcing it to rely more heavily on Chinese suppliers. Additionally, **China** is becoming the primary buyer of Arctic LNG 2's output, which gives it leverage to negotiate lower LNG prices and more flexible payment terms. Chinese firms, already holding a 20% stake in the project, may increase their involvement to fill in gaps left by Western companies withdrawing. Nonetheless, Chinese firms involved in the Arctic LNG 2 project may risk secondary sanctions from the **U.S.** and **EU**. Still, they might disguise or reroute their support through intermediary companies to avoid direct penalties. So far, **China** has tried to resist Western pressure to cut ties with this project. [17, 18]

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[15] Malte Humpert, "*EU Sanctions Stop Construction of Arctic LNG 2 Modules in China"*, High North News, 10 May 2022, https://www.highnorthnews.com/en/eu-sanctions-stop-construction-arctic-lng-2-modules-china

[16] Moscow Times, "*EU Firms Supply $630Mln in Equipment to Russia's Arctic LNG 2 Project Despite Sanctions"*, The Moscow Times, 21 March, 2025, https://www.themoscowtimes.com/2024/03/12/eu-firms-supply-630mln-in-equipment-to-russias-arctic-lng-2-project-despite-sanctions-a84430

[17] Atle Staalesen Null, *"Another Chinese LNG Module Arrives in Belokamenka"*, The Barents Observer, 03 April 2024, https://www.thebarentsobserver.com/arctic-lng/another-chinese-lng-module-arrives-in belokamenka/140510 , Malte Humpert, "*Russia's Novatek on Track to Complete 2nd Train of Arctic LNG 2 in 2024"*, High North News, 23 January 2024, https://www.highnorthnews.com/en/novatek-track-commission-train-2-arctic-lng-2-2024-final-module-leaving-chinese-yard, Malte Humpert, "*China Continues to Deliver Prefabricated Modules in Support of Russia's Arctic LNG 2 Project"*, High North News, 08 January 2024, https://www.highnorthnews.com/en/china-continues-deliver-prefabricated-modules-support-russias-arctic-lng-2-project

[18] Malte Humpert, "*Chinese Power Plant Arrives at Sanctioned Russian Arctic LNG Project After Push Through Dangerous Sea Ice"*, gCaptain, 28 October 2024, https://gcaptain.com/chinese-power-plant-arrives-at-sanctioned-russian-arctic-lng-project-after-push-through-dangerous-sea-ice/ , Malte Humpert, "*Russia's Novatek to Complete Arctic LNG 2 by 2026 Despite Sanctions*", High North News, 17 June 2024, https://www.highnorthnews.com/en/russias-novatek-complete-arctic-lng-2-2026-despite-sanctions , "*Western Sanctions on Icebreakers Stall Russia's Arctic LNG Expansion,"* Elcano Royal Institute, 27 June

B. Oil and Gas Exploration & Transport

1. The Kara Sea Oil Exploration

The Kara Sea, part of the Russian Arctic, is one of the world's most promising offshore oil and gas areas. The Leningradskoye, Dinkov, Nyarmeyskoye, Vikulkovskaya, and Ragozinskaya fields contain tens of billions of barrels of oil and substantial natural gas reserves. It is estimated that the Leningradskoye field**,** drilled by **Gazprom** Neft, holds an estimated 1.9 trillion cubic meters of gas and that the Vikulkovskaya and Ragozinskaya fields exploited by **Rosneft**'s fields hold 1.3 trillion cubic meters of gas.

China has emerged as a key player in **Russia**'s Arctic offshore oil exploration. **Russia** increasingly relied on **China Oilfield Services Limited** (**COSL**) for drilling expertise, equipment, and investment. Starting in 2017, the company led multiple drilling campaigns in the Leningradskoye, Rusanvoskoye, and East Prinovozemelsky fields, contributing to significant oil and gas discoveries. Following Western sanctions imposed after the 2014 annexation of Crimea and further expanded following the 2022 invasion of **Ukraine**, **China** has stepped in to provide expertise, equipment, and logistical support to Russian companies such as **Gazprom** and **Rosneft**.[19]

2024, https://www.realinstitutoelcano.org/en/analyses/western-sanctions-on-icebreakers-stall-russias-arctic-lng-expansion/, Peter B. Danilov, "*Novatek Signs Contract on Long Term LNG Supply With Two Chinese Companies," High North News*, 11 January 2022, https://www.highnorthnews.com/en/novatek-signs-contract-long-term-lng-supply-two-chinese-companies, Emily Chow, *"China's New Energies to Quit Russian Projects in blow to Arctic LNG 2*", Reuters, June 2024, https://www.reuters.com/business/energy/chinas-wison-new-energies-quit-russian-projects-blow-arctic-lng-2-2024-06-21/, Malte Humpert, *"China Continues to Deliver Prefabricated Modules in Support of Russia's Arctic LNG 2 Project," High North News*, 08 January 2024, https://www.highnorthnews.com/en/china-continues-deliver-prefabricated-modules-support-russias-arctic-lng-2-project

[19] Atle Staalesen, "*Chinese Rig Proceeds Drilling in Kara Sea*," ArcticToday, 02 August 2017, https://www.arctictoday.com/chinese-rig-proceeds-drilling-in-kara-sea/, Atle Staalesen Null, "*Chinese Rig Proceeds Drilling in Kara Sea*", The Barents Observer, 01 August 2017, https://www.thebarentsobserver.com/industry-and-energy/chinese-rig-proceeds-drilling-in-kara-sea/134299, Asia Times Staff, "*Chinese Oilmen Make Huge Strike in Russia'S Arctic Waters*", Asia Times, 18 February 2020, https://asiatimes.com/2018/04/chinese-oilmen-make-huge-strike-russias-arctic-waters/, Atle Staalesen, "*Chinese Drill Rigs Make Big Gas Discovery in Russian Arctic Waters*", ArcticToday, 06 April 2018, https://www.arctictoday.com/chinese-drill-rigs-make-big-gas-discovery-russian-arctic-waters/, Thomas Nilsen Independent Barents Observer, "*Chinese Rig to Return to Russia's Kara Sea This Summer in Hopes of Third Major Find*", ArcticToday, 20 May 2019, https://www.arctictoday.com/chinese-rig-to-return-to-russias-kara-sea-this-summer-in-hopes-of-third-major-find/, Thomas Nilsen Null, "*With Chinese Rig, Gazprom Makes Another Major Kara Sea Discovery*", The Barents Observer, 12 October, 2020, https://www.thebarentsobserver.com/industry-and-energy/with-chinese-rig-gazprom-makes-another-major-kara-sea-discovery/138931, Atle Staalesen Null, "*Two Chinese Rigs Prepare for Drilling in Russian Arctic Water*", The Barents Observer, 29 June 2020, https://www.thebarentsobserver.com/industry-and-energy/two-chinese-rigs-prepare-for-drilling-in-russian-arctic-waters/138689,

2. The Payakha Oilfield Project

The Payakha Oilfield in **Russia**'s Arctic Taymyr Peninsula holds an estimated 1.2 billion tons of Oil. Neftegazholding held the rights to develop the project, but **Rosneft** acquired them and incorporated them into its Vostok Oil project. This oilfield is crucial to **Rosneft**'s strategy of utilizing the NSR for oil shipments. The company is also constructing a central oil terminal in the port of Bukhta Sever to facilitate annual shipments of 30 million tons of oil, with plans to increase this amount to 100 million tons by 2030. In 2019, the Chinese company **CNCE** signed a development framework agreement to invest approximately USD 5 billion over four years in the Payakha Oilfield. Under the forthcoming engineering, procurement, and construction (EPC) contract, **CNCE** is expected to supply crude oil processing equipment for six oil fields, a shipping dock capable of handling 50 million tons, pipelines stretching 410 km, a 750 MW power station to support oilfield operations, and oil storage tanks to aid large-scale production and exports. The Payakha Oilfield Project aligns with **China**'s broader Arctic ambitions, focusing on the diversification of energy sources, energy security, and geopolitical influence. This project also strengthens economic ties between Russia and **China** within the framework of the Polar Silk Road. Projects such as these also help **China** reduce its dependency on Middle Eastern oil. Chinese investments and imports have become increasingly crucial for **Russia** as it faces Western sanctions on its Arctic energy sector and the loss of European markets.[20, 21]

3. The Siberia 2 Project

To supply **China** with more gas, **Russia** plans to link its Arctic gas fields in the Yamal Peninsula through the Power of Siberia 2 pipeline, which could carry 50 billion cubic meters per year. The region is one of **Russia**'s most significant natural gas production areas.

This 6,000-kilometer pipeline is intended to compensate for lost European gas exports. As Europe reduced its reliance on Russian gas consumption, **Gazprom** suffered significant financial losses, amounting to $6.9 billion in 2023. To compensate for these losses and secure long-term gas supply contracts, **Russia** is pressuring **China** to finalize the Power of Siberia 2 pipeline.

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[20] "*Rosneft Buys Huge Arctic Oilfield*", The Oriental Pro-Energy Consulting Organization, http://en.petroequipsourcing.com/cnt_789.html

[21] Atle Staalesen Null, "*Rosneft Consolidates Position in Largest Arctic Oil Project"* The Barents Observer, 02 December 2020, https://www.thebarentsobserver.com/industry-and-energy/rosneft-consolidates-position-in-largest-arctic-oil-project/139832, Atle Staalesen Null, "*Green Light for Huge Oil Terminal on Taymyr Coast*," The Barents Observer, 24 March, 2021, https://www.thebarentsobserver.com/industry-and-energy/green-light-for-huge-oil-terminal-on-taymyr-coast/139493, Tang Shihua, "*Chinese SOE Mucks in on Infrastructure for Russia's Payakha Oilfield*", Yicai Global, 10 June 2019, https://www.yicaiglobal.com/news/chinese-soe-mucks-in-on-infrastructure-for-russia-payakha-oilfield, "*Exploration and Development of the Payakha Fields and Construction of the New Port-North Bay Sea Terminal*", Yenisey Siberia Development Corporation, 01, February 2021, https://ensib.ru/en/kipproject/exploration-and-development-of-the-payakha-fields-and-construction-of-the-new-port-north-bay-sea-terminal/, Tass, "I*ndustrial Drilling Begins at Payakha Oil Field in Krasnoyarsk Region," TASS*, 14 June 2019, https://tass.com/economy/1063846

However, **China** hesitates to commit to its funding and development, unlike the Power of Siberia 1 project, where the **China National Petroleum Corporation (CNPC)** directly financed the Chinese section of the pipeline construction. The Power of Siberia 2 pipeline is currently facing delays as **China** is not in a rush for additional gas deliveries. The country has already diversified its natural gas suppliers beyond **Russia**, such as LNG imports from **Australia** and **Qatar** and the Central Asia-China pipeline, which transports gas to **Turkmenistan, Kazakhstan, and Uzbekistan**. **China**'s domestic production has also grown, reducing the immediate need for Russian gas.

Russia increasingly depends on **China** for its gas exports, which gives Beijing the upper hand in negotiations. Another reason the project is moving slowly is that the pipeline would transit through **Mongolia**, although the country is favorable due to the economic benefits of the transit fees. Still, **China** is seeking lower prices and more flexible terms. As **Gazprom** has yet to finalize an agreement, it is unlikely that Power of Siberia 2 will be operational before 2029 or later.[22]

C. Mining and Rare Earth Extraction

1. The Pizhemskoye Titanium Deposit

The Pizhemskoye Titanium Deposit, which is located in the Komi Republic, is believed to be the largest titanium reserve in **Russia** and the world, with estimated reserves of over 100 million tons of titanium dioxide. In 2022, the deposit had an estimated worth of $2.5 billion. **Russian Titanium Resources** (**Rustitan**) discovered the Pizhemskoye deposit in 2021, and in 2023, it signed an agreement with **China Communications and Construction Company** (**CCCC**) to develop the project. This partnership includes building a mining and metallurgical complex, expanding the Arctic deep water port of Indiga, and constructing the 560-kilometer

[22] P&GJ Staff and Wire Report*," Gazprom Begins Preparation for Power of Siberia-2"*, Pipeline & Gas Journal, 18 May 2020, https://pgjonline.com/news/2020/05-may/gazprom-begins-preparation-for-power-of-siberia-2#:~:text=Russian%20gas%20giant%20Gazprom%20has%20begun%20a%20feasibility,year%20via%20Mongolia%2C%20the%20Russian%20gas%20producer%20said, "*Power of Siberia*," Wikipedia, 12, December 2024, https://en.wikipedia.org/wiki/Power_of_Siberia, Vladimir Soldatkin, "*Russia's weaker hand undermines case for Power of Siberia 2 gas link to China"*, Reuters, *30 October 2023*, https://www.reuters.com/business/energy/russias-weaker-hand-undermines-case-power-siberia-2-gas-link-china-2023-10-30/, Annabel Cossins-Smith and Annabel Cossins-Smith, "*Russia-China Gas Pipeline Faces Construction Delays"*, Offshore Technology, 29 January 2024, https://www.offshore-technology.com/news/russia-china-power-of-siberia-2-pipeline-delayed/ , Yuan Yang, Anastasia Stognei, and Joe Leahy, "*Power of Siberia: China Keeps Putin Waiting on Gas Pipeline"*, Financial Times, 25 May 2023, https://www.ft.com/content/541f8bcb-118a-419e-869f-3273fcc9ce92, "*China completes full pipeline for Power-of-Siberia gas*", Reuters, 02 December 2024, https://www.reuters.com/business/energy/china-completes-full-pipeline-power-of-siberia-gas-2024-12-02/, "*Russia's planned gas pipeline to China faces construction delay, Financial Times reports*", Reuters, 28 January 2024, https://www.reuters.com/markets/commodities/russias-planned-gas-pipeline-china-faces-construction-delay-ft-2024-01-28/, Ariel Cohen, "*The Strategic Upside Behind Russia's $55 Billion 'Power of Siberia' Pipeline to China"*, Forbes, 06 December 2019, https://www.forbes.com/sites/arielcohen/2019/12/06/is-there-strength-behind-russia-and-chinas-new-power-of-siberia-pipeline/, Reuters, "*Gazprom starts work on Power of Siberia-2 pipline to China*, 18 May 2024, https://www.reuters.com/article/russia-china-gazprom-idUSR4N2CB012/,

Sosnogorsk-Indiga railway connection. Once operational, the Indiga port is expected to handle 30 million tons of cargo by the end of the decade and over 80 million tons by the 2030s. The estimated cost for the development of the mining complex is $2.5 billion and $6.7 billion for the railroad. This partnership further deepens Sino-Russian cooperation in the Arctic, providing Russia with long-term economic gains.[23]

2. Cooperation on Lithium extraction

To develop **Russia**'s largest lithium deposit, containing 75 million tons of ore, which is more than 24% of the country's reserves, **Rosatom** and **Nornickel** created **Polar Lithium**, a joint venture. This project, located in the Murmansk Region, integrates mining, processing, and battery production for energy storage systems. It also aims to reduce the country's dependency on lithium imports, a key mineral for electric vehicle batteries and renewable energy storage. **Russia**'s supplies from **Chile** and **Argentina** were stopped due to sanctions after the invasion of **Ukraine,** and the country could only rely on **Bolivia** and **China** to import lithium carbonate. In 2024, Chinese firm **MCC International** joined the project and was expected to take part in the development of the mine and extraction of lithium. This partnership aimed to increase **China**'s involvement in the Arctic and reinforce its supply chain security for critical minerals. According to estimates, the project could produce 2 million tons of ore and 45,000 tons of lithium hydroxide and carbonate annually by 2030 but was accelerated to begin production around 2026-2027. **Rosatom**'s **Rusburmash** and **Nornickel**'s **Norilsk Technical Services** completed the exploration drilling in 2023-2024. In January 2025, the project was added to the U.S. sanctions list, which could significantly disrupt the project, especially the partnership with **MCC International**. Given the risks of violating U.S. sanctions, the Chinese state-owned company might no longer want to be involved in the project.[24]

[23] Florence Jones, "*China to Operate in the Development of Russian Arctic Titanium Mine,"* Mining Technology, 23 February 2023, https://www.mining-technology.com/news/china-russia-titanium-mine/, Malte Humpert, "*Russian Mining Company Partners With China to Develop Massive Titanium Deposit in Arctic," High North News*, 6 February, 2023, https://www.highnorthnews.com/en/russian-mining-company-partners-china-develop-massive-titanium-deposit-arctic, Tass, "*Komi Governor: Development of Pizhemskoye Titanium Deposit Begins*", *TASS*, 20, July 2022, https://tass.com/economy/1482467

[24] *Polar Lithium Completes Fieldwork Stage of Exploration at Kolmozerskoye Lithium Deposit* - News and Releases - Nornickel," Nornickel, n.d., https://nornickel.com/news-and-media/press-releases-and-news/polar-lithium-completes-fieldwork-stage-of-exploration-at-kolmozerskoye-lithium-deposit/, "*Polar Lithium, a Joint Venture of Nornickel and Rosatom, Receives Right to Develop Kolmozerskoye Project*", Nornickel, 08 February 2023, https://nornickel.com/news-and-media/press-releases-and-news/polar-lithium-a-joint-venture-of-nornickel-and-rosatom-receives-license-to-develop-kolmozerskoye-project/, "*Russia to Speed up Sole Lithium Project to Cut Import Reliance"*, MINING.COM, 06 June 2024, https://www.mining.com/web/russia-to-speed-up-sole-lithium-project-to-cut-import-reliance/, "*Nornickel and Rosatom lithium JV to work with Chinese technology partner*", Interfax 31 July 2024, https://interfax.com/newsroom/top-stories/104673/, Atle Staalesen Null and Denis Zagore Null, "*Chinese Developers Come to Lithium Mine in Murmansk," The barents observer*, 01 August 2024, https://www.thebarentsobserver.com/news/chinese-developers-come-to-lithium-mine-in-murmansk/109677.

D. Russia Becoming China's Top Natural Resources Supplier

Russia and **China**'s energy cooperation has historically focused on the Russian Far East and Eastern Siberia; however, it has shifted to the Arctic over the past few decades. In 2013, during Chinese President **Xi Jinping**'s 2013 visit to **Russia**, **Rosneft** and **CNPC** signed a deal to **explore three oil fields** in the Barents and Pechora Seas. The Medyskoe and Varandeyskoe Sea fields were projected to produce 3.9 million and 5.5 million tons of oil annually, respectively. Rosneft reaffirmed its interest in further Chinese participation in 2014 and 2015. Still, **China** was reluctant to invest then and was waiting for favorable investment conditions rather than simply wanting to join Russian-led projects. [25]

Following the annexation of Crimea, the armed conflict in **Ukraine,** and Europe's decreased dependency on Russian fossil resources, Russia turned to **China** to maintain its energy industry and export revenue. **Russia** has become **China**'s primary energy supplier, and oil, natural gas, and coal exports have reached unprecedented levels despite ongoing geopolitical tensions and Western sanctions.

In 2022, according to customs data, **Russia** exported over 86 million tons of oil to **China**, ranking second after **Saudi Arabia**'s 87.5 million tons. In 2023, **Russia** surpassed **Saudi Arabia** as **China**'s largest crude oil supplier, shipping a record 107 million metric tons (2.14 million barrels per day). This is mainly due to **Russia**'s need to sell its oil even at discounted rates, making it more attractive than Middle Eastern oil. During the first 10 months of 2024, **Russia** became **China**'s top supplier of crude oil, with an almost 20% market share. **China** imported 2.17 million barrels daily, up 2.2% from the previous year. Rosneft has deals with the **CNPC** to deliver crude to **China** through the Atasu-Alashankou pipeline and ESPO Blend via the Skovorodino-Mohe pipeline.

Another vital route for oil exports to **China** is the Skovorodino-Mohe pipeline, which runs 4070 km from the Russian oil fields in Eastern Siberia to Mohe in **China**'s Heilongjiang province. **Rosneft** and **CNPC** signed a 25-year deal in 2009 to supply 15 million metric tons per year (about 300,000 barrels per day) of crude oil via this route. In 2022, both companies expanded their cooperation and agreed to increase crude supplies via this pipeline system,

To circumvent Western sanctions, Chinese companies have relied on foreign nations to serve as intermediaries and provide cover for Russian crude exports. Some Russian oil shipments have been rebranded through third-party countries or transshipped via offshore

[25] Theodore MacDonald, *"China and Russia Conclude Significant Energy Agreements"*, American Security Project, 27 March 2013, https://www.americansecurityproject.org/china-and-russia-conclude-significant-energy-agreements/ , Camilla T. N. Sørensen, Ekaterina Klimenko, and SIPRI, "*Emerging Chinese–Russian Cooperation In The Arctic"*, SIPRI, June 2017, https://www.sipri.org/sites/default/files/2017-06/emerging-chinese-russian-cooperation-arctic.pdf.

transfer points to minimize the risk of directly violating U.S. and EU restrictions. Chinese refineries have increasingly depended on intermediaries to facilitate Russian crude purchases.

Russia also aims to diversify transit routes to reduce dependency on Western-controlled shipping lanes. It is notably using **Kazakhstan**'s pipeline network to export oil to **China**. In 2024, 9.1 million tons of oil transited through **Kazakhstan**, and the country is currently negotiating with **Russia** to expand transit routes to further increase flows. **Kazakhstan**'s oil pipeline operator, **KazTransOil**, and the Russian company **Gazprom** have extended an agreement to deliver Russian oil to **China** via **Kazakhstan** until January 1, 2034. Under this agreement, 733 million barrels of oil will be delivered annually to **China**. **Rosneft** also has long-term supply agreements with the **CNPC** to transport crude via the Atasu-Alashankou pipeline and the Skovorodino-Mohe pipeline, which spans 965 kilometers between Atasu in central **Kazakhstan** and the Alashankou border crossing into **China**'s Xinjiang region. Through this pipeline, **Rosnef**t supplies 10 million metric tons (about 200,000 barrels per day) of crude oil per year to **China**.[26]

In January 2025, the **U.S**. imposed sanctions on 180 Russian oil tankers and major energy companies, such as **Gazprom Neft** and **Surgutneftegaz,** impacting 25% of **Russia**'s oil exports (970,000 barrels per day). The new sanctions have disrupted **Russia**'s Arctic and Far East oil exports and compromised deliveries to **India** and **China**. Indian companies halted their purchases from blacklisted Russian tankers. These sanctions targeted 70% of Russia's Kozmino-bound tankers, a key hub for ESPO (East Siberia–Pacific Ocean) crude which is primarily exported to **China** and other Asian markets. **Russia** was forced to redeploy tankers from its western ports to maintain its shipments to **China**, making oil exports more expensive. Some companies have tried to circumvent these new sanctions by unloading oil at lesser-known terminals or conducting ship-to-ship transfers in international waters. **China** continues to seek ESPO crude due to its high quality. However, due to the sanctions, ESPO oil shipments on non-sanctioned tankers are selling at a premium, and those transported via restricted tankers are heavily discounted. Due to the scarcity of non-sanctioned tankers, **Russia** is dependent on Chinese cooperation and alternative shipping methods.[27]

In 2024, **Russia** became **China**'s third-largest LNG supplier, delivering 6.74 million metric tons, which accounted for 10.6% of **China**'s total LNG imports. The county is also

[26] Zhanbolat Mamyshev, "*Russia Ships 10 Million Tons of Oil Through Kazakhstan to China"*, Kursiv, 06 January 2025, https://kz.kursiv.media/en/2025-01-06/engk-yeri-russia-ships-10-million-tons-of-oil-through-kazakhstan-to-china/ , Charles Kennedy, "*Russian Oil Flows to China via Kazakhstan Remain Flat in 2024,"* OilPrice.Com, 06 December 2024, https://oilprice.com/Latest-Energy-News/World-News/Russian-Oil-Flows-to-China-via-Kazakhstan-Remain-Flat-in-2024.html.

[27] Tsvetana Paraskova, "*Russia Reshuffles Tankers to Keep Shipping Oil to China After US Sanctions"*, OilPrice.Com, 22 January 2025, https://oilprice.com/Latest-Energy-News/World-News/Russia-Reshuffles-Tankers-to-Keep-Shipping-Oil-to-China-After-US-Sanctions.html. , , "U.*S Sanctions: Russia's Arctic Oil feels the chills",* Reuters, 14, January, 2025 https://www.reuters.com/business/energy/russias-arctic-oil-feels-chill-us-sanctions-2025-01-14/, Alex Kimani, "*Russian Tanker Discharges Oil at Chinese Port After U.S. Sanctions"*, Oil Price 16 January 2025, https://oilprice.com/Energy/Crude-Oil/Russian-Tanker-Discharges-Oil-at-Chinese-Port-After-US-Sanctions.html.

China's top natural gas supplier, with 8 billion cubic meters supplied by pipeline in 2024 through the 3,000-km Power of Siberia pipeline that links **Russia**'s Chayandinskoye and Kovytka gas fields **China**. This pipeline is a cheaper option than LNG imports.[28]

China's interest in Russian LNG primarily stems from its low prices and the energetic security it provides. Joint projects such as Arctic LNG 2 have enabled **China** to diversify its energy sources. The **U.S.** and **EU** sanctions on Russia's LNG sector have also complicated **China**'s willingness to finance and develop future joint projects.

Russia has solidified its role as **China**'s primary energy supplier. However, this alliance is fundamentally rooted in economic pragmatism. **China**'s commitment will continue only as long as it benefits the country. Beijing prioritizes its financial and geopolitical interests, does not overextend its reliance on Russian resources, and continues to import from various alternative energy partners to ensure a balanced supply. If geopolitical and market dynamics change, **China** will likely adjust its stance. While this partnership has strengthened bilateral energy ties, it is also increasingly becoming asymmetrical. **Russia** is becoming more dependent on **China** for its fossil fuel exports, while **China** has secured cheap, long-term energy supplies amid global supply chain uncertainties. **Russia**'s economic situation and isolation limit its ability to dictate terms in future energy agreements.

III. Militarization by Russia and China's Growing Interest

A. Russia's Expanding Military Footprint in the Arctic

To protect its interests and investments, ensure the control of the NSR, and the exploitation of its resources, **Russia** has been resuscitating old Soviet bases and heavily militarizing the Arctic.[29] Since 2013, the country has spent billions of dollars in a re-militarization program, with numerous military bases being built, refurbished, or upgraded in the Arctic region. This modernization program includes thirteen air bases, ten radar stations, twenty border outposts, and ten integrated emergency rescue stations. These are positioned to monitor Arctic activities and deter **NATO**'s growing presence.[30]

These military bases are mostly located on islands and peninsulas along the NSR and are prepared for Arctic warfare. They are equipped with snowmobiles, jet fighters (**MiG-31** interceptors with a 2,000 km range), helicopters, advanced radar systems (Sopka-2), missile defense systems (**P-800 Oniks** supersonic anti-ship missiles and **S-300** anti-aircraft missile systems), and hypersonic cruise missiles.

[28] "*Power of Siberia"*, Wikipedia, 12 December 2024, https://en.wikipedia.org/wiki/Power_of_Siberia.
[29] Viktorija Rusinaite,"*Russia's Arctic Development Poses Risks for Combating Climate Change in the Baltics*", Foreign Policy Research Institute, 24 April 2020, https://www.fpri.org/article/2020/04/russias-arctic-development-poses-risks-for-combating-climate-change-in-the-baltics/
[30] Malte Humpert, "*Russia Upgrades Key Arctic Military Base With Expanded Runway"*, High North News, 14, August 2024, https://www.highnorthnews.com/en/russia-upgrades-key-arctic-military-base-expanded-runway.

Russia's Arctic military bases were primarily concentrated around the Murmansk Oblast, but **Russia** has expanded its capabilities in the High North with military bases in recent years. Since 2015, **Russia** has been creating or upgrading existing air bases on the islands of Franz Josef Land, Severnaya Zemlya, Wrangel Island, Cape Schmidt, Kotelny Island (Temp airbase), and Novaya Zemlya (Rogachevo airbase)[31]. The Russian military installed **Bastion-P** coastal missile systems and **Pantsir-S1** air-defense systems on Kotelny Island and Novaya Zemlya and **Sopka-2** radar systems on Wrangel Island and Cape Schmidt.[32]

In 2016, the Russian Navy also created a permanent base on Kotelny Island and inaugurated its new facilities on Aleksandra Land, where **Russia**'s Arctic forces revived the country's northernmost military facility (Nagurskoye Airbase). This base is strategically important as its **Su-34** and **MiG-31** fighter jets can reach the Thule American Air Base in Greenland with air-to-air refueling. Alexandra Land also plays a critical role in protecting the Kola Peninsula, home to the Northern Fleet headquarters at Severomorsk, which has served since 2014 as **Russia**'s Arctic Strategic Command.[33]

The most recent upgrade is the Temp Air Base on Kotelny Island, where **Russia** has extended and paved a 2,100-meter runway. It allows for the deployment of long-range interceptors, bombers, and reconnaissance aircraft. The Severny Klever (Northern Trefoil) military complex has also been enhanced with **Sopka-2** radar stations**, Bastion-P** coastal missile systems, **Pantsir-SA** air-defense units, and **S-300/S-400 SAM systems**. These additions strengthen Russia's ability to track and engage potential threats along the NSR.[34]

The country also permanently deployed the **99th Arctic Tactical Group** to Kotelny Island and converted the **200th Independent Motor Rifle Brigade** and the **80th Independent Motor Rifle Brigade** into Arctic Brigades40.

The Northern Fleet is Russia's primary Arctic military force at sea. Its leading roles include securing Arctic waterways, defending the NSR, protecting nuclear deterrent capabilities, and projecting naval power in the North Atlantic. Since the early 2000s, **Russia** has prioritized its modernization, recognizing its strategic importance. The Northern Fleet operates as an independent branch of **Russia**'s military within the Russian Armed Forces. It houses two-thirds of **Russia**'s nuclear-powered vessels, including eight ballistic missile submarines (SSBNs) capable of launching intercontinental nuclear strikes. The fleet comprises additional attack and guided missile submarines, many armed with Kalibr and Oniks cruise

[31] Joseph S. Bermudez Jr., Heather A. Conley, and Matthew Melino, "*Ice Curtain: Why Is There a New Russian Military Facility 300 Miles from Alaska?*", Center for Strategic and International Studies (CSIS), 24 March 2020, https://www.csis.org/analysis/ice-curtain-why-there-new-russian-military-facility-300-miles-alaska

[32] *"Northern Fleet*", Wikipedia, 24 February 2025, https://en.wikipedia.org/wiki/Northern_Fleet.

[33] Matthew Melino, Heather A. Conley, and Joseph S. Bermudez Jr., "*The Ice Curtain: Bringing Transparency to the Arctic"*, Center for Strategic and International Studies (CSIS), 27 March 2020, https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/Conley_AlexandraLand_FINAL_UPDATE_v2.pdf

[34] Malte Humpert, *"Russia Upgrades Key Arctic Military Base With Expanded Runway"*, High North News, 14 August 2024, https://www.highnorthnews.com/en/russia-upgrades-key-arctic-military-base-expanded-runway.

missiles capable of striking distant targets across the Arctic and beyond.[35] **Russia** also has an icebreaker fleet of 46 vessels to ensure year-round military and commercial operations in the Arctic.

According to a **Norwegian Intelligence Service** (**NIS**) report, the Northern Fleet faces challenges with maintenance backlogs, aging vessels, and limited shipyard capacity. The aircraft carrier Admiral Kuznetsov and the battlecruiser Admiral Nakhimov have also experienced delays in their repair and modernization due to corruption, technical failures, and inefficiencies at the shipyards, which weaken **Russia**'s surface naval power in the Arctic.

Russia's submarine forces continue to expand, and it recently deployed the Yasen-class attack submarine Arkhangelsk to the Northern Fleet. It also redeployed Borei-A class ballistic missile submarines Tsar Alexander III and Krasnoyarsk from the Pacific to the Arctic. These submarines are equipped with Bulava nuclear missiles.[36]

All of these military bases play a crucial role in **Russia'**s strategic vision of the Arctic. They serve as essential outposts to secure the coastlines, deny any potential aerial, maritime, or land access to **NATO** forces, and observe **NATO** activity. Russia is surrounded by members such as **Canada**, **Norway**, the **U.S**, the **United Kingdom,** and **Denmark**. **Russia** can also detect and track vessels and aircraft on the NSR with all these bases. According to **Russia**, this expansion counterbalances NATO's growing presence, especially following **Finland** and **Sweden**'s accession to the alliance. **Russia** is the dominant military power in the Arctic, but logistical constraints, economic sanctions, and technological bottlenecks continue to pose significant challenges to its long-term Arctic strategy.

B. China's Growing Interest in Arctic Security

China does not maintain a formal military presence in the Arctic, but it has numerous regional strategic and economic interests. The country views the Arctic as crucial for shipping, resource extraction, and military operations. **China** wishes to increase its scientific, diplomatic, and military influence in the region.

The country actively pursues partnerships with **Russia**, focusing on joint energy and research projects, infrastructure investments, and scientific expeditions. This collaboration has the potential to evolve into deeper security cooperation as **China** seeks access to Arctic resources and strategic maritime routes. **China**'s activities in the Arctic are raising concerns

[35] Thomas Nilsen, *"Northern Fleet Faces Wide Gap Between Ambitions and Resources, Intel Report"*, The Barents Observer, 08 February 2025, https://www.thebarentsobserver.com/security/northern-fleet-faces-wide-gap-between-ambitions-and-resources-intel-report/424194.

[36] Astri Edvardsen, "*The Russian Northern Fleet: New Acting Commander and Several New Submarines*," High North News, 22 March, 2024, https://www.highnorthnews.com/en/russian-northern-fleet-new-acting-commander-and-several-new-submarines.

due to their dual-use nature. These include satellite surveillance, autonomous underwater research, and Arctic-capable naval assets.

China has been expanding its Arctic research and surveillance capabilities through strategic investments. It established satellite ground stations in **Sweden** and Greenland [37], launched the BeiDou navigation satellite system, an alternative to GPS, that supports military positioning and Arctic operations.[38]

China has invested heavily in ice-breaking capabilities to expand its Arctic footprint. Its fleet includes the Xuelong and Xuelong 2 icebreakers, which have completed over ten Arctic expeditions. In 2024, it also commissioned the Jidi, a new-generation polar research vessel equipped with drones, autonomous underwater robots, and advanced survey tools.[39] There have been reports that China plans to construct a heavy-duty icebreaker by 2025, capable of operating year-round and breaking through ice up to 2 meters thick. **China** has also been investing in the development of a nuclear-powered icebreaker. In 2018, the state-owned company **China National Nuclear Corporation** (**CNNC**) revealed it plans to develop such an icebreaker powered by two 25 MW compact pressurized water reactors. The project would progress under a newly established subsidiary, **CNNC Marine Nuclear Power Development** (**CNNC Marine**). In 2019, **China** provided additional specifications, including a length of 152 meters, a width of 30 meters, and a displacement of 30,000 tons. Construction is set to begin in 2025. Such a vessel would enable **China** to compete with Arctic powers like **Russia**, which already operates similar icebreakers. It would assist the country in achieving its goals in scientific research, resource exploration, and strategic shipping routes along the Polar Silk Road.

The **People's Liberation Army Navy** (**PLAN**) has also been increasing its patrols in Arctic-adjacent waters and has made goodwill visits to **Denmark**, **Sweden**, and **Finland**. In September 2024, Chinese and Russian coast guards conducted joint patrols in the North Pacific Ocean and the Bering Sea, marking the **China Coast Guard**'s (**CCG**) first-ever entry into the Arctic Ocean.

The **China Coast Guard**, which operates under the **People's Armed Police** and the **Central Military Commission**, has played a central role in asserting **China**'s territorial claims in the South China Sea. This milestone is a significant advancement in the maritime

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[37] "*China mixing military and Sience in Arctic push- Denmark"*, Reuters, 29 November 2019 https://www.reuters.com/article/us-usa-arctic/china-mixing-military-and-science-in-arctic-push-denmark-idUSKBN1Y3116

[38] *"Facing up to China's Military Interests in the Arctic"* Jamestown, 18 November 2020, https://jamestown.org/program/facing-up-to-chinas-military-interests-in-the-arctic/.

[39] Global Times, "*R&D of Next-gen Icebreaker Progresses Smoothly in China,",* The Global Times, 2021 https://www.globaltimes.cn/page/202408/1318507.shtml.

Jon Sharman, *"A Great Power Play Is Shaping up': China's Military Using Scientific Research to Push Into Arctic, Danish Intelligence Report Says",* The Independent, 30 November 2019, https://www.independent.co.uk/news/world/asia/china-military-arctic-research-science-denmark-intelligence-russia-usa-a9226596.html.

collaboration between Russia and China and has important strategic implications. It underscores the geopolitical alignment and shared economic interests between both countries.[40]

Conclusion:

The increasing cooperation between **Russia** and **China** in the Arctic reshapes the region's geopolitical and economic landscape. Due to the increasing Western sanctions and restricted access to European markets, **Russia** has become more reliant on **China** as a financial backer and energy partner. Nonetheless, this partnership remains asymmetrical, and **China** is pragmatic as it currently focuses on its energy security and geopolitical flexibility rather than steadfast support for Moscow.

China's investments in Arctic energy projects, such as Yamal LNG and Arctic LNG-2, have kept **Russia**'s Arctic ambitions afloat despite international sanctions and the withdrawal of Western companies. However, **China** remains cautious and aware of the risks of secondary sanctions and potential economic disruptions. The Northern Sea Route (NSR) is a key area of Sino-Russian collaboration. It offers **China** a shorter and more cost-effective trade route while aligning with Russia's goal of establishing the Arctic as a significant shipping corridor. Yet logistical challenges, environmental concerns, and geopolitical risks limit **China**'s enthusiasm.

Beyond energy and trade, **China**'s Arctic ambitions encompass infrastructure development, scientific research, and polar navigation advancements. Beijing seeks to expand its influence in regional decision-making by leveraging its observer status in the **Arctic Council**. However, **Russia**'s exclusion from this key Arctic governance framework following its invasion of **Ukraine** complicates this dynamic. While the remaining Arctic states work to strengthen their cooperation, **Russia's** isolation could, in the short term, push Moscow and Beijing closer together. Still, their partnership remains a necessity and a circumstantial arrangement rather than a fundamental mutual strategic alignment.

China views **Russia** as an important but not irreplaceable energy supplier. It takes advantage of Moscow's reduced bargaining power while securing long-term agreements with alternative suppliers. Additionally, the global energy transition poses long-term challenges to **Russia**'s fossil fuel-dependent economic model, further complicating the future of its Arctic projects.

[40] Simon McCarthy, *Chinas Coast Guard Claims to have entered the Arctic Ocean for the first time as it ramps up security ties with Russia,* CNN, 03 October 2024 https://edition.cnn.com/2024/10/03/china/china-russia-coast-guard-arctic-ocean-intl-hnk/index.html, Li Weichao, "*Chinese, Russian Coast Guards Conduct Joint Patrols in Arctic Ocean, Marking CCG's First Entry Into the Region*" , Global Times, 2024, http://eng.mod.gov.cn/xb/News_213114/TopStories/16342446.html.

The Arctic is set to remain a focal point of geopolitical competition and economic transformation. **Russia**'s growing dependence on **China** may curtail its strategic autonomy in Arctic affairs, while **China** must carefully navigate its role to avoid economic fallout from Western sanctions.

Sweden and **Finland**'s joining of **NATO** has also altered the power dynamics in the Arctic. **NATO**'s growing presence in the area may effectively counter Russian and Chinese ambitions, but it also increases the likelihood of armed conflicts. With the Arctic becoming more militarized, the area has emerged as a flashpoint for global competition. Russia views **NATO**'s northern expansion as a direct danger to national security. This could lead to increased military spending and greater strategic cooperation between **China** and **Russia**.

Territorial disputes and vast natural resource reserves make the Arctic a potential geopolitical flashpoint. Competition over these resources will escalate as ice melts, increasing geopolitical risks between the various stakeholders in the region. The likelihood of military confrontations over access to these resources, maritime trade routes, and sovereignty claims is high. **Russia** and **China** view the Arctic as crucial for their long-term economic stability and their security. Whether Sino-Russian cooperation in the Arctic will endure or fragment under shifting geopolitical realities remains an open question.